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Business Cycle Report

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Summary

Incoming data suggests that recession risk for 2023 continues to increase and is generally at highly elevated levels. Notably, the 10y3m yield curve finally inverted, ending October at -1bp. Historically, recessions don't start until 6-18 months after initial inversion of 10y3m. But that signal is arriving late relative to other leading indicators and so it might push the shorter end of that range (if indeed a recession materializes).

Last week's jobs report was mixed. There is a growing divergence between the establishment survey and the household survey in terms of the trend in total employment, with the household survey moving mostly sideways over the past seven months. The household survey shows just 150k in cumulative job gains since March, whereas the establishment survey shows 2.5 million. Also, the unemployment rate increased and that was with a *decline* in the labor force participation rate, a bad combination for the outlook. The lack of meaningful improvement in labor force participation continues to be a concern.

Conversely, temporary jobs are still making new all-time highs, typically a long leading indicator. In other words, recession typically only arrives several months after a peak in temporary employment. Also, cyclical job categories continue to show gains.

Bank lending standards, according to the Fed's Senior Loan Officer Opinion Survey (SLOOS), have continued to meaningfully tighten. The New York Fed's Household Debt and Credit Report comes out later this month and will provide further clues on the household credit cycle, which is looking like it has turned as judged by new transitions into delinquency.

One of the variables that's different in this cycle (and difficult to gauge), is that excess household savings built up in 2020 and 2021 through fiscal stimulus look like they have only been partially drawn down (roughly 25%). The remaining buffer of excess savings could prolong the cycle.

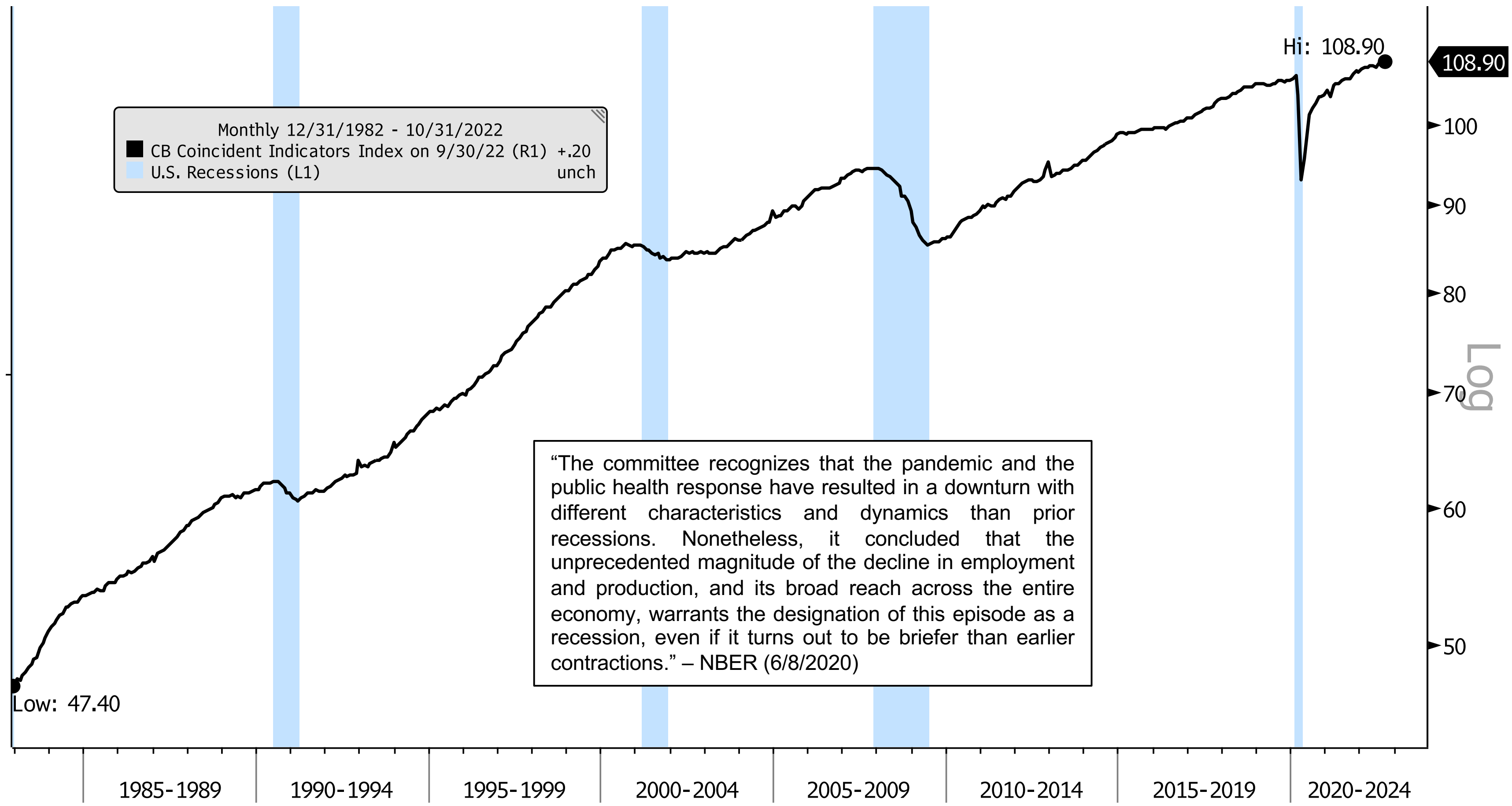
Internationally, there are some signs that China's economic growth is reaccelerating, with mixed implications: likely a positive for global growth but could add to inflation pressures and central bank tightening plans.

In summary, the weight of the evidence currently suggests that recession risk is very high. As always, the outlook remains data dependent and requires constant reassessment.

- Nick Reece

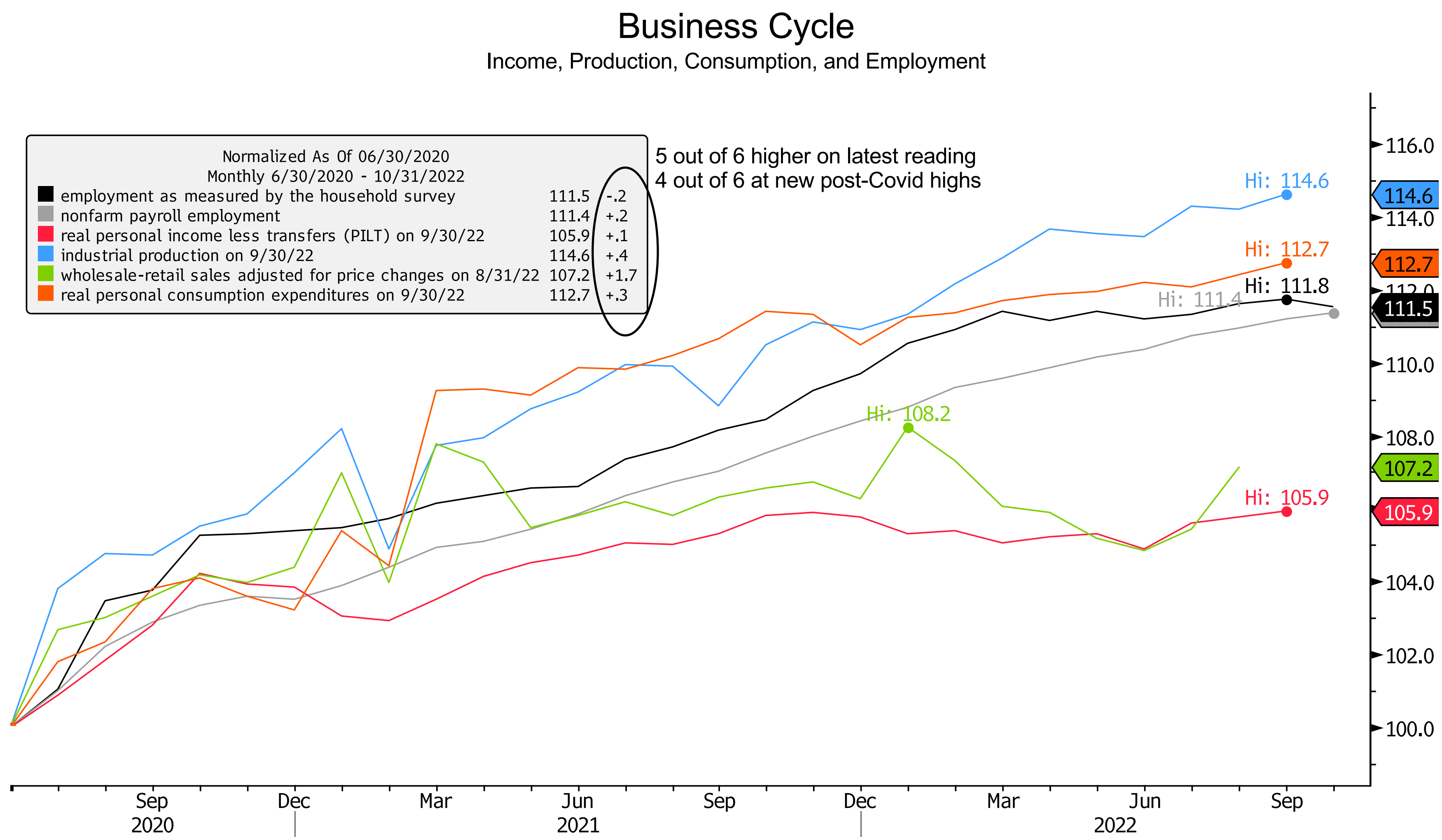
Business Cycle

Conference Board's Coincident Economic Index (black) and NBER recessions



Source: © Merk Investments, Bloomberg

Analysis: The new expansion is at least two years old. We have been out of the recovery phase of the new expansion since October 2021. In other words, aggregate real economic activity has moved above pre-Covid levels. The Covid recession (which is defined as the contraction phase) only lasted two months (March and April 2020). The Conference Board's Coincident Economic Index aggregates total employment, industrial production, inflation-adjusted personal income, and inflation-adjusted manufacturing sales. It does a good job of indicating recession start and end points although is subject to data lags and data revisions.
NBER: https://www.nber.org/cycles.html

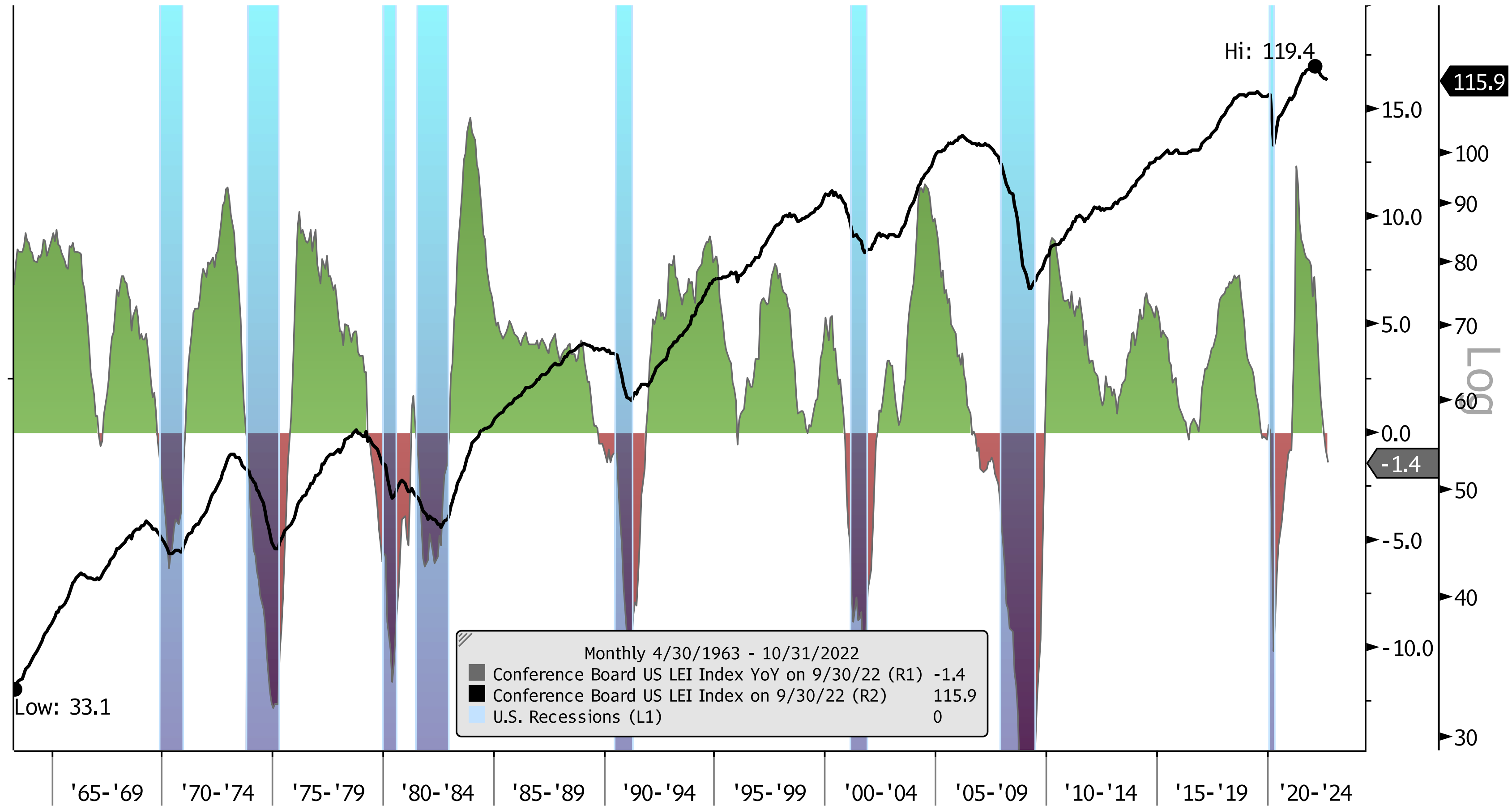


Source: © Merk Investments, Bloomberg

Analysis: Above is the official data that we know NBER's business cycle dating committee tracks. It seems unlikely that the US economy has been in recession over the first three quarters of the year (of 2022). This data is subject to revisions however, so we need to be mindful of that.

U.S. Leading Economic Indicators (LEIs) Index

Conference Board's LEI Index and YoY Rate of Change

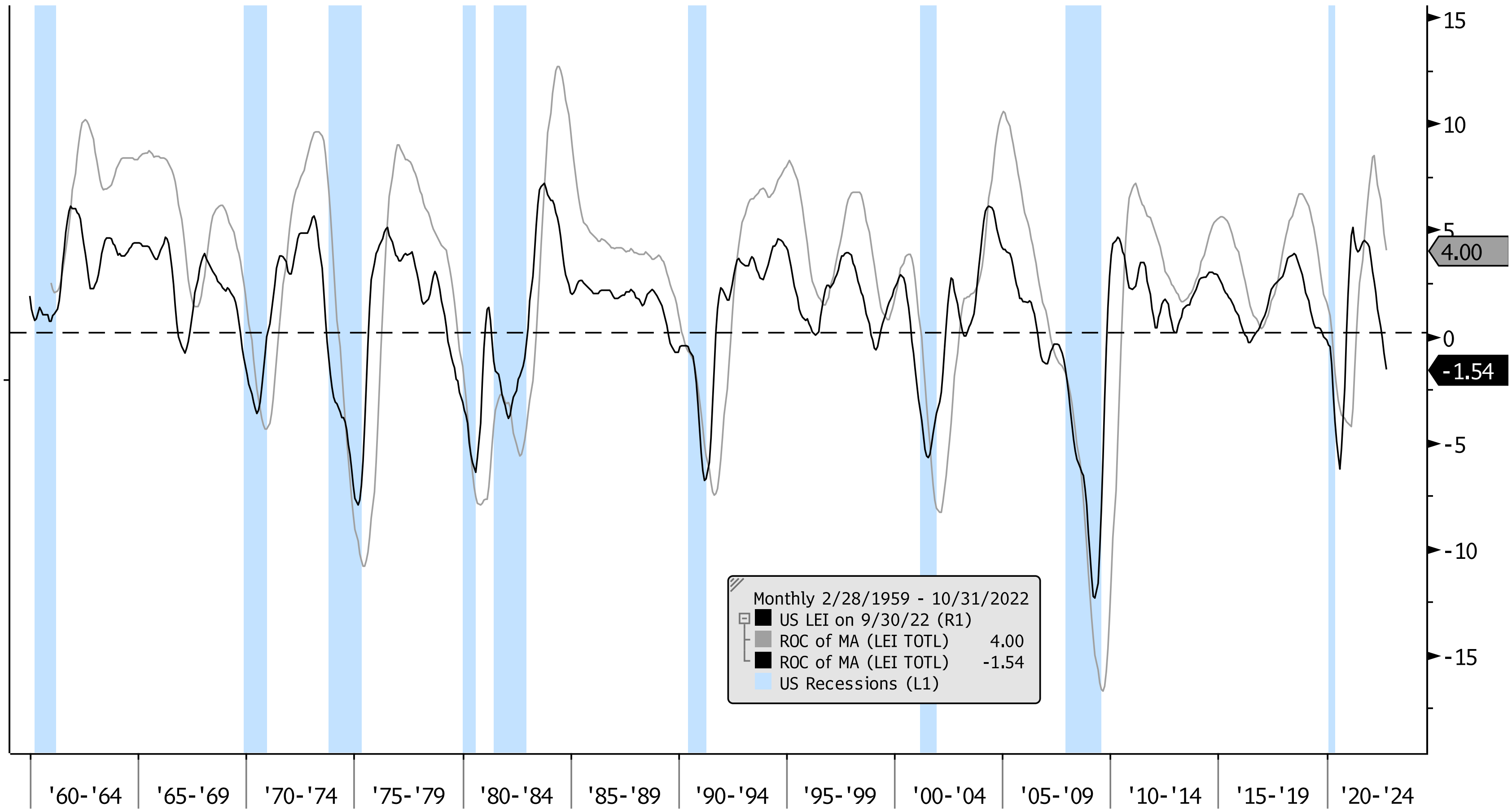


Source: © Merk Investments, Bloomberg

Analysis: The LEI index has declined over the past seven months and is negative year over year. As previously noted, the 2020 Covid-induced recession was the first time the LEIs failed to signal an imminent recession (given the positive picture in February 2020)—that speaks to the sudden exogenous shock nature of the Covid19 pandemic/shutdown. Framework: Incrementally negative on the economic outlook if the YoY rate of change is negative or the index is down four or more consecutive months. Incrementally positive with index moving higher month-over-month.

U.S. Leading Economic Indicators (LEIs) Index

The 12m RoC of the 12m MA (grey) and the 6m RoC of the 6m MA (black)

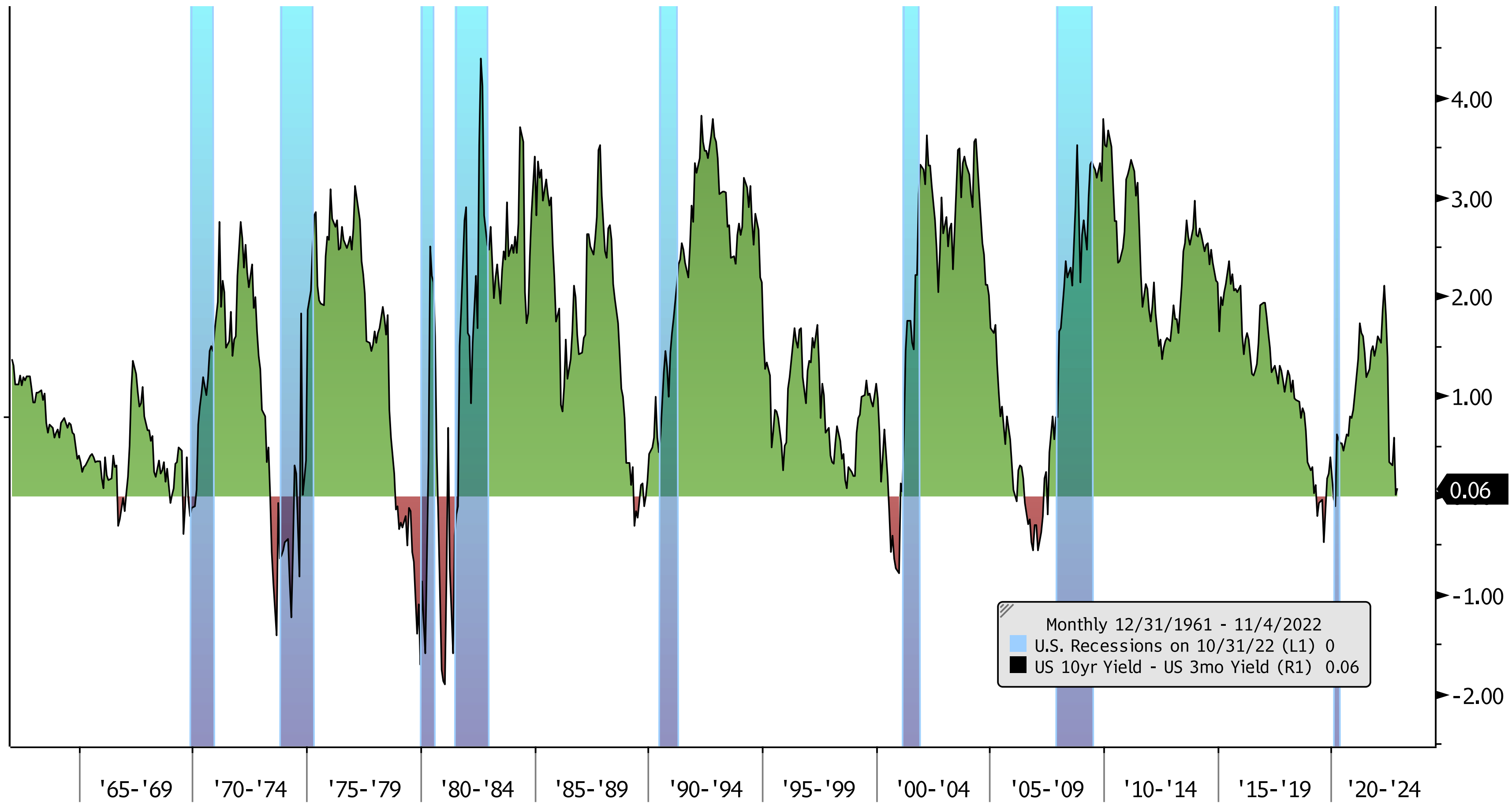


Source: © Merk Investments, Bloomberg

Analysis: The black line is the shorter-term rate of change in the LEI index and shows a clear downturn in the LEIs. It is common to have mid-cycle slowdowns but given the inverted yield curve (2s10s) and Fed tightening cycle, it's less likely this is part of a mid-cycle slowdown.

U.S. Yield Curve Steepness

(10yr yield – 3mo yield)

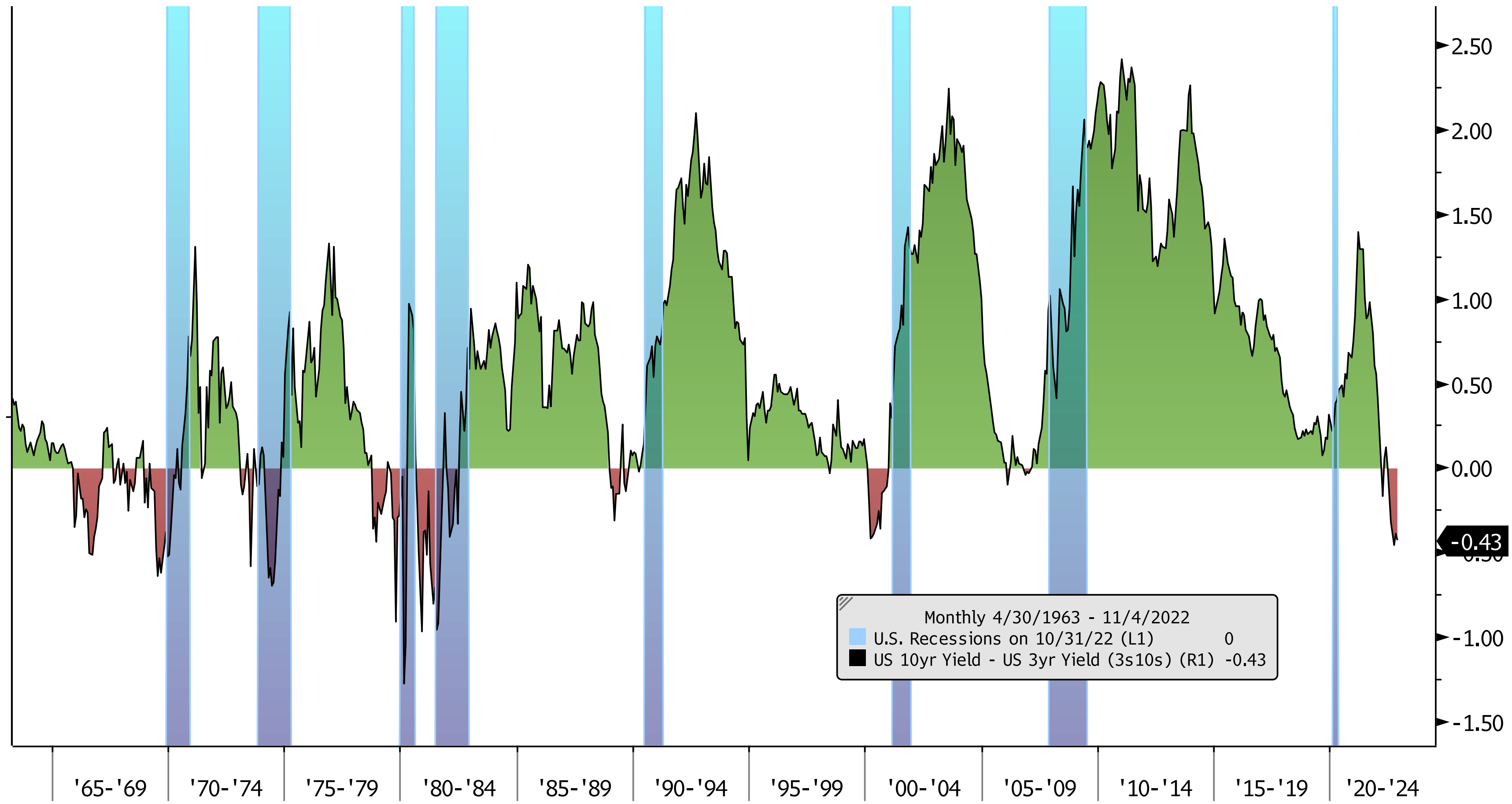


Source: © Merk Investments, Bloomberg

Analysis: The yield curve (3m10y) finally inverted and ended October at -1bp. 10yr-3m inversion has historically been a strong recession indicator (with recessions historically starting 6-18 months after initial inversion). In hindsight, this may be one of the only leading indicators that "predicted" the 2020 recession. Prior to the Covid recession, the 10yr-3m yield curve had inverted (meaning the 3-month yield was higher than the 10-year yield) from May to October 2019 and again briefly in Q1 2020. I'm currently negative on this picture. Chart Framework: I'd get incrementally positive on the economic outlook if the yield curve uninverts with the 3m moving lower and the 10y stable to higher.

U.S. Yield Curve Steepness

(10yr yield – 3yr yield)

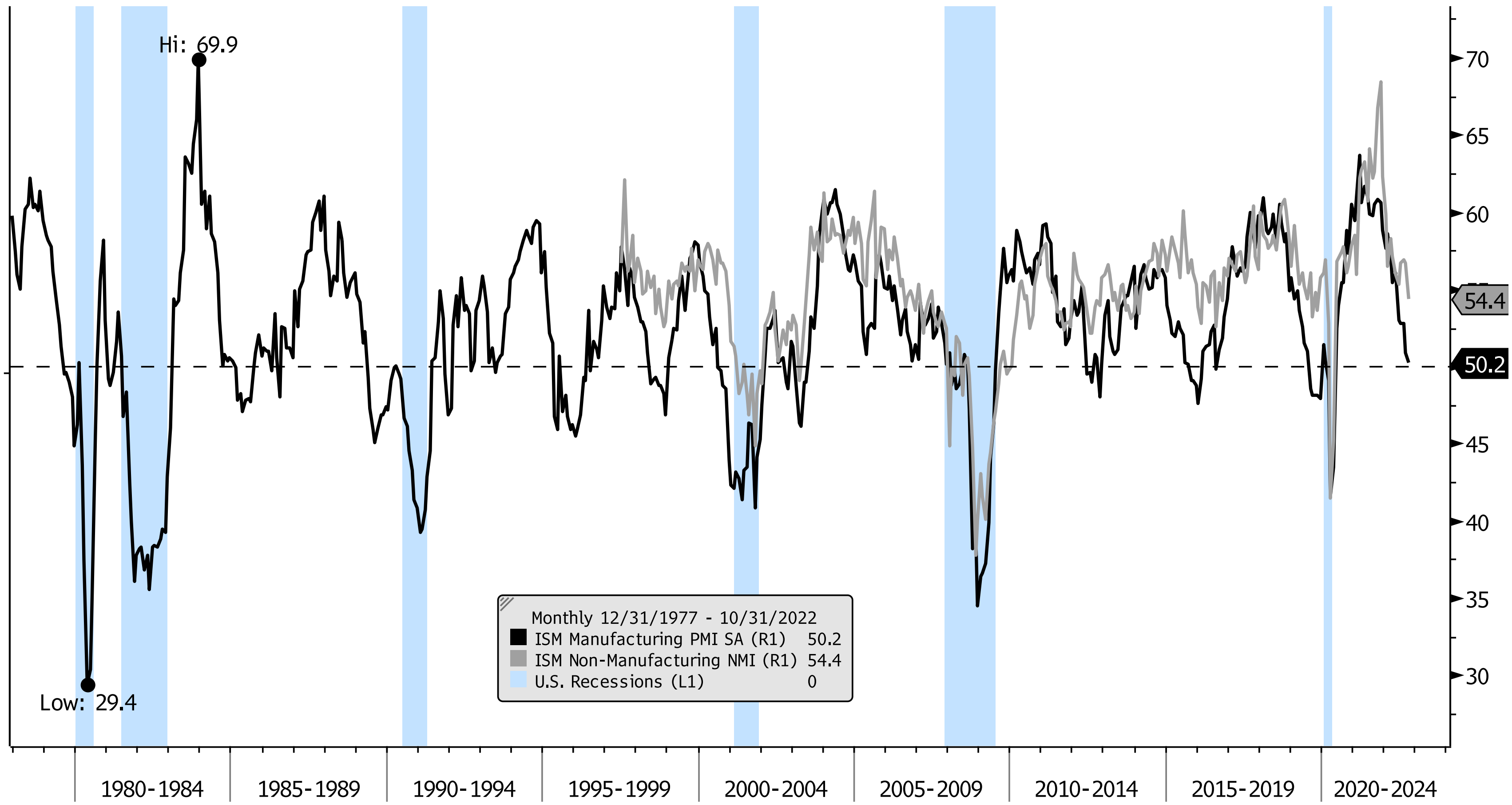


Source: © Merk Investments, Bloomberg

Analysis: The 10yr-3yr yield curve is deeply inverted. It has reached depths not seen since the Volcker-era. It's worth noting that the 3y10y yield curve remained positively sloped (meaning the 10yr yield is higher than the 3yr yield) ahead of the Covid recession. The Covid recession was the first time the 3y10y didn't invert prior to a recession. Chart Framework: I'd get incrementally negative on the medium-term business cycle outlook if/when the yield curve (either the 3m10y or the 3y10y) inverts. It's worth looking at both the 3m10y and the 3y10y: the 3y10y will invert sooner in a bear flattening (most cycles) and the 3m10y will invert sooner in a bull flattening (Covid cycle).

U.S. PMIs

Manufacturing and Non-manufacturing (aka Services) PMIs (Purchasing Managers Index)



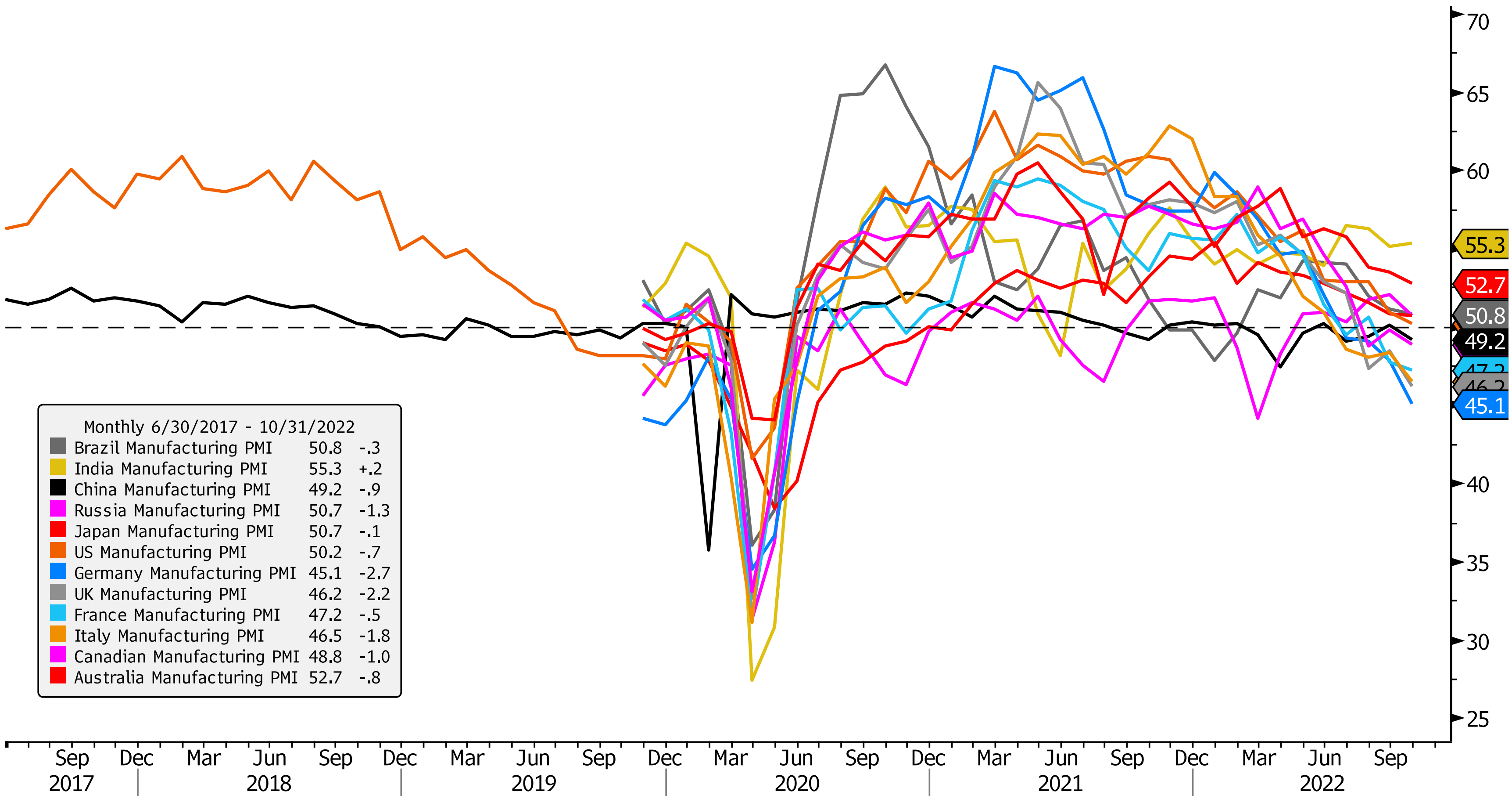
Source: © Merk Investments, Bloomberg

Analysis: The US Manufacturing PMI decreased in October but both manufacturing and services PMIs remain above 50 (albeit just barely). Chart Framework: I'd get incrementally negative on the economic outlook if the manufacturing PMI falls below 50.

PMI is a diffusion index, meaning it's a cross-sectional way to analyze incremental changes among various time-series. It aggregates multiple indicators by examining whether they are getting better or worse relative to the prior month but ignores the magnitude of the change.

Global Manufacturing PMIs

Largest twelve global economies' Manufacturing PMIs (Purchasing Managers Index)

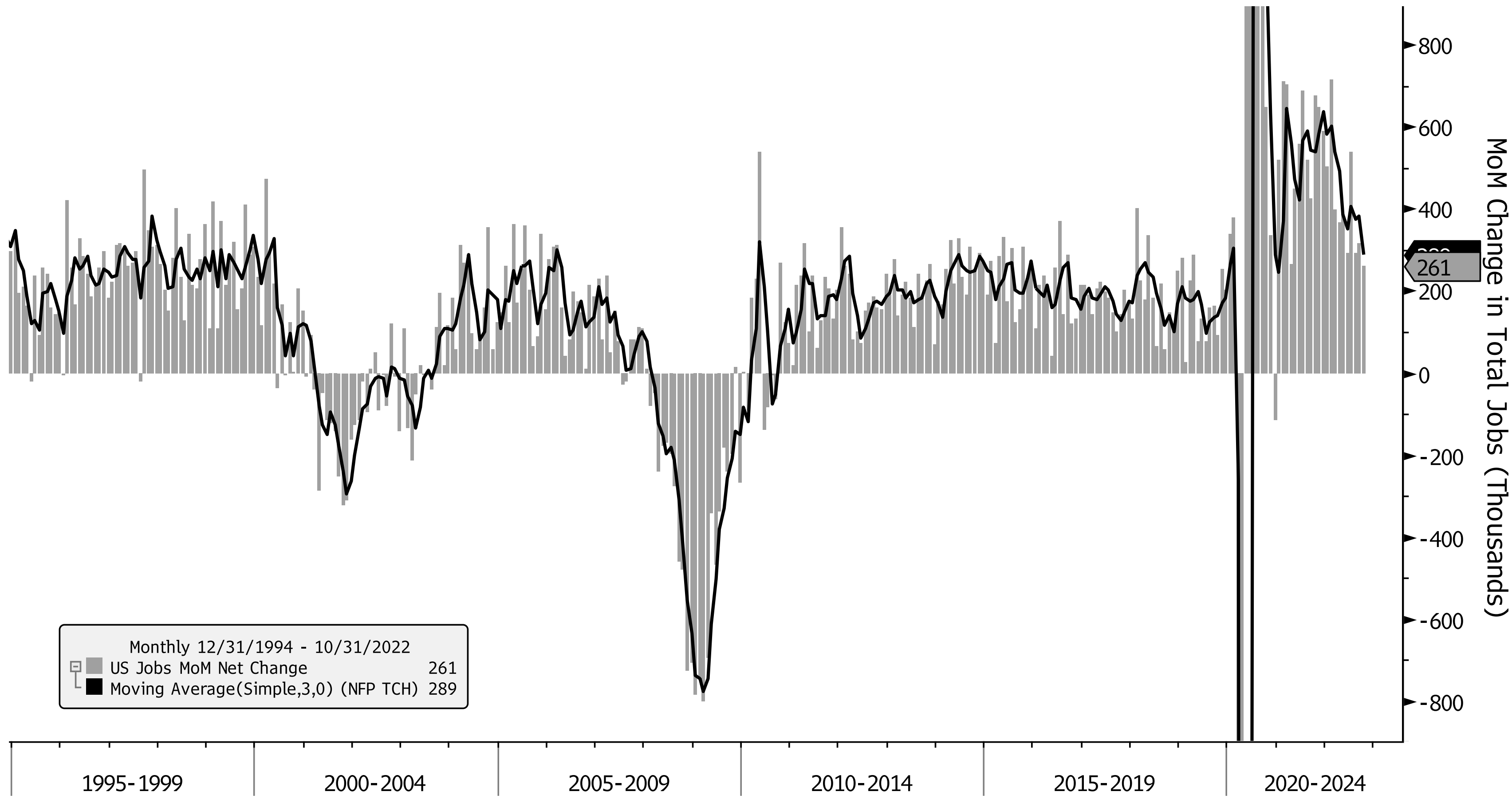


Source: © Merk Investments, Bloomberg

Analysis: Global manufacturing PMIs were mostly lower over the past month (11 lower vs 1 higher). Right now, 6 out of 12 are below 50 (China, France, Germany, UK, Italy, and Canada). Chart Framework: incrementally positive on the economic outlook with 2/3rds of Mfg PMIs above 50 if before a recession or incrementally positive with two or more above 50 if coming out of recession (e.g., after a majority have fallen below 50).

Job Gains

The Net Monthly Change in Non-farm Payrolls (grey) with 3-month Moving Average (black)



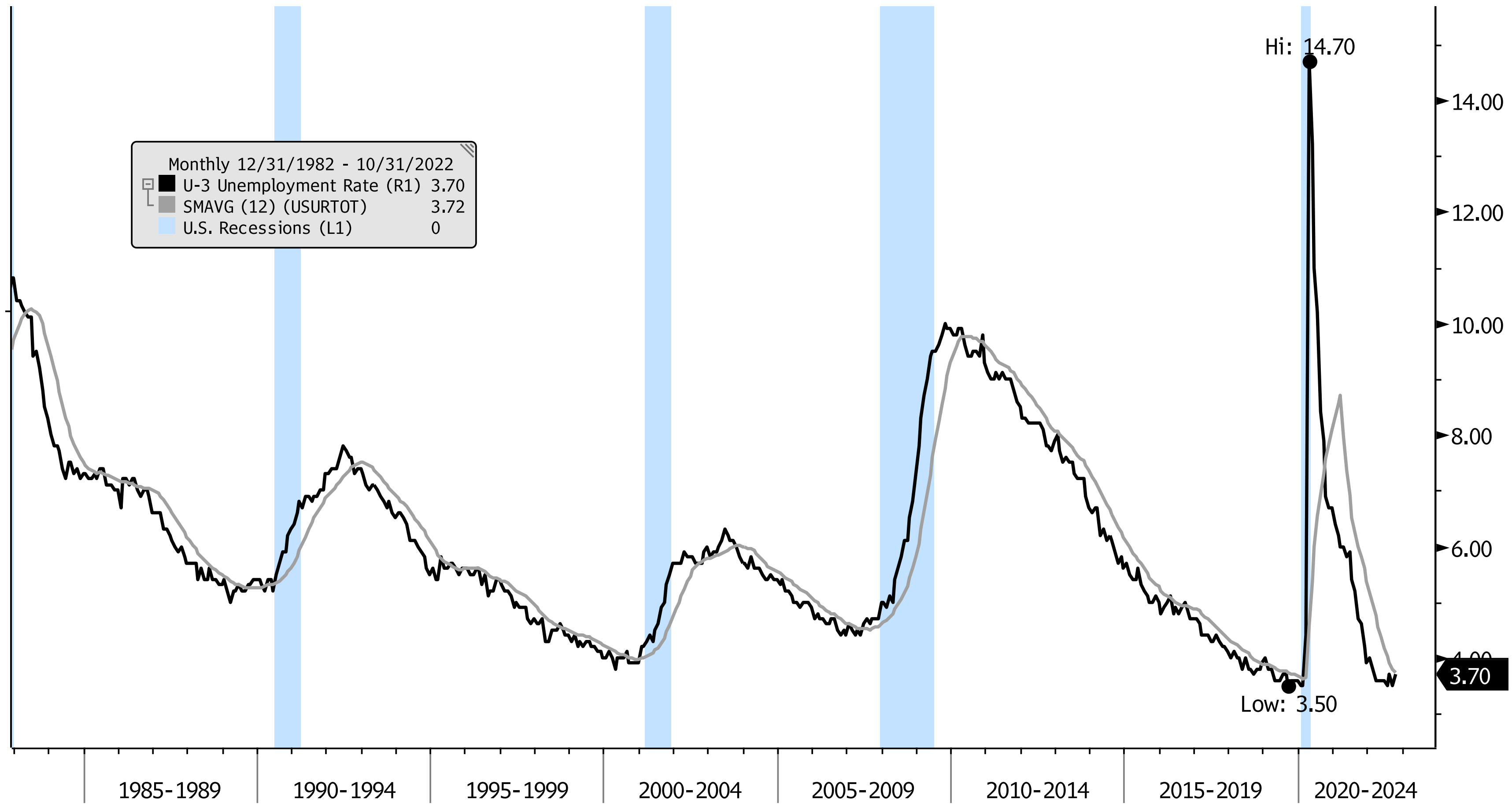
Source: © Merk Investments, Bloomberg

Analysis: October job gains were generally in line with expectations. The 3-month moving average is clearly declining although a deceleration coming off the recovery phase is not surprising. Framework: I'd get incrementally negative on the economic outlook if the 3-month moving average falls below 100k.

Latest Jobs Report: https://www.bls.gov/news.release/empsit.nr0.htm

U.S. Unemployment Momentum

U-3 Rate and U-3 12-month Moving Average

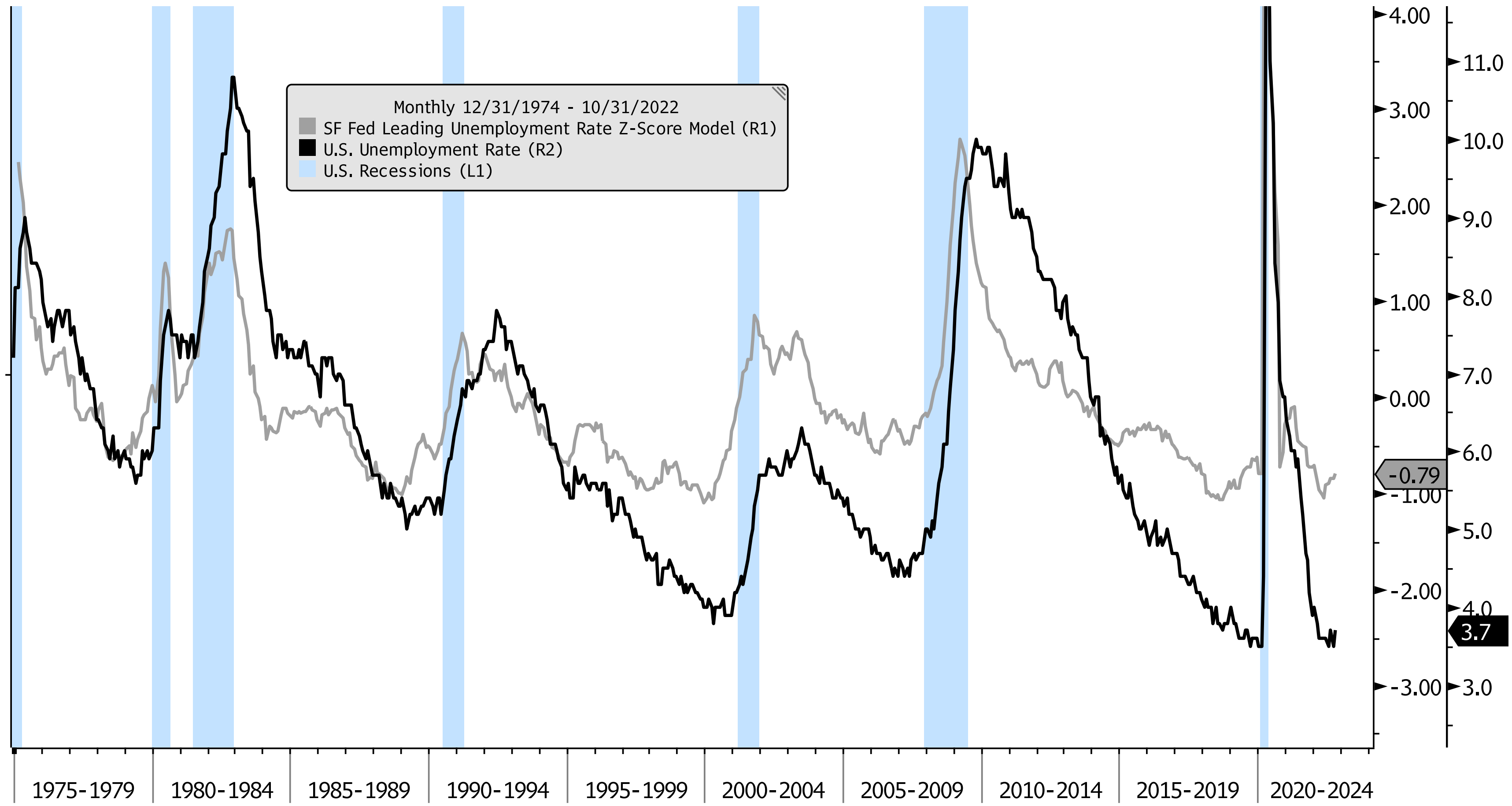


Source: © Merk Investments, Bloomberg

Analysis: The unemployment rate increased to 3.7% (with a declining participation rate). The unemployment rate remains (barely) below its 12-month moving average. Chart Framework: I'd get incrementally negative on the economic outlook if the unemployment rate moved above its 12-month moving average with a declining participation rate.

San Francisco Fed Leading Unemployment Rate (U-3) Model

Replica of San Francisco Fed Model* (grey) and U-3 Unemployment Rate (black)



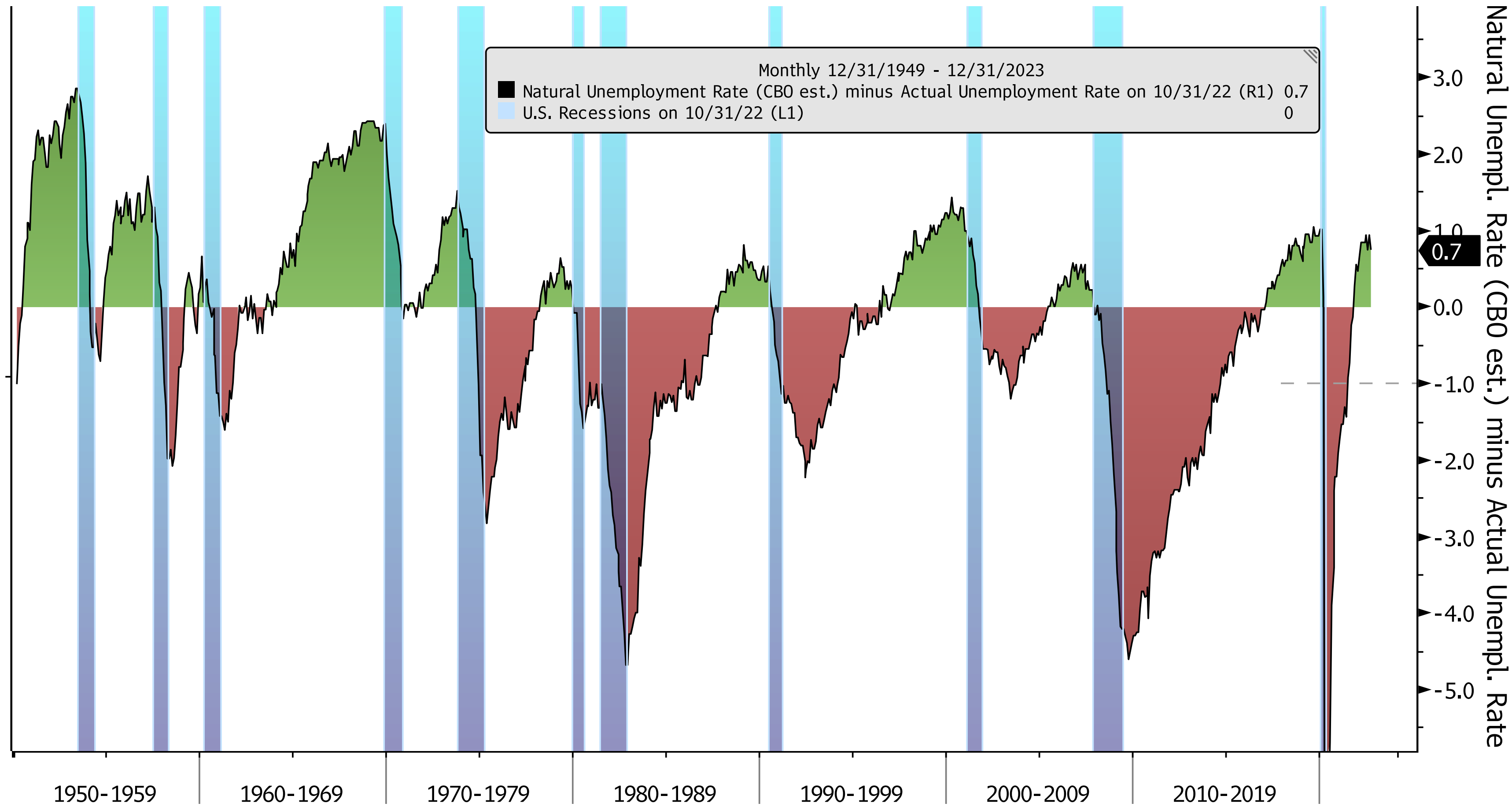
Source: © Merk Investments, Bloomberg

Analysis: The SF Fed unemployment rate model (grey line) has been rising in recent months. I'm currently neutral/negative on this picture. Chart Framework: I'd get incrementally negative on the economic outlook if the SF Fed model line starts trending higher year over year.

*The SF Fed identified six indicators they believe are predictors of future developments in the unemployment rate: insured unemployment rate, initial claims, capacity utilization, the jobs gap, the ISM manufacturing index, and private payroll employment growth. The model creates an average Z-score of these six indicators. For reference see the San Francisco Fed Paper

U.S. Labor Market Slack

Natural Rate of Unemployment (CBO est.) – Actual Rate of Unemployment

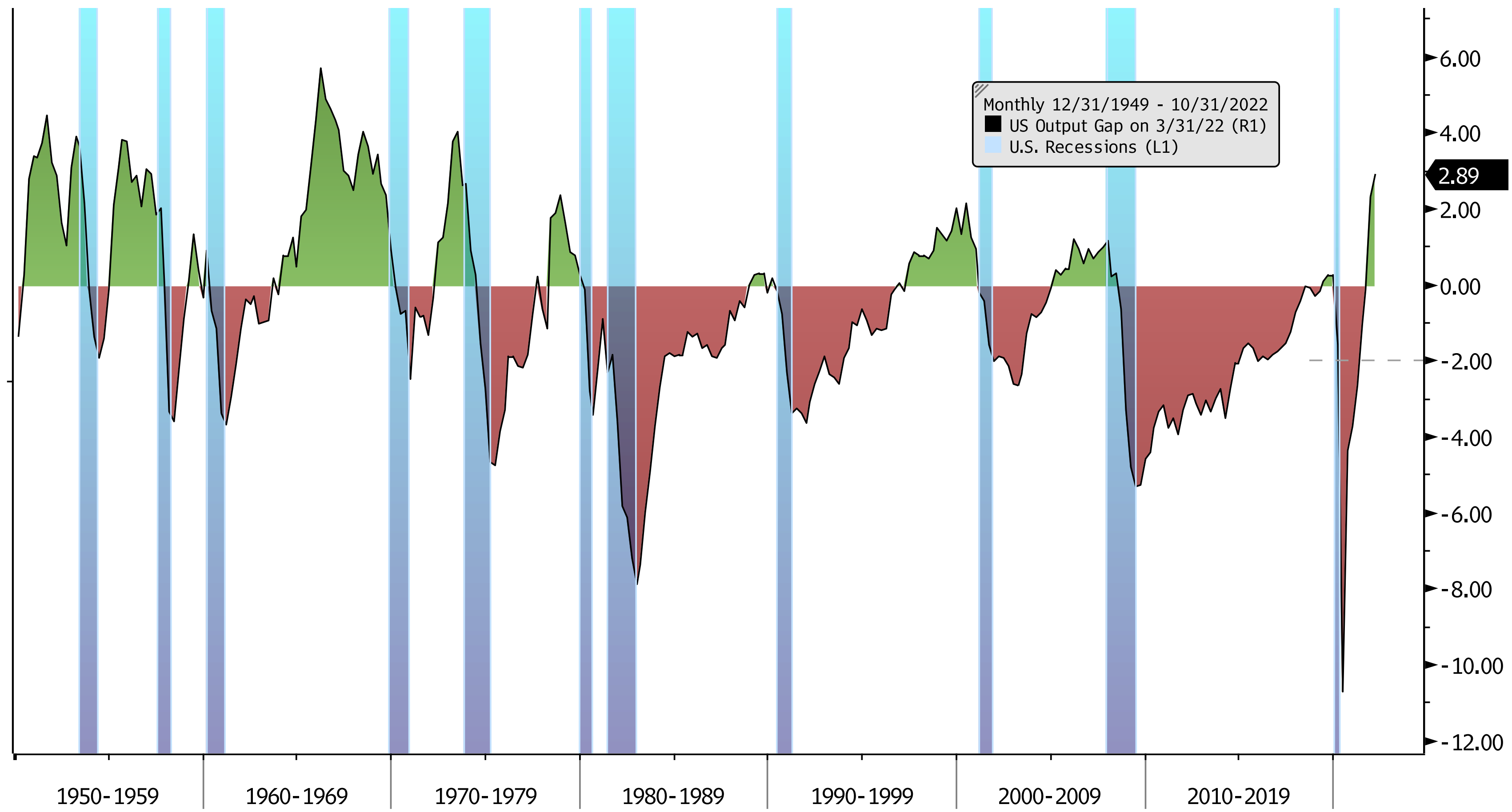


Source: © Merk Investments, Bloomberg

Analysis: The current unemployment rate is below the estimated natural rate of unemployment (3.5% current reading vs. 4.4% estimate), indicating a tight labor market. Labor market slack is a broader concept than just the headline unemployment rate. In my view, the pandemic and related lockdowns, along with fiscal stimulus measures and reduced immigration, have created (at least near-term) an artificially tight labor market. But that's proven to be a lasting medium-term trend. I'm currently negative on this chart. Chart Framework: I'd get incrementally positive on the medium/longer term economic outlook below 0.5.

U.S. GDP Output Gap

Actual GDP minus Potential GDP (CBO est.)

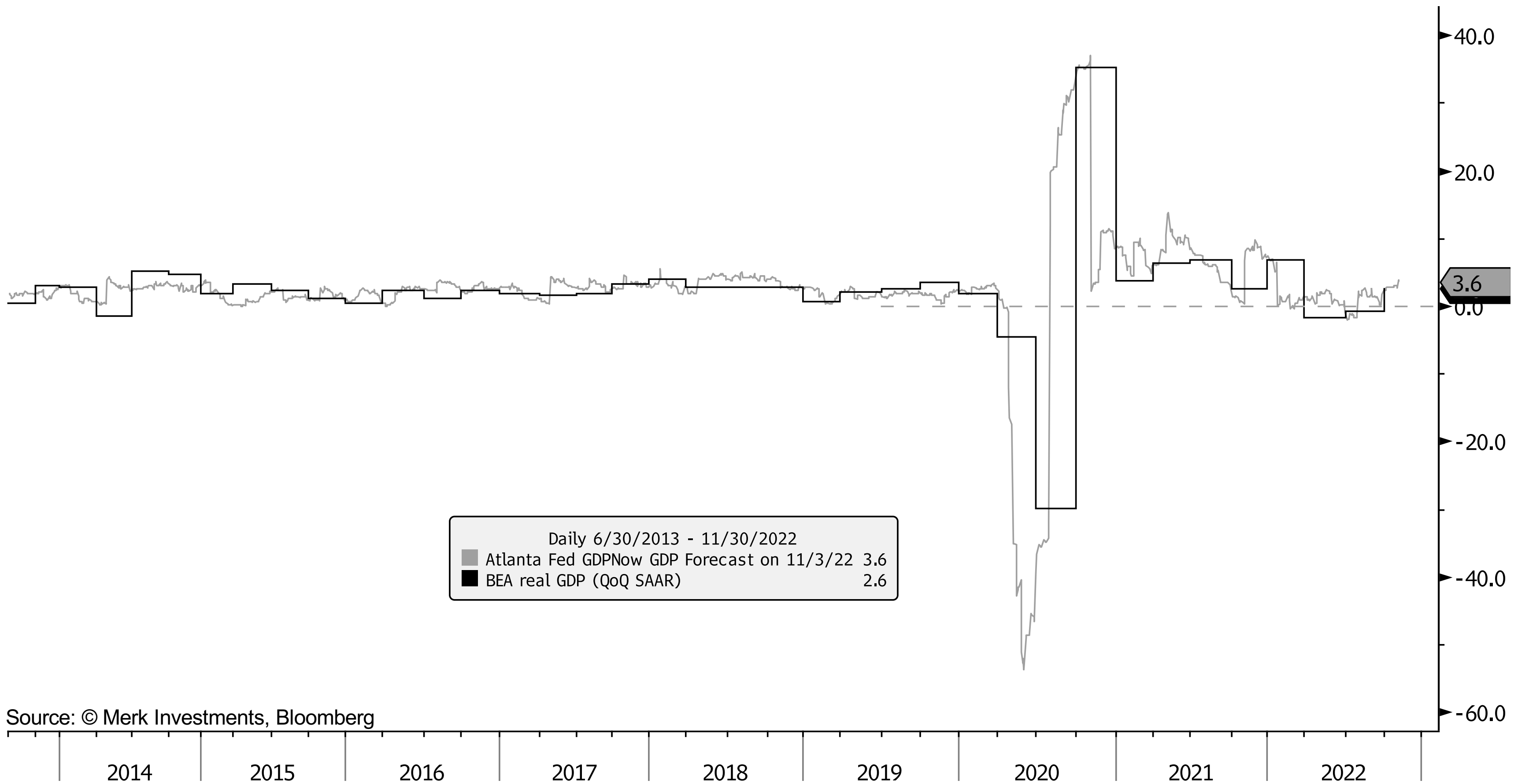


Source: © Merk Investments, Bloomberg

Analysis: The sharp Covid contraction created a large output gap, which has closed rapidly over the past 2 years and now the economy is operating above estimated sustainable potential. Chart Framework: I'd get incrementally positive on the medium/longer term economic outlook with the output gap negative (i.e., below zero).

Atlanta Fed GDPNow GDP Forecast

GDPNow Forecast and the official QoQ SAAR from BEA



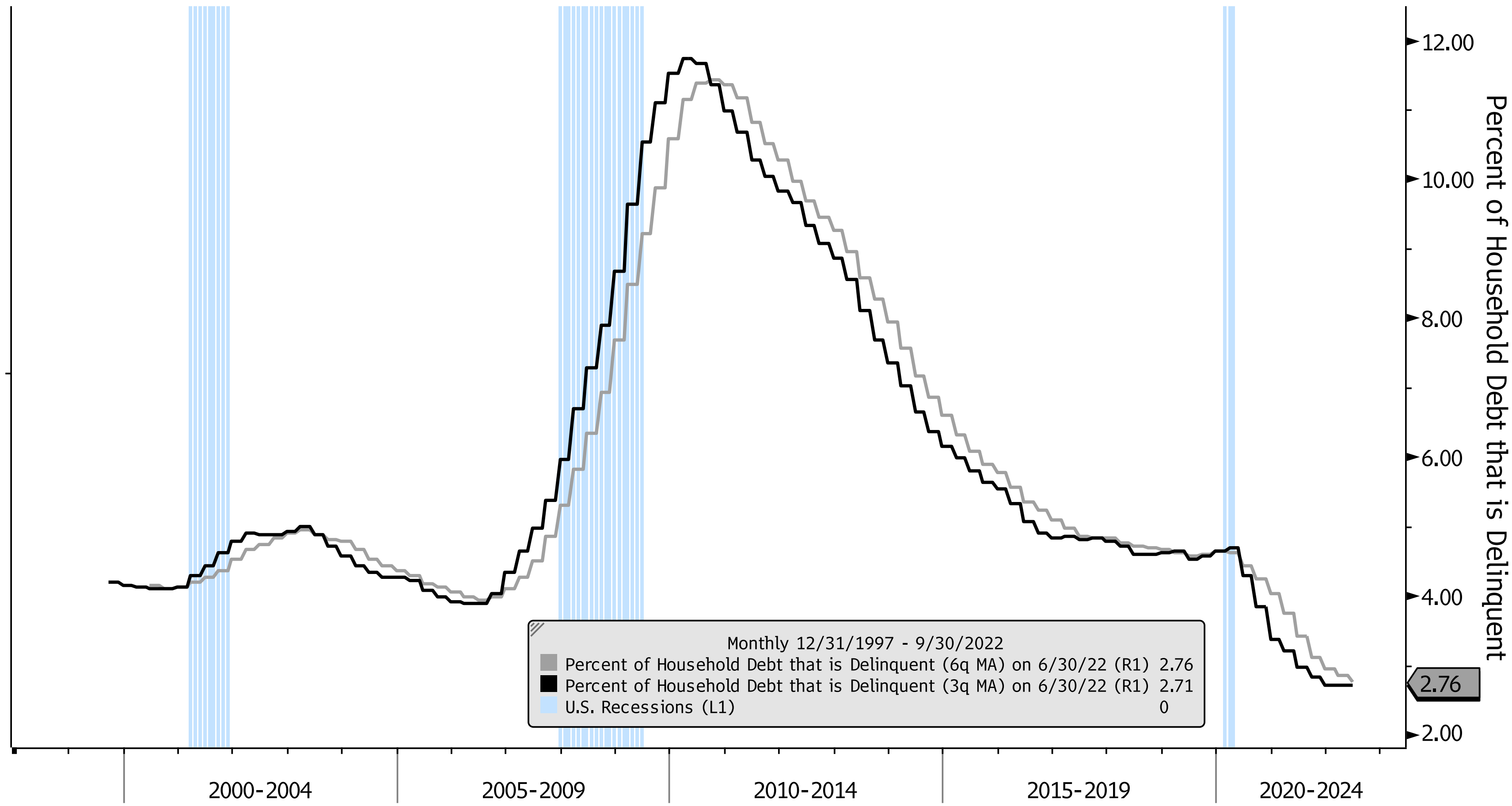
Source: © Merk Investments, Bloomberg

Analysis: The Q4 GDP growth nowcast is currently at +3.6%, that's the highest nowcast reding since Q1. This metric is usually reasonably accurate at quarter end, which is still several weeks away. Chart framework: I'd get incrementally negative on the economic outlook if the forecast falls below zero.

Atlanta Fed GDPNow report: https://www.frbatlanta.org/-/media/documents/cqer/researchcq/gdpnow/RealGDPTrackingSlides.pdf

US Household Credit Cycle

Percent of Household Debt that is Delinquent (3 quarter and 6 quarter moving averages)



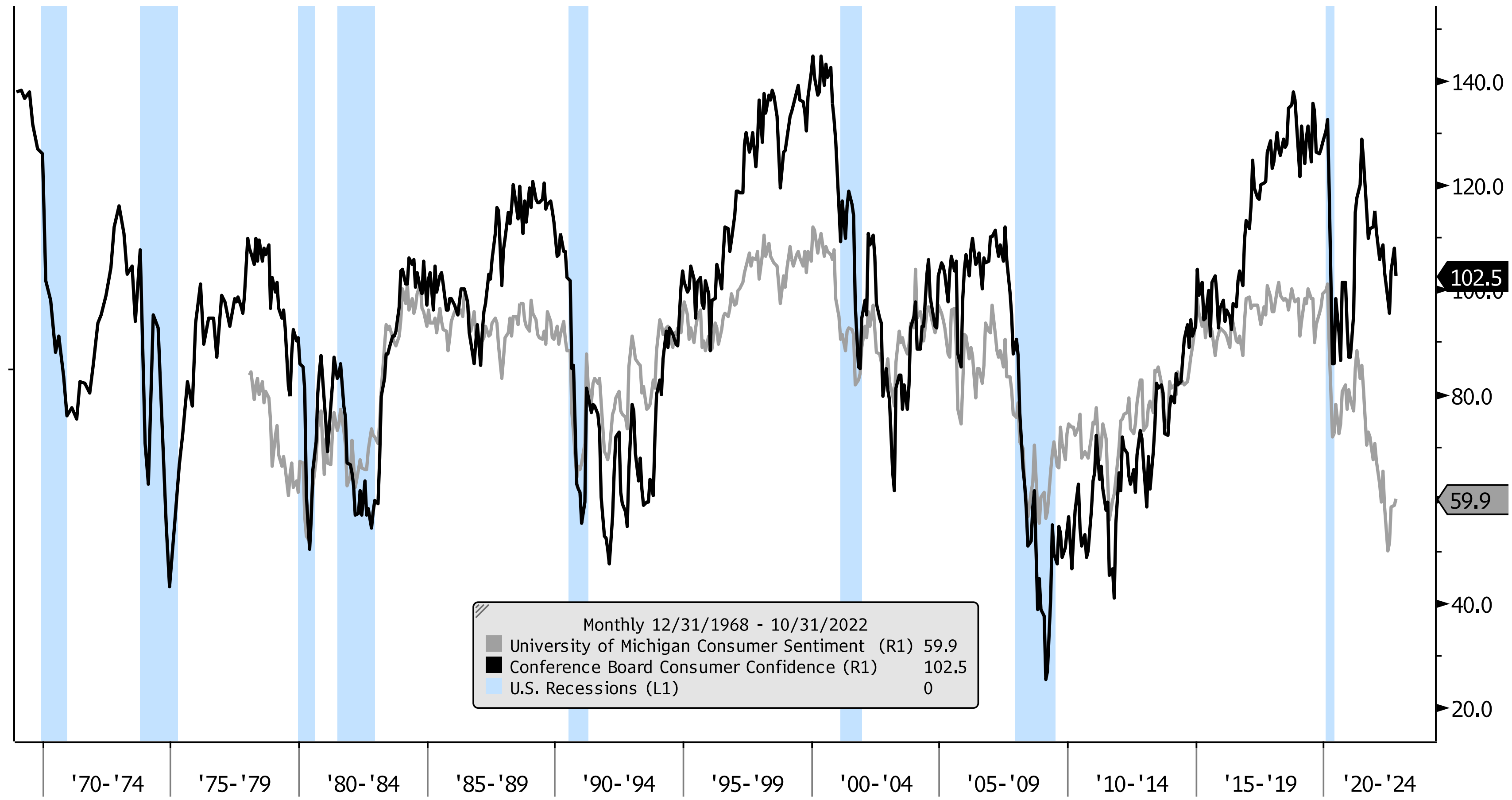
Source: © Merk Investments, Bloomberg

Analysis: The Q2 2022 data showed a stable delinquency rate. But transitions into delinquency have started to rise. "Although foreclosures have been very low due to the moratoria on new foreclosures and mortgage forbearances, 35,000 individuals saw new foreclosures on the credit reports, an increase from 24,000 in the previous quarter, an uptick potentially suggesting the beginning of a return to more typical levels." – NY Fed Report. Framework: I'd get incrementally negative on the economic outlook if the 3q MA moves above the 6q MA.

NY Fed Report: https://www.newyorkfed.org/medialibrary/interactives/householdcredit/data/pdf/HHDC_2022Q2

U.S. Consumer Confidence

Michigan Consumer Sentiment and Conference Board Consumer Confidence



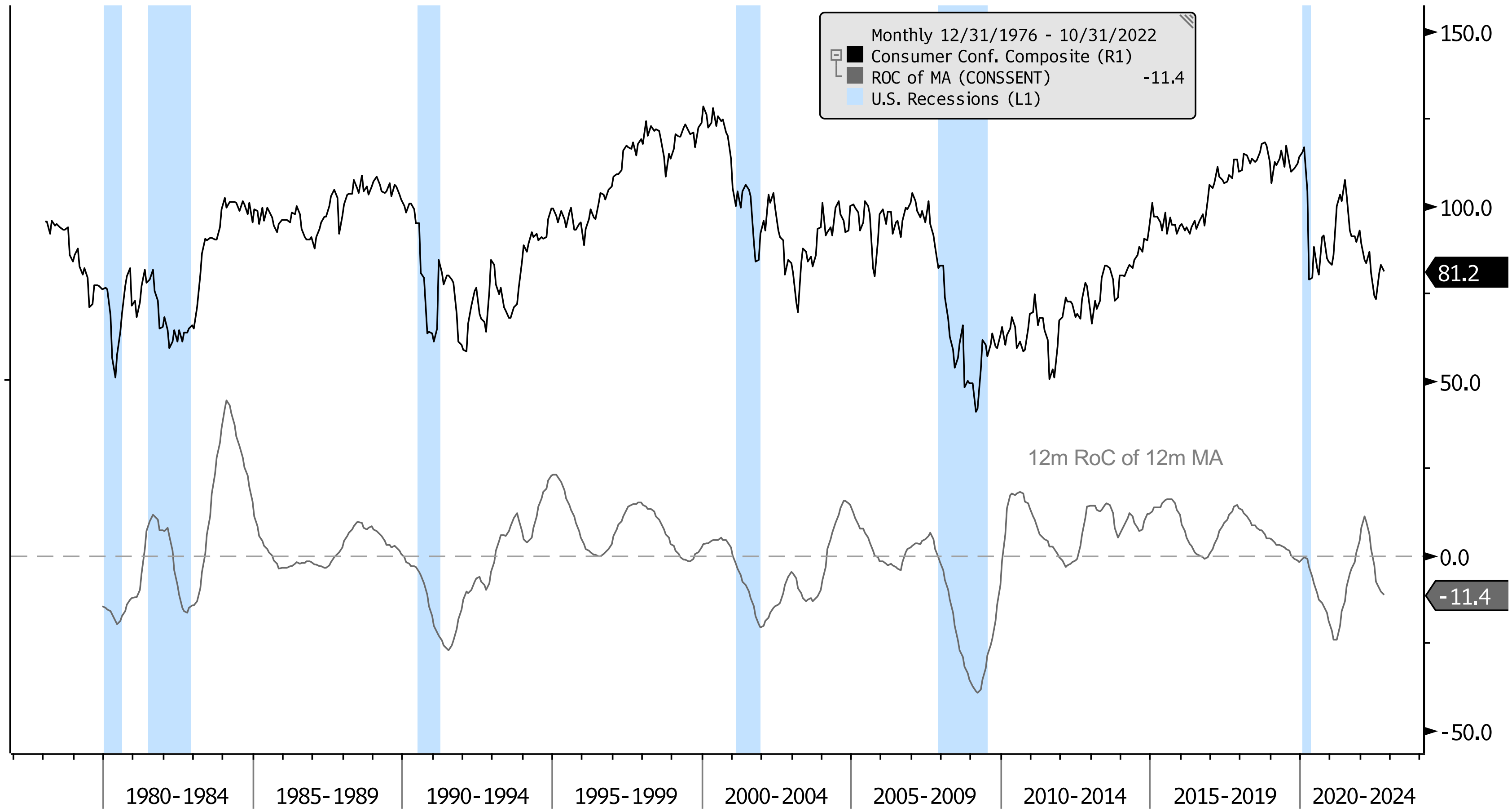
Source: © Merk Investments, Bloomberg

Analysis: Consumer confidence has improved slightly over the past few months, but has generally been weaking over the past year, in large part due to inflation. I'm currently negative on this picture. Chart Framework: I'd get incrementally positive on the economic outlook if both measures start trending higher.

Conference Board: https://www.conference-board.org/data/consumerconfidence.cfm
U Mich: http://www.sca.isr.umich.edu

U.S. Consumer Confidence

Michigan Consumer Sentiment and Conference Board Consumer Confidence Index (black) and 12-month Rate of Change of 12-month Moving Average (grey)

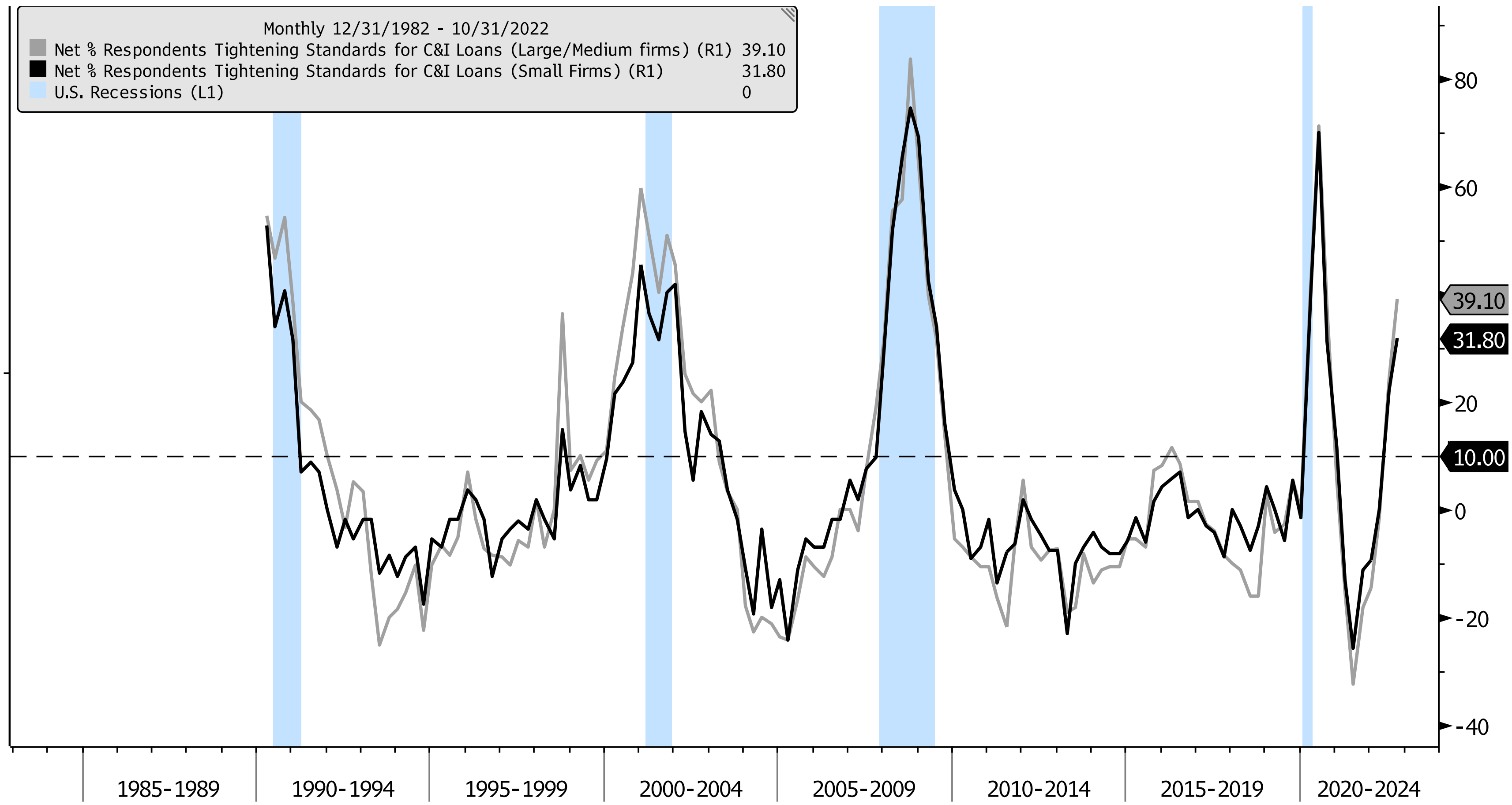


Source: © Merk Investments, Bloomberg

Analysis: The 12m RoC of the 12m MA is below zero and trending down—that's a negative sign for the near-term outlook.

Bank Lending Standards

Senior Loan Officer Opinion Survey (SLOOS): Net % of Respondents that are Tightening Lending Standards for Commercial and Industrial (C&I) Loans

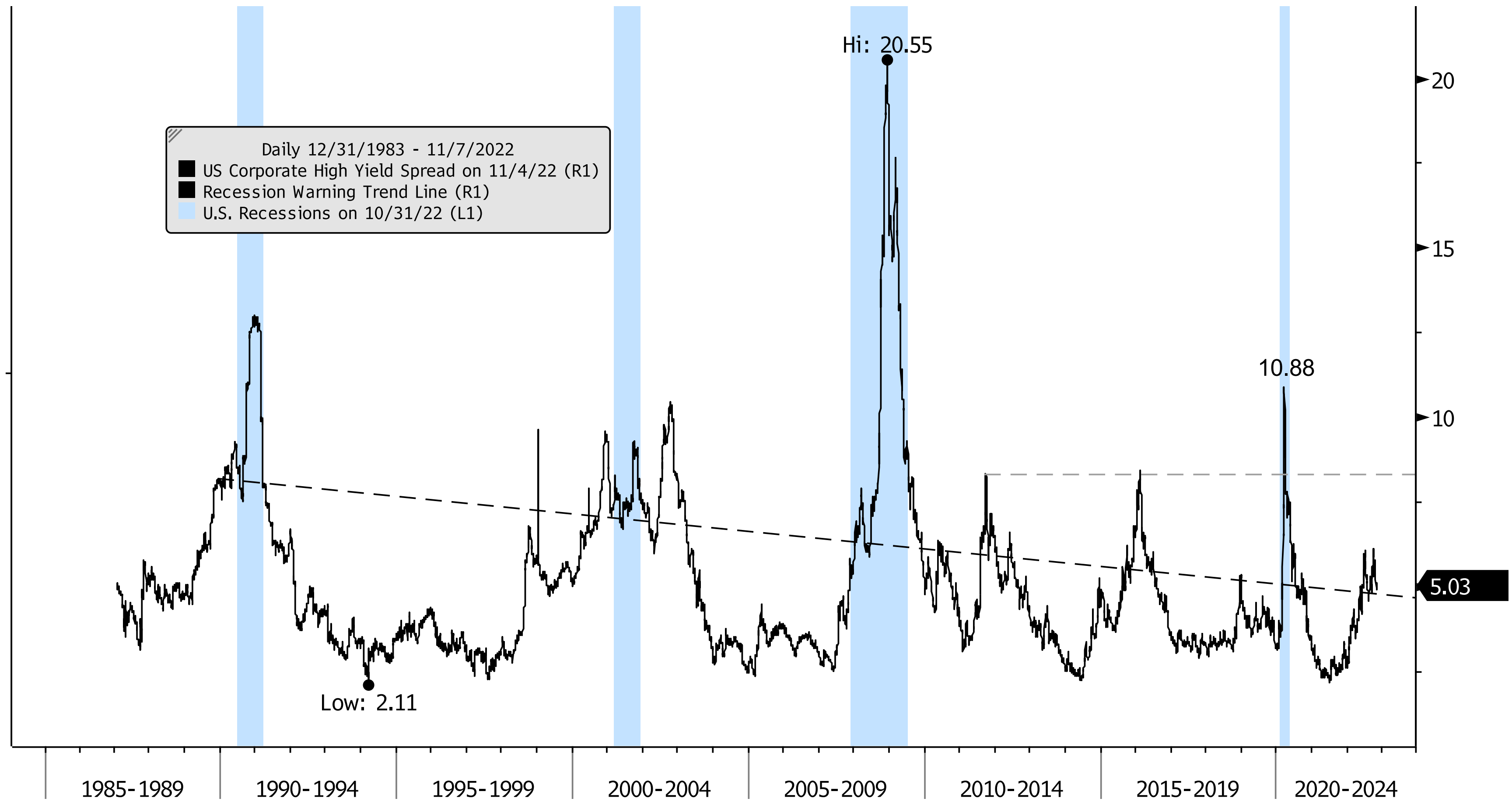


Source: © Merk Investments, Bloomberg

Analysis: Data from the Fed's Senior Loan Officer Opinion Survey suggest bank lending standards have further tightened over the three months ending October 31st. Chart Framework: I'd get incrementally positive on the economic outlook if the percent of respondents reporting tightening lending standards moves lower. This data only comes out quarterly.

High Yield Spread

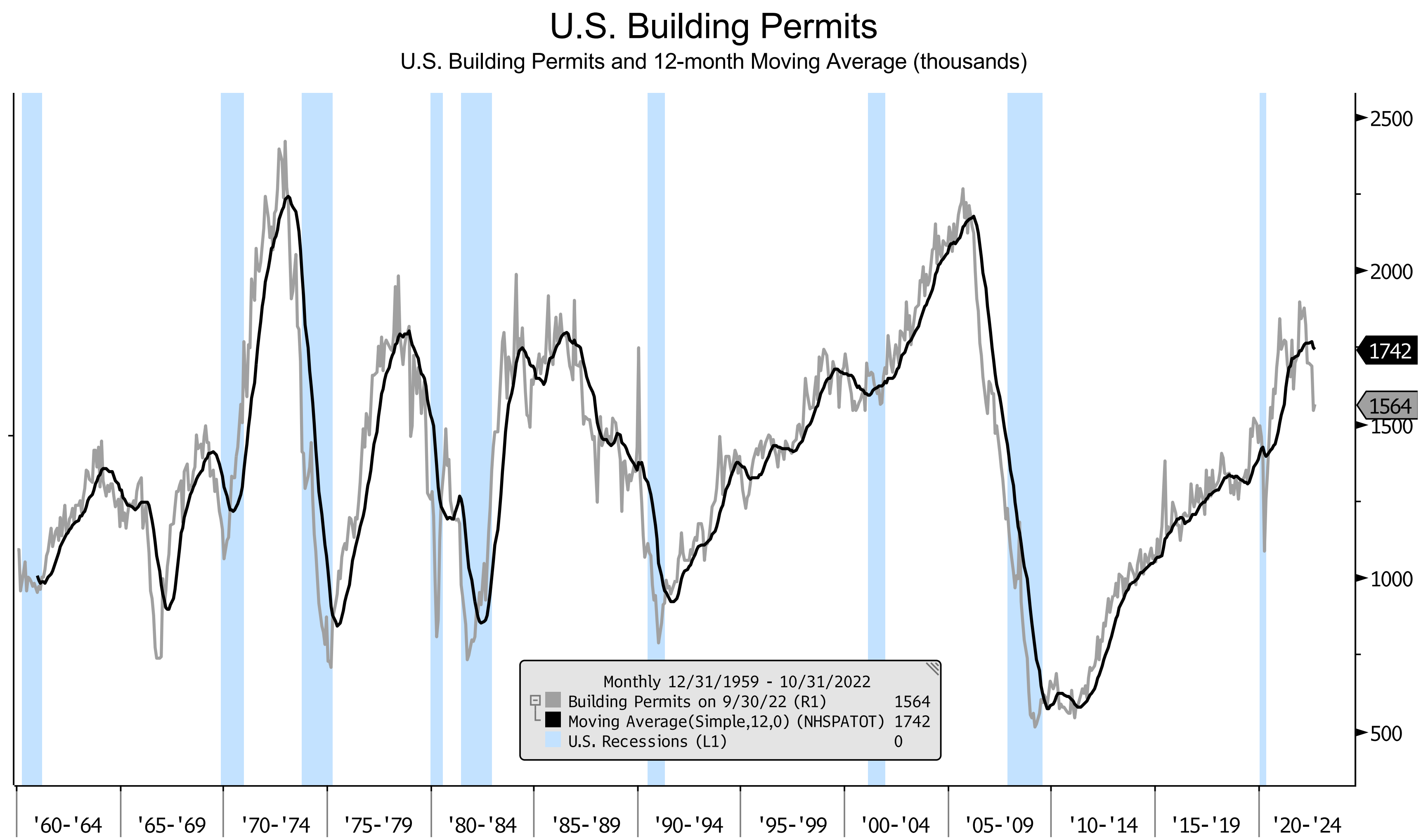
U.S. High Yield Spread (vs 10yr Treasury Yield) with Trend Line



Source: © Merk Investments, Bloomberg

Analysis: The high yield credit spread has decreased slightly in the past month. It remains above 5, but is not yet pricing in a recession. I'm currently negative on this picture. Chart Framework: incrementally negative on the economic outlook with the spread above 5. Anything above 8 would suggest that the bond market is pricing in a recession and this metric would start to become a contrarian indicator.

The high yield credit spread is the difference between the yield-to-worst on the US high yield bond index and the US 10yr Treasury yield.

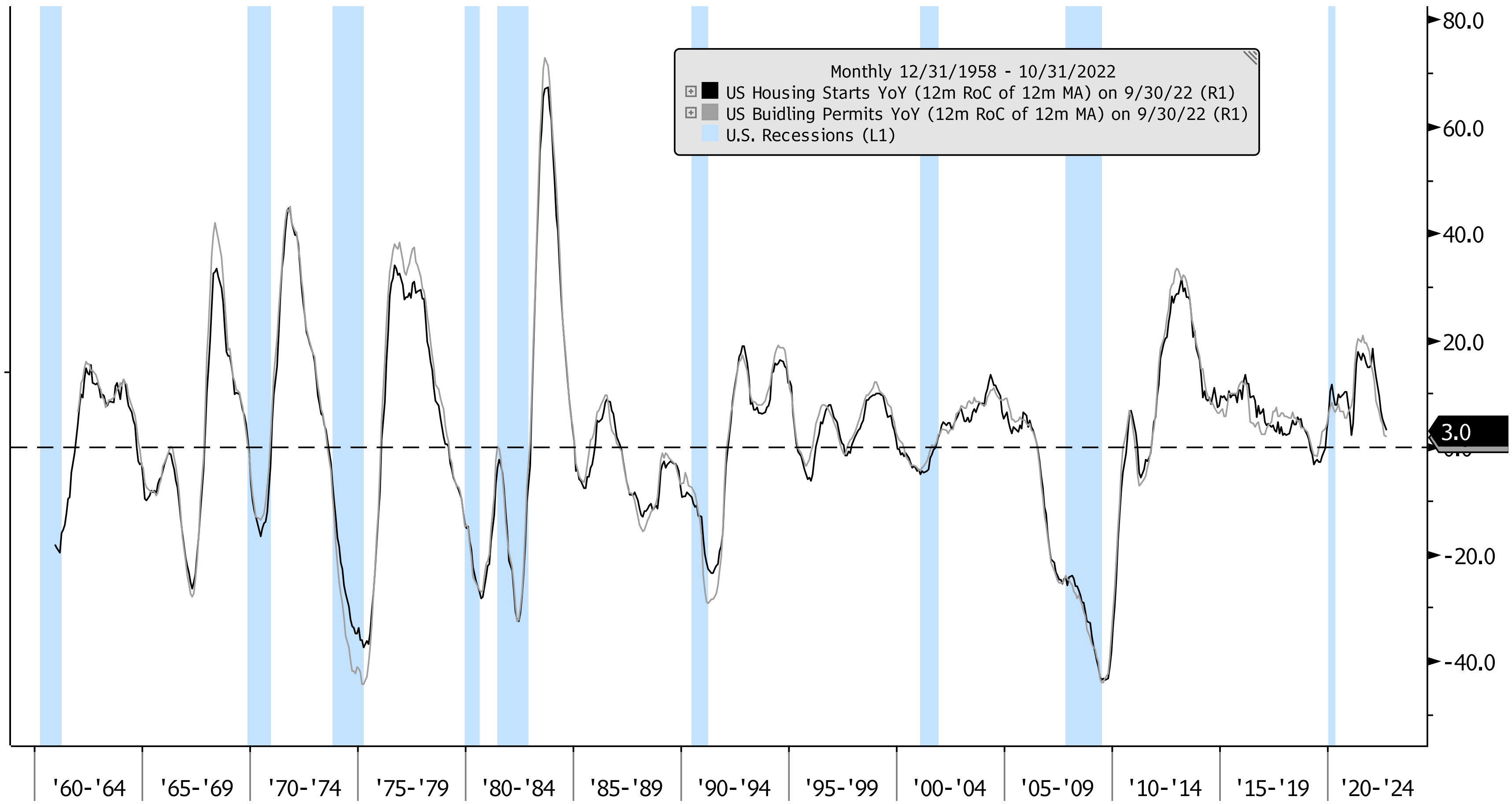


Source: © Merk Investments, Bloomberg

Analysis: Monthly building permits (12m MA) have started to decline sharply now. Framework: I would get incrementally positive on the economic outlook if building permits cross back above the 12-month moving average.

US Housing Starts and Building Permits

US Housing Starts and Building Permits, 12-month Rate of Change of 12-month Moving Average



Source: © Merk Investments, Bloomberg

Analysis: The rate of change in building permits and housing starts shows a slowdown but not yet a contraction. Building permits and housing starts tend to be long leading indicators for the economy.

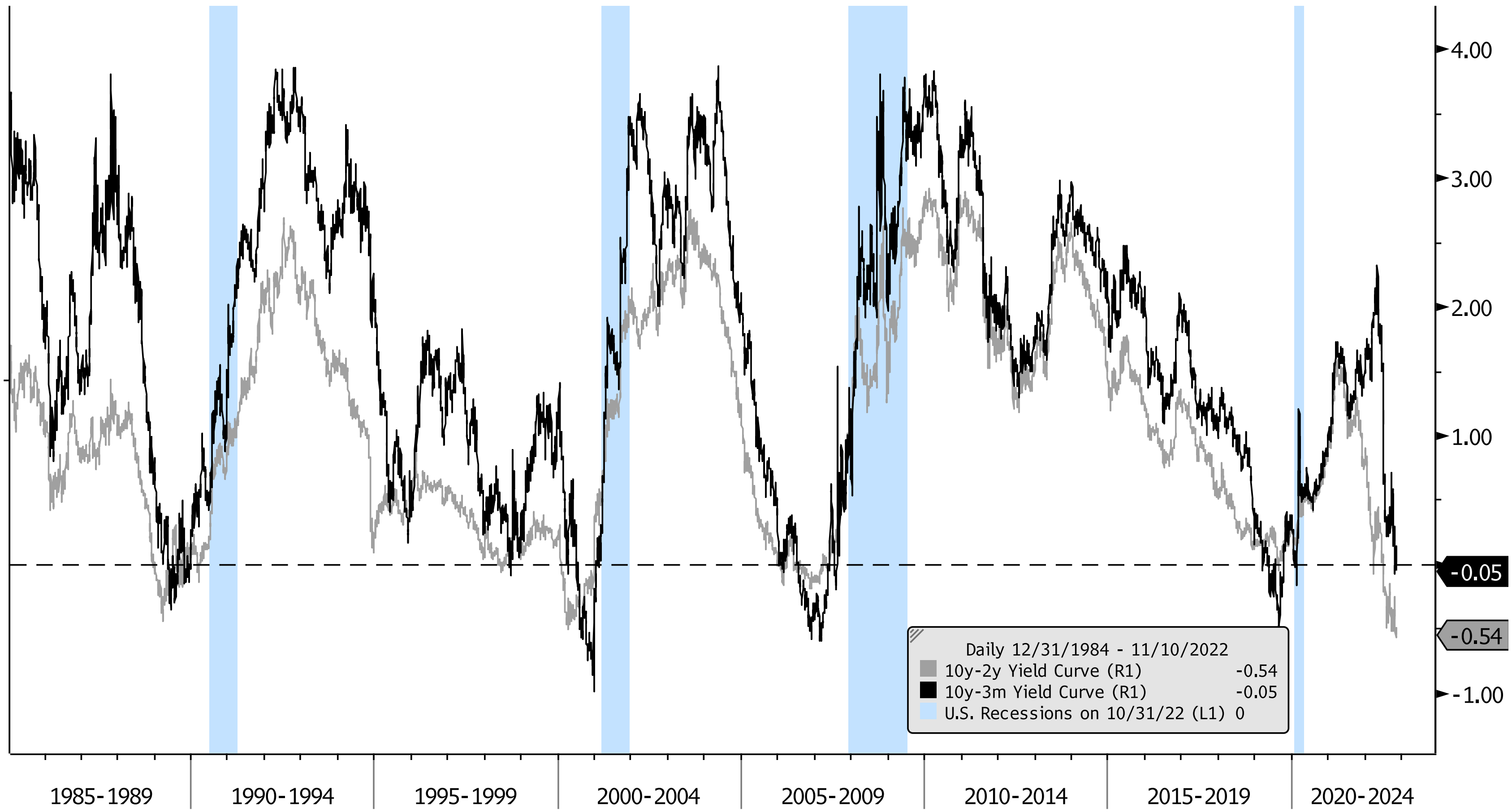
Checklist

Chart	Time Horizon	Per Framework Outlook on Business Cycle
LEIs	Short/Medium Term	Negative
Yield Curve (3m10y and 3y10y)	Medium Term	Negative
U.S. PMIs	Short/Medium Term	Neutral/Positive
Global PMIs	Short/Medium Term	Negative
Job Gains	Medium Term	Positive
U-3 v 12m MA	Medium Term	Neutral
SF Fed U-3 Model	Medium Term	Neutral/Negative
Labor Market Slack	Medium/Longer Term	Negative
Output Gap	Medium/Longer Term	Negative
GDP Nowcast	Short Term	Positive
Household Credit	Medium Term	Neutral
U.S. Consumer Confidence	Short/Medium Term	Neutral/Negative
Lending Standards	Medium Term	Negative
High Yield Spread	Short/Medium Term	Negative
U.S. Building Permits	Medium/Longer Term	Negative
	Time Horizon	**Overall Outlook on Business Cycle**
	Short Term (<6 months)	Negative with high uncertainty
	Medium Term (6m - 2 years)	Negative with high uncertainty

Analysis: 3 are positive or leaning positive, 10 are negative or leaning negative, and 2 are neutral.

Yield Curve

10y-2y Yield Curve (grey) and 10y-3m Yield Curve (black)

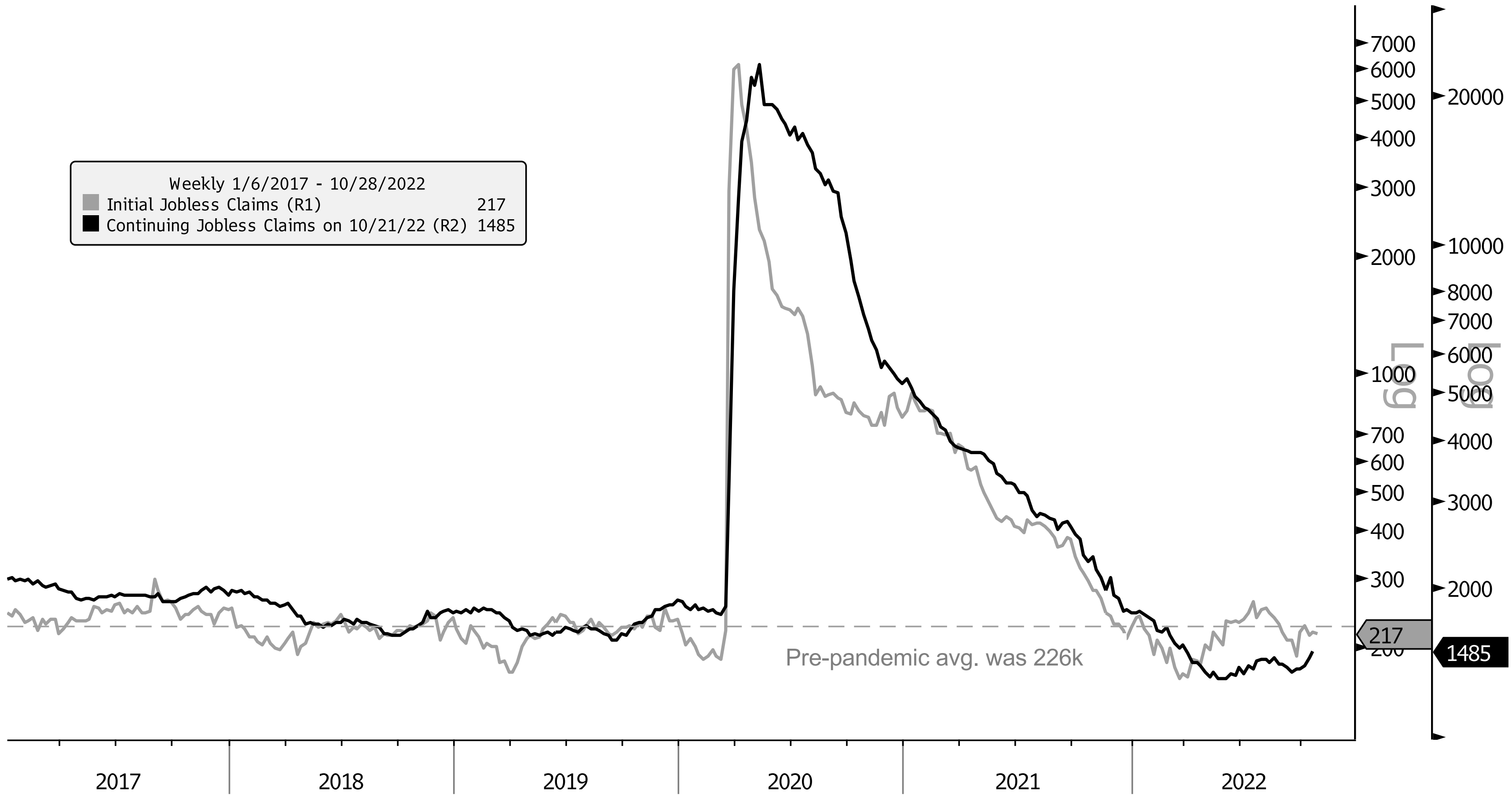


Source: © Merk Investments, Bloomberg

Analysis: Both the 10y-2y and 10y-3m are inverted. A recession typically starts 6-18 months after initial inversion of the 10y-3m, the short end of that range is April 2023.

Jobless Claims

Initial Jobless Claims (grey) and Continuing Jobless Claims (black) (in thousands)



Source: © Merk Investments, Bloomberg

Analysis: Initial jobless claims have been trending back down since mid-July.

30-Year Mortgage Rate

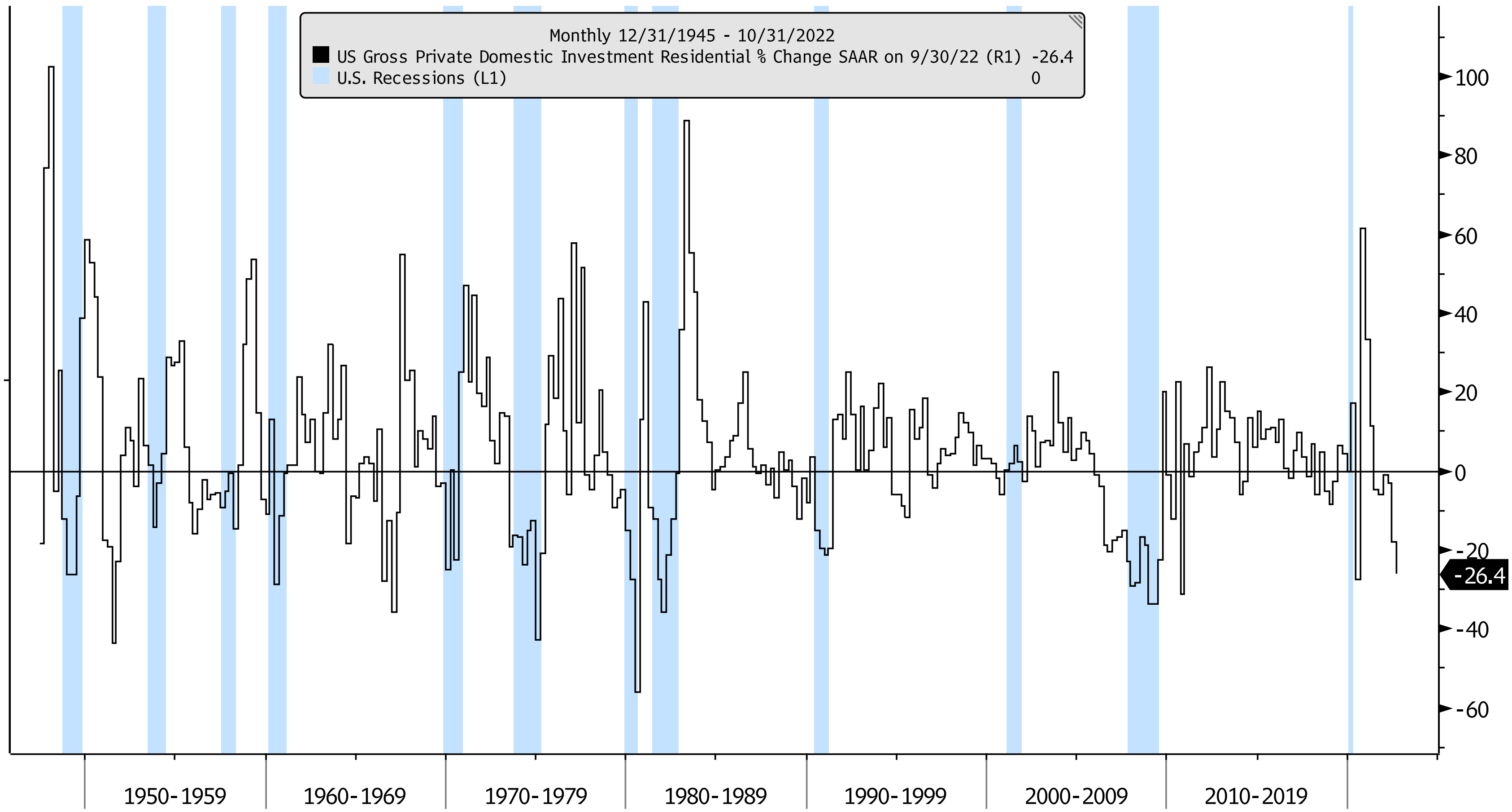
Mortgage Bankers Assoc. 30yr Fixed Rate Mortgage Rate National Avg.

Source: © Merk Investments, Bloomberg

Analysis: The national average 30-year mortgage rate is above 7%, up from a low of 2.9% in December 2020. The mortgage rate has more than doubled in the past year.

The Housing Cycle is the Business Cycle

Change in Residential Investment



Source: © Merk Investments, Bloomberg

Analysis: Domestic residential investment growth was negative again in Q3 2022. Residential investment is typically a long leading indicator for the overall economy. See paper below.

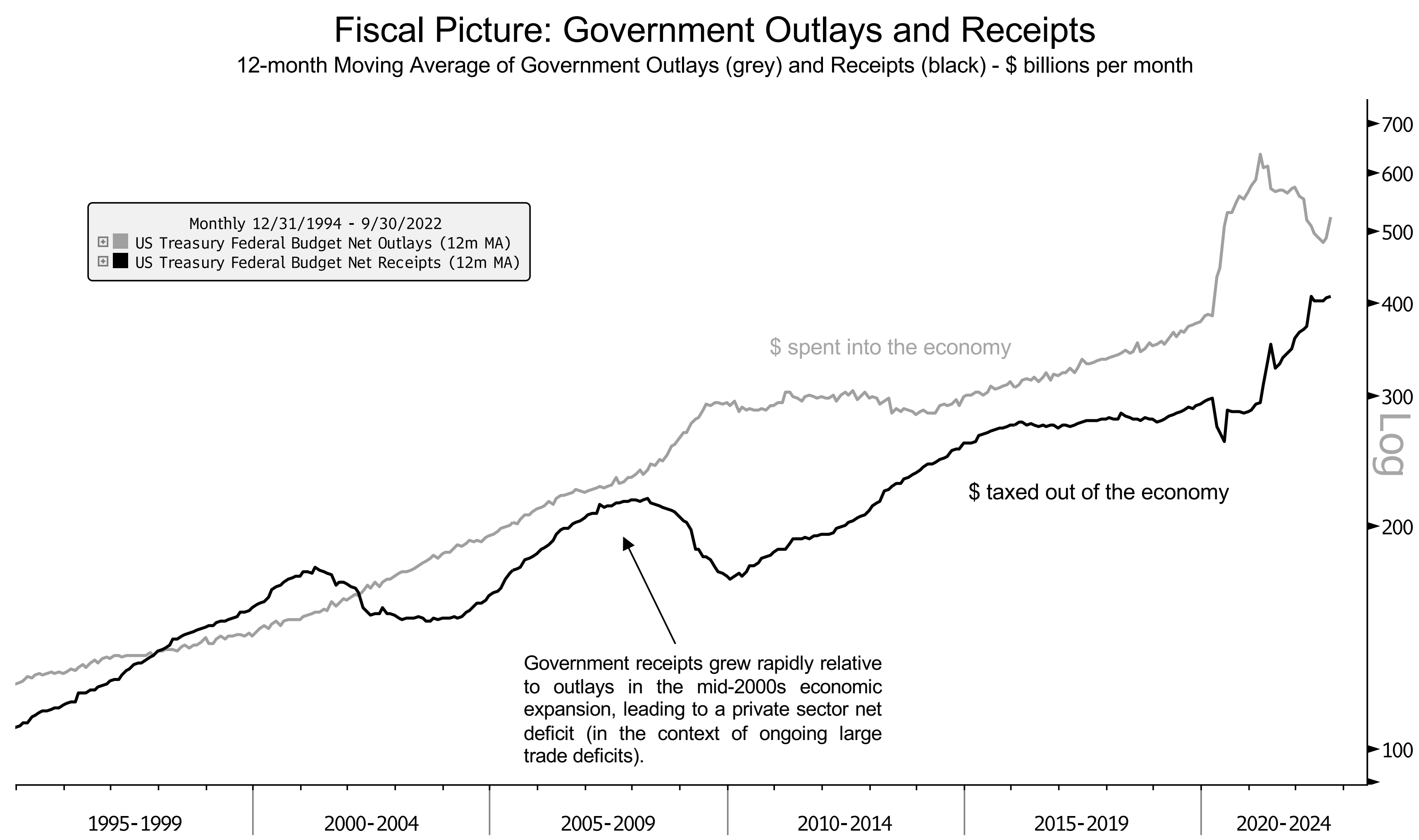
The Housing Cycle is the Business Cycle PDF: https://www.nber.org/system/files/working_papers/w13428/w13428.pdf

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 into positive territory out the curve now, with the short end close to positive 2%.



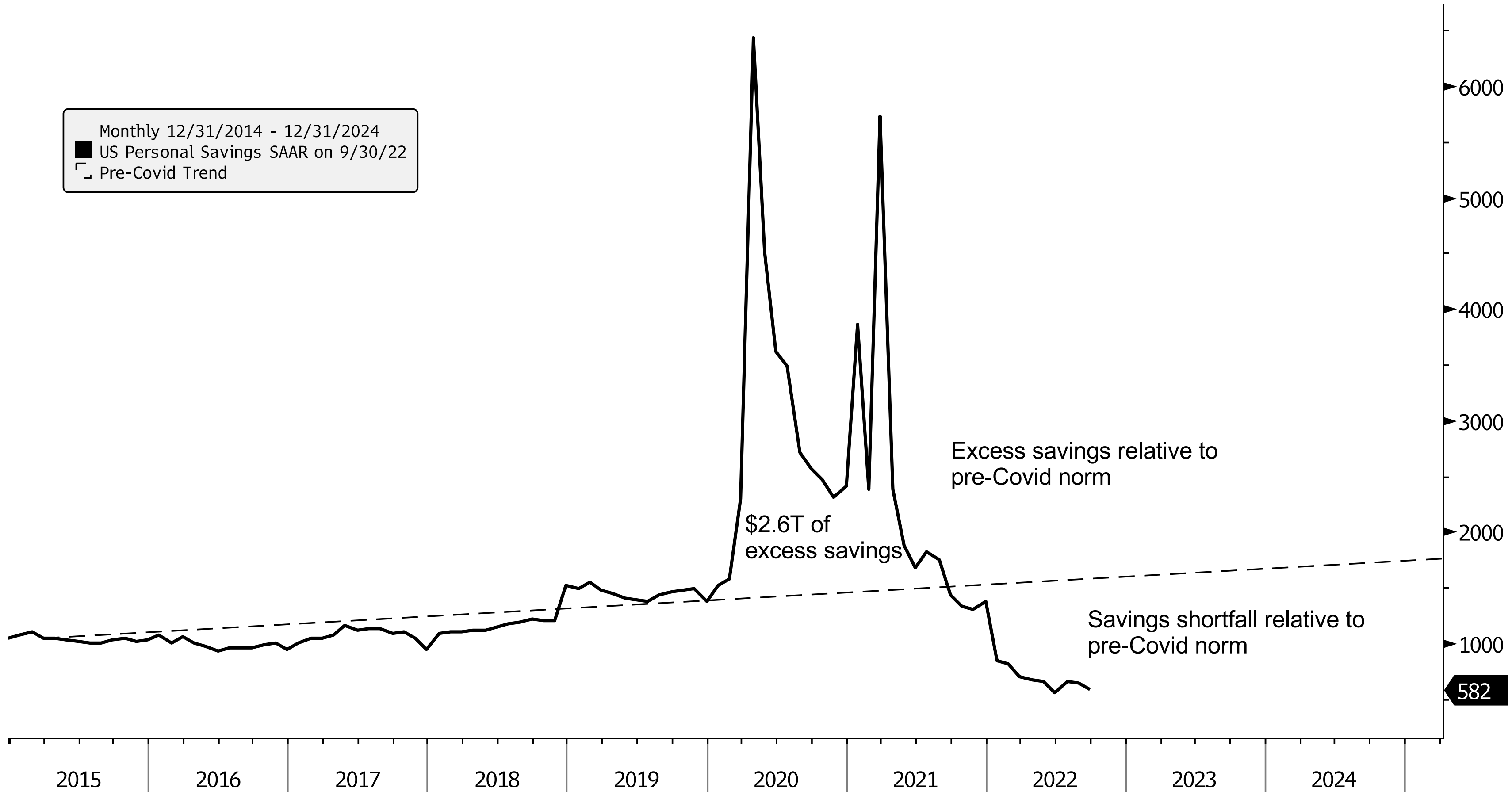
Source: © Merk Investments, Bloomberg

Analysis: Recently, government outlays increased again, and fiscal policy has eased from it's rapid tightening path.

Fiscal tightening in the mid-2000s coincided with private sector net savings going negative (consistent with macro accounting identities). Government outlays add to non-government savings. Government receipts withdraw from non-government savings (i.e., receipts take away from private sector spending power).

Pace of Personal Savings

US Personal Savings ($ Billions per month SAAR)

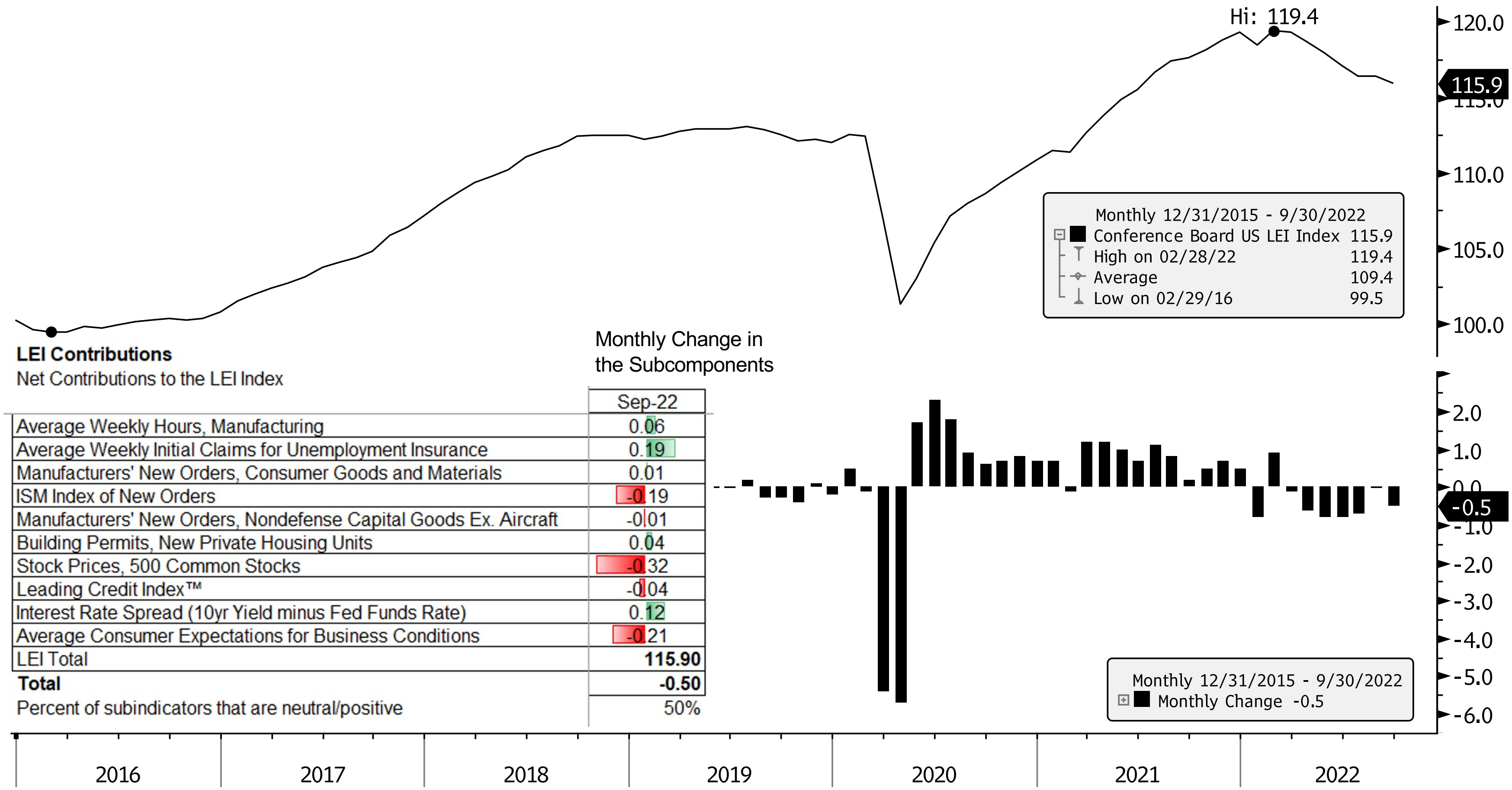


Source: © Merk Investments, Bloomberg

Analysis: The monthly pace of savings is now well below the pre-Covid trend. About 25% of accumulated excess savings have been drawn down on, but there are still accumulated excess savings remaining. Another factor to consider though is that inflation has reduced the purchasing power of those savings by about 15%.

Leading Economic Indicators (LEI) Index

Conference Board LEI Index and Monthly Change



LEI Contributions

Net Contributions to the LEI Index

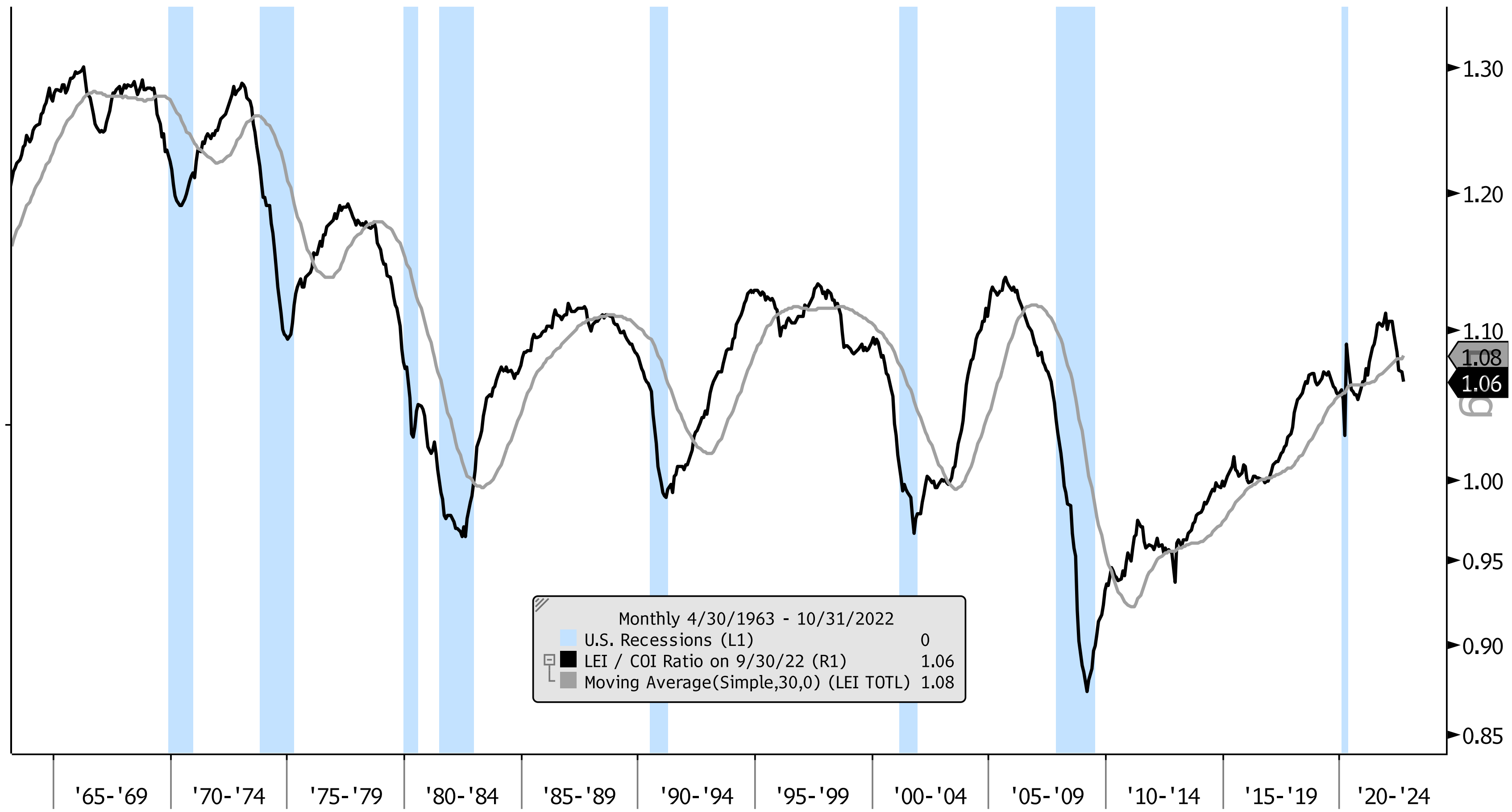
	Sep-22
Average Weekly Hours, Manufacturing	0.06
Average Weekly Initial Claims for Unemployment Insurance	0.19
Manufacturers' New Orders, Consumer Goods and Materials	0.01
ISM Index of New Orders	-0.19
Manufacturers' New Orders, Nondefense Capital Goods Ex. Aircraft	-0.01
Building Permits, New Private Housing Units	0.04
Stock Prices, 500 Common Stocks	-0.32
Leading Credit Index™	-0.04
Interest Rate Spread (10yr Yield minus Fed Funds Rate)	0.12
Average Consumer Expectations for Business Conditions	-0.21
LEI Total	**115.90**
Total	**-0.50**
Percent of subindicators that are neutral/positive	50%

Source: © Merk Investments, Bloomberg

Analysis: The Conference Board's Leading Economic Indicators (LEI) Index fell again last month.

LEI/COI Ratio

Ratio of Leading Economic Indicators (LEI) Index / Coincident Economic Indicators (COI) Index



Source: © Merk Investments, Bloomberg

Analysis: The leading index provides an idea of where the coincident index is headed. The leading economic indicators (LEI) index divided by the coincident economic indicators (COI) index ratio provides a guide to the general direction of the economy. It has turned down and has now crossed below the 12m moving average. A decline below the 30-month moving average (grey) is a warning sign. This is merely one more chart/framework to cross reference in the context of all other charts and data. No one chart or indicator can be looked at in isolation.

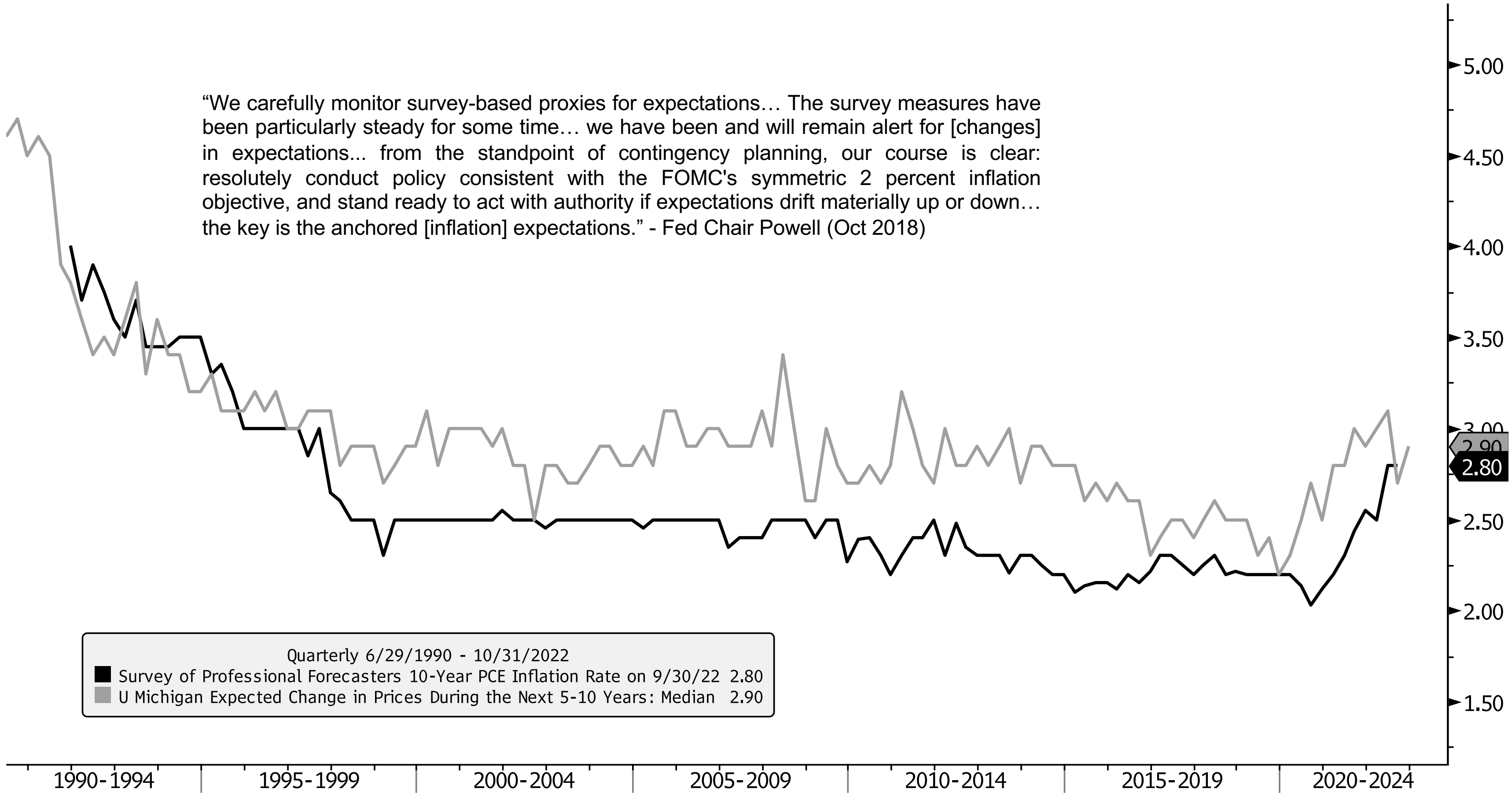
US 10-Year Yield Fair Value Model

Average of CBO US Trend Nominal GDP Growth Potential + German 10yr Yield (grey) and US 10yr Yield (black)

Analysis: Many people are familiar with the idea that US nominal GDP growth is a proxy for where the US 10yr yield "should" be. The above framework extends that concept to forward looking trend nominal US GDP growth expectations and incorporates the effect of near-substitutes to US Treasuries (i.e., German government bonds). The US can have volatile year over year nominal GDP growth, but 10yr Treasuries have an extended duration and so more important than any one year of growth is the general level that can be expected over the forward-looking ten-year period. The above framework also includes the effect of German yields by taking the average of trend nominal US GDP growth (about 5%) and the current German 10yr yield (about 2.25%). In a world of free capital flow between the US and Europe, German yields influence US yields. This framework does a reasonably good job of providing an estimate of fair value for the U.S. 10yr yield as well as a framework for thinking about where the 10yr yield "should" be.

Survey-based Inflation Expectations

University of Michigan Consumer Inflation Expectations and Survey of Professional Forecasters Expectations

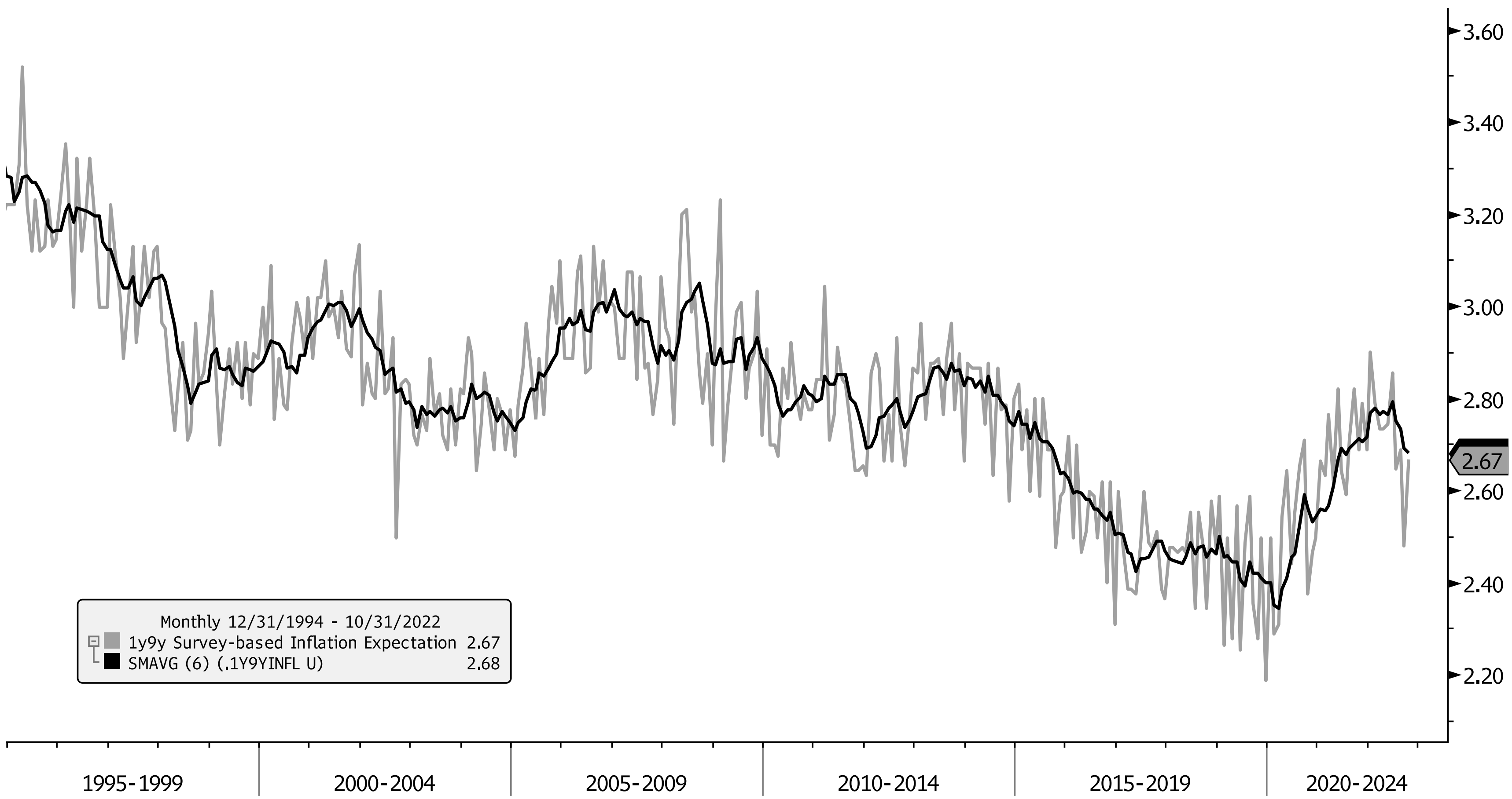


Source: © Merk Investments, Bloomberg

Analysis: The Survey of Professional Forecasters 5-10 Year inflation expectation has moved notably higher in recent months, and is at a multi-decade high (at 2.8%). However, the University of Michigan inflation expectations survey reading recently fell to 2.7%. Powell is particularly focused on the role of anchored inflation expectations in terms of meeting the Fed's price stability mandate over the medium term. Based on past speeches, it seems Powell watches the above survey-based indicators to monitor for material changes.

Survey-based Forward Inflation Expectations

1y9y University of Michigan Consumer Inflation Expectations

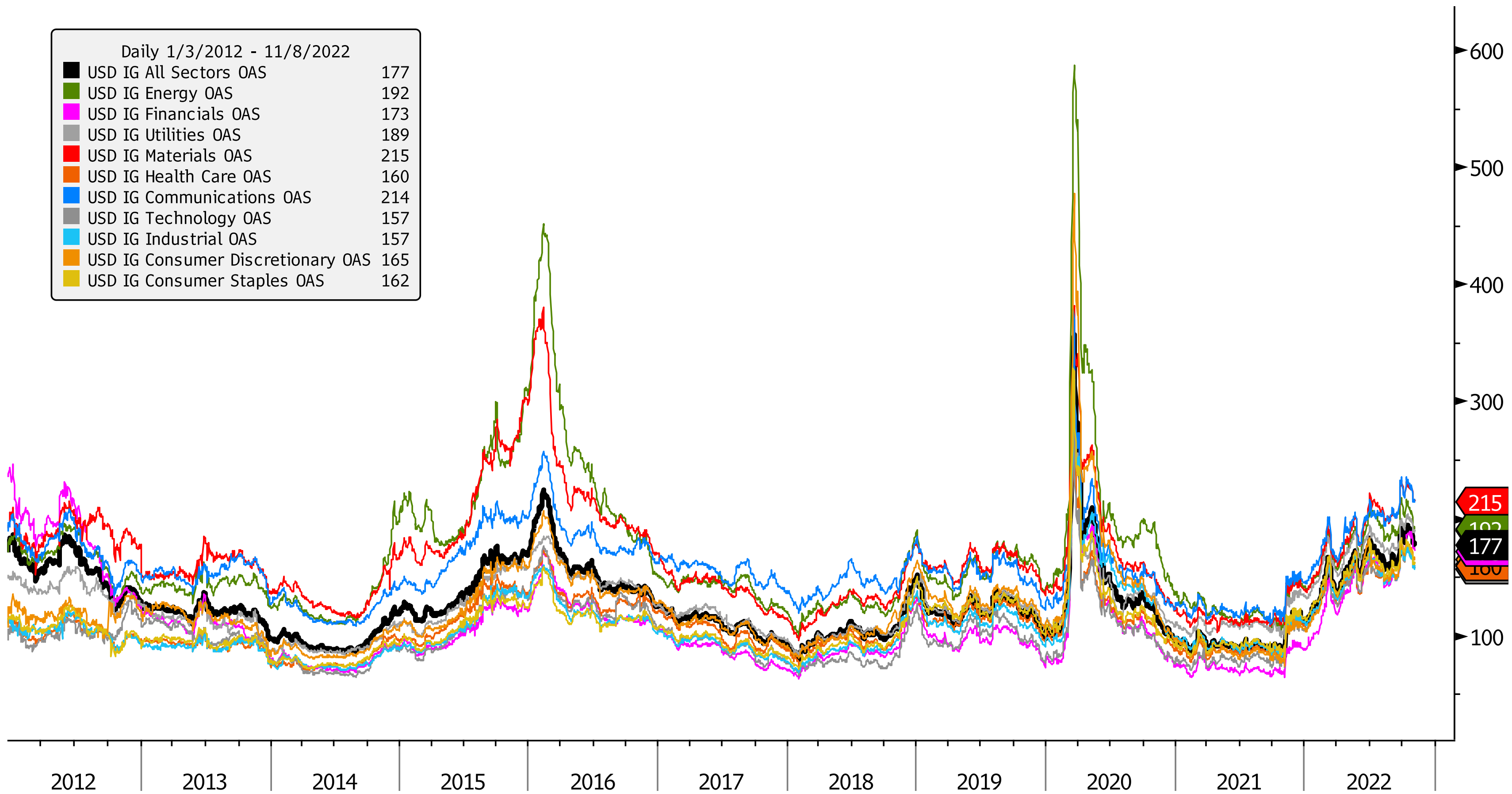


Source: © Merk Investments, Bloomberg

Analysis: The 1y9y (the average inflation rate over the 9 years starting in a year from now) continues to trend lower, suggesting inflation expectations are well-anchored.

U.S. Corporate Investment Grade Credit Spreads

U.S. Corporate Investment Grade Interest Rate Spread over U.S. Treasury 10yr Yield



Source: © Merk Investments, Bloomberg

Analysis: US investment grade credit spreads have been relatively stable in recent months.

10-Year Treasury Yield

Yield on the 10-year US Treasury Bond with regression line +/- two standard deviations since 3/31/1987

Source: © Merk Investments, Bloomberg

Analysis: The US 10yr yield has broken well above the upper-end of its long-term downtrend channel.

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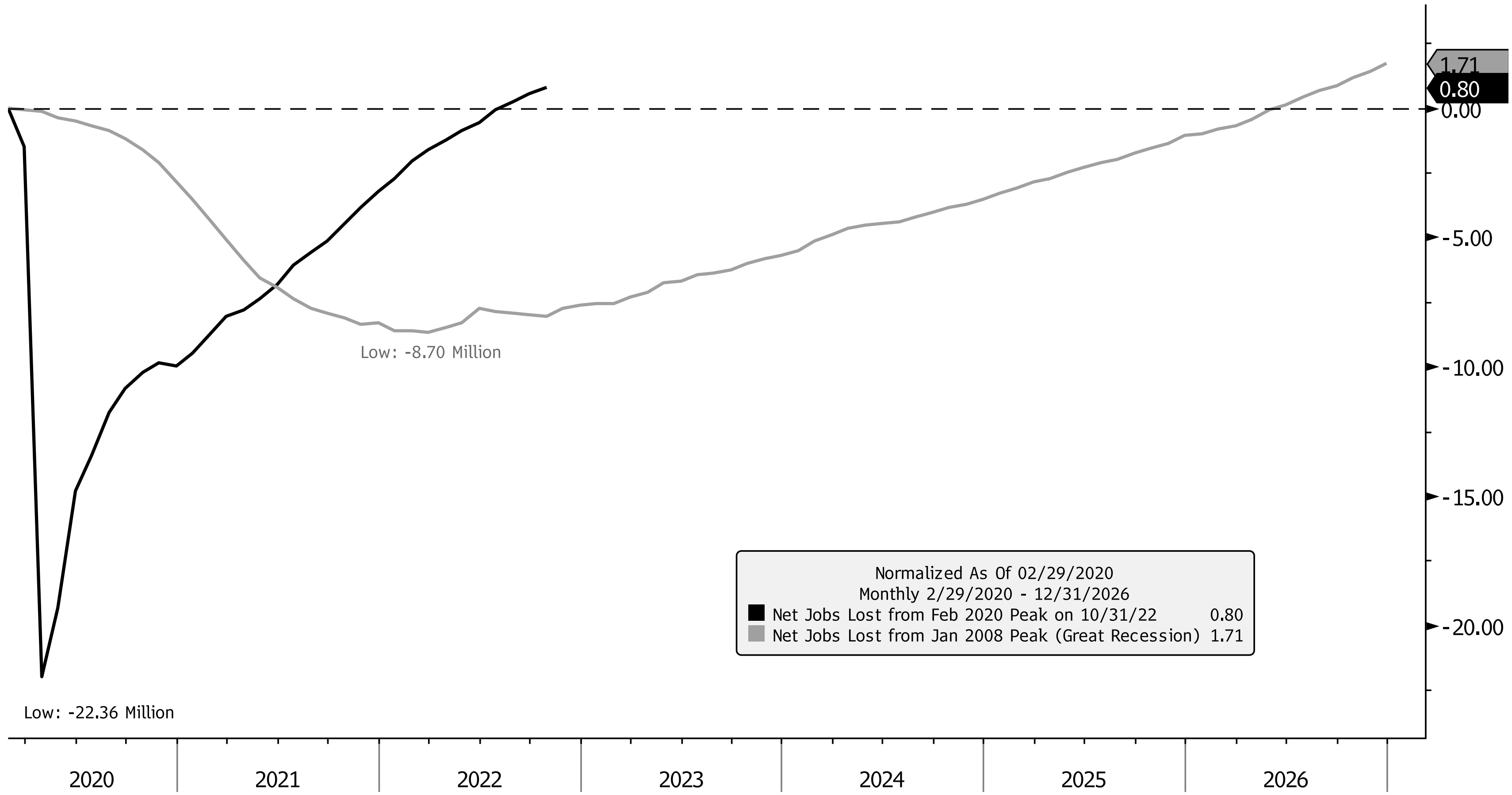
Jobs Recovery (now vs. the Great Recession)

Millions of jobs relative to the pre-recession peak: Covid Recession (black) Great Recession (grey)

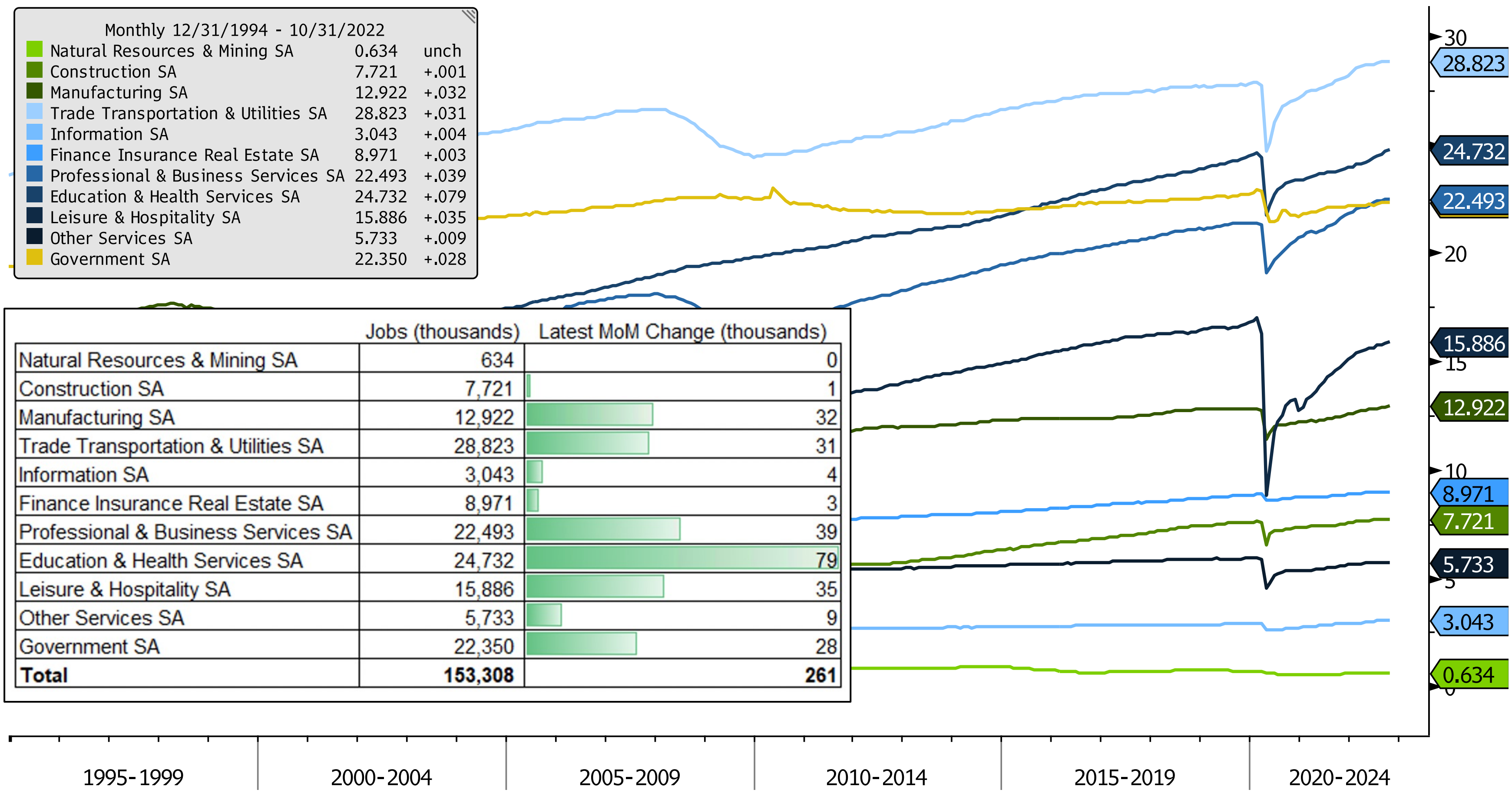


Source: © Merk Investments, Bloomberg

Analysis: Cumulatively, the recovery/expansion has now brought back all the jobs lost to the pandemic/lockdowns.

US Jobs by Type

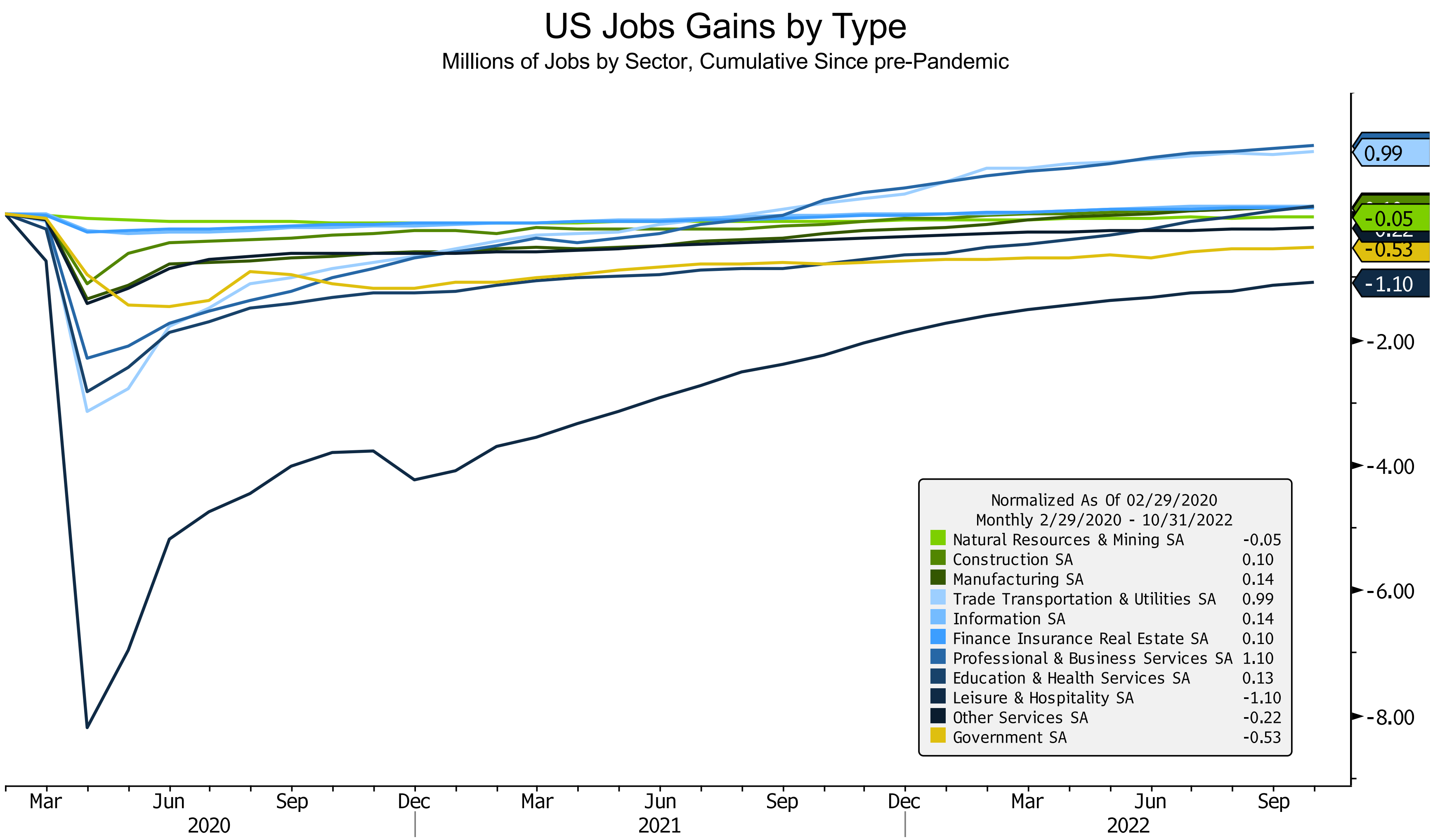
Millions of Jobs by Sector



	Jobs (thousands)	Latest MoM Change (thousands)
Natural Resources & Mining SA	634	0
Construction SA	7,721	1
Manufacturing SA	12,922	32
Trade Transportation & Utilities SA	28,823	31
Information SA	3,043	4
Finance Insurance Real Estate SA	8,971	3
Professional & Business Services SA	22,493	39
Education & Health Services SA	24,732	79
Leisure & Hospitality SA	15,886	35
Other Services SA	5,733	9
Government SA	22,350	28
Total	**153,308**	**261**

Source: © Merk Investments, Bloomberg

Analysis: the US economy added a total of 261k jobs in October, led by education & health services.

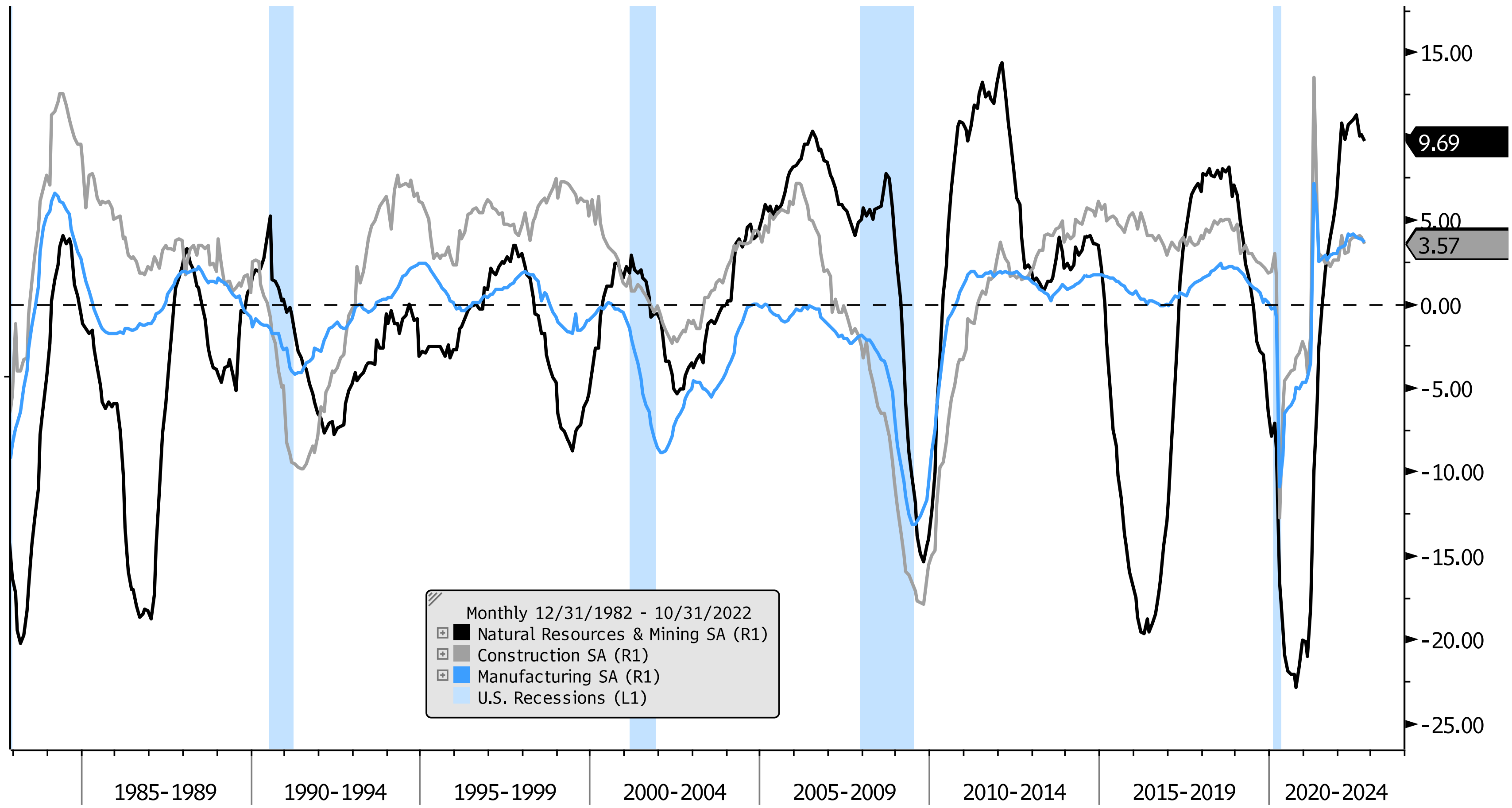


Source: © Merk Investments, Bloomberg

Analysis: Leisure and hospitality remains 1.1 million workers short of pre-pandemic levels.

Cyclical Jobs Year-over-Year

Total Jobs Growth Year over Year in Mining, Manufacturing, and Construction

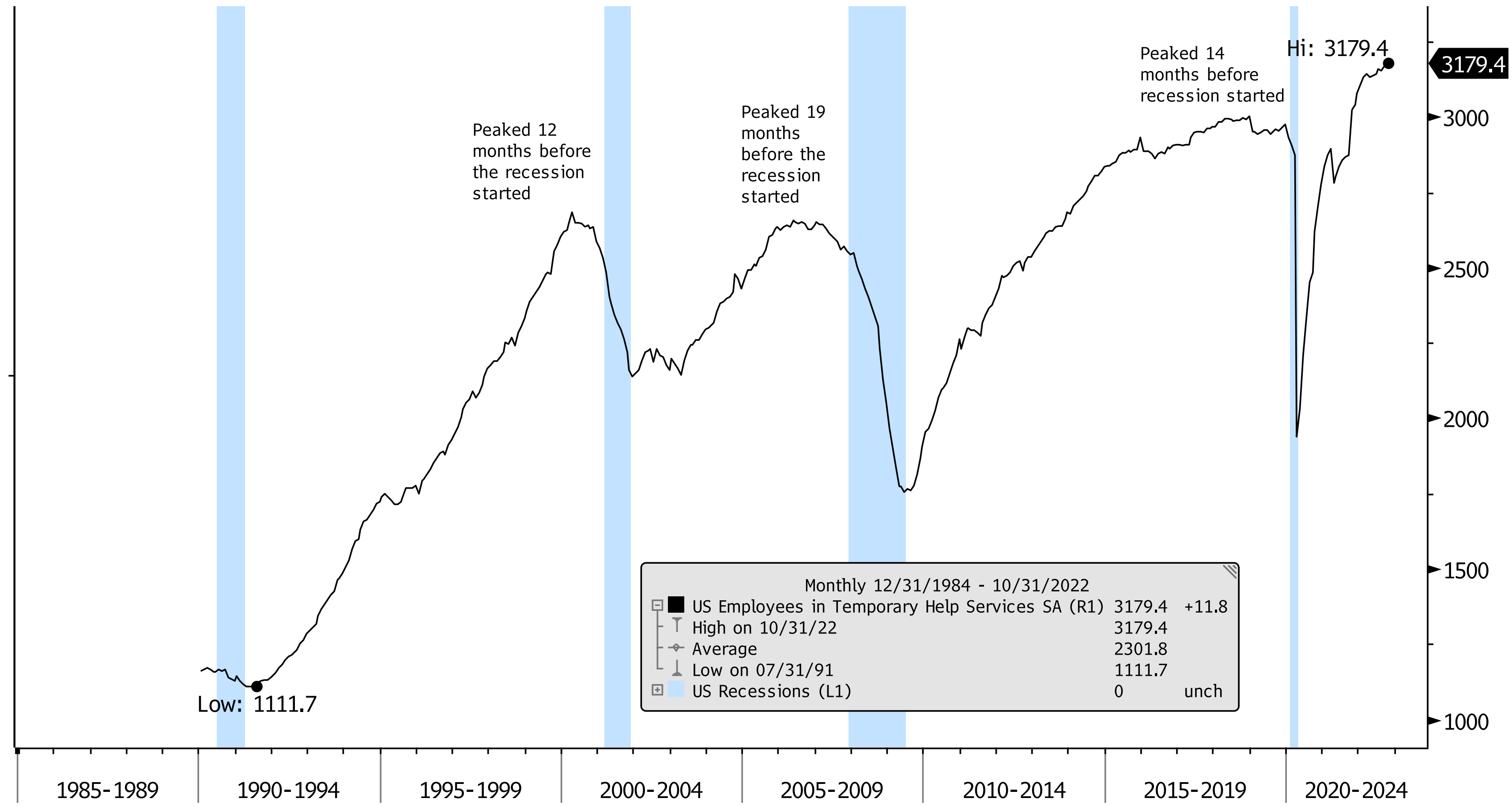


Source: © Merk Investments, Bloomberg

Analysis: You typically don't get a recession until at least one cyclical jobs category goes negative year over year. Currently, none of them are—across mining, manufacturing, and construction.

Temporary Jobs

Total Temporary Jobs and US Recession

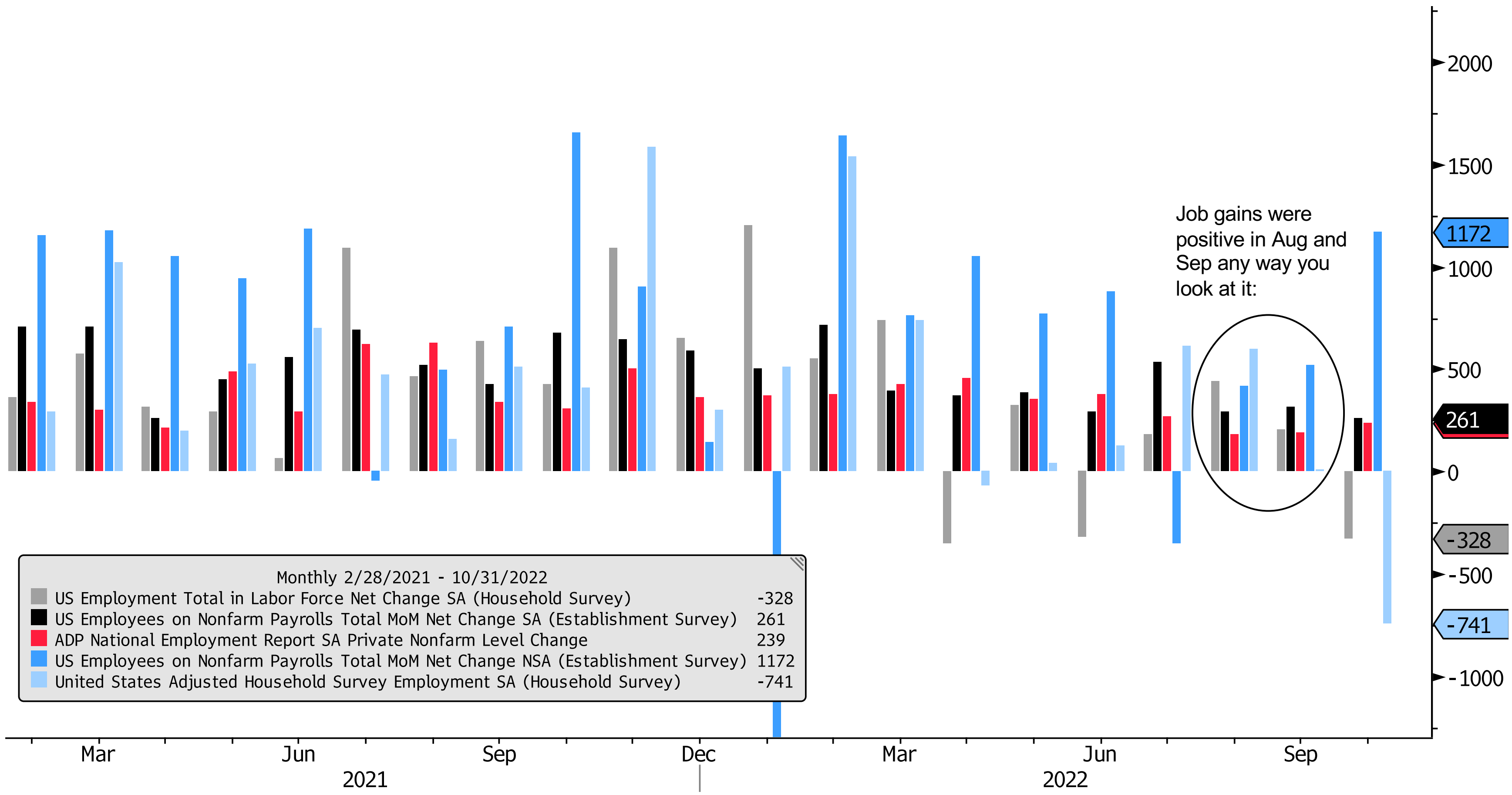


Source: © Merk Investments, Bloomberg

Analysis: You typically don't get a recession until temporary jobs start to decline.

US Job Gains

Thousands of Net Jobs Gained per Month: Establishment vs. Household Survey vs. ADP

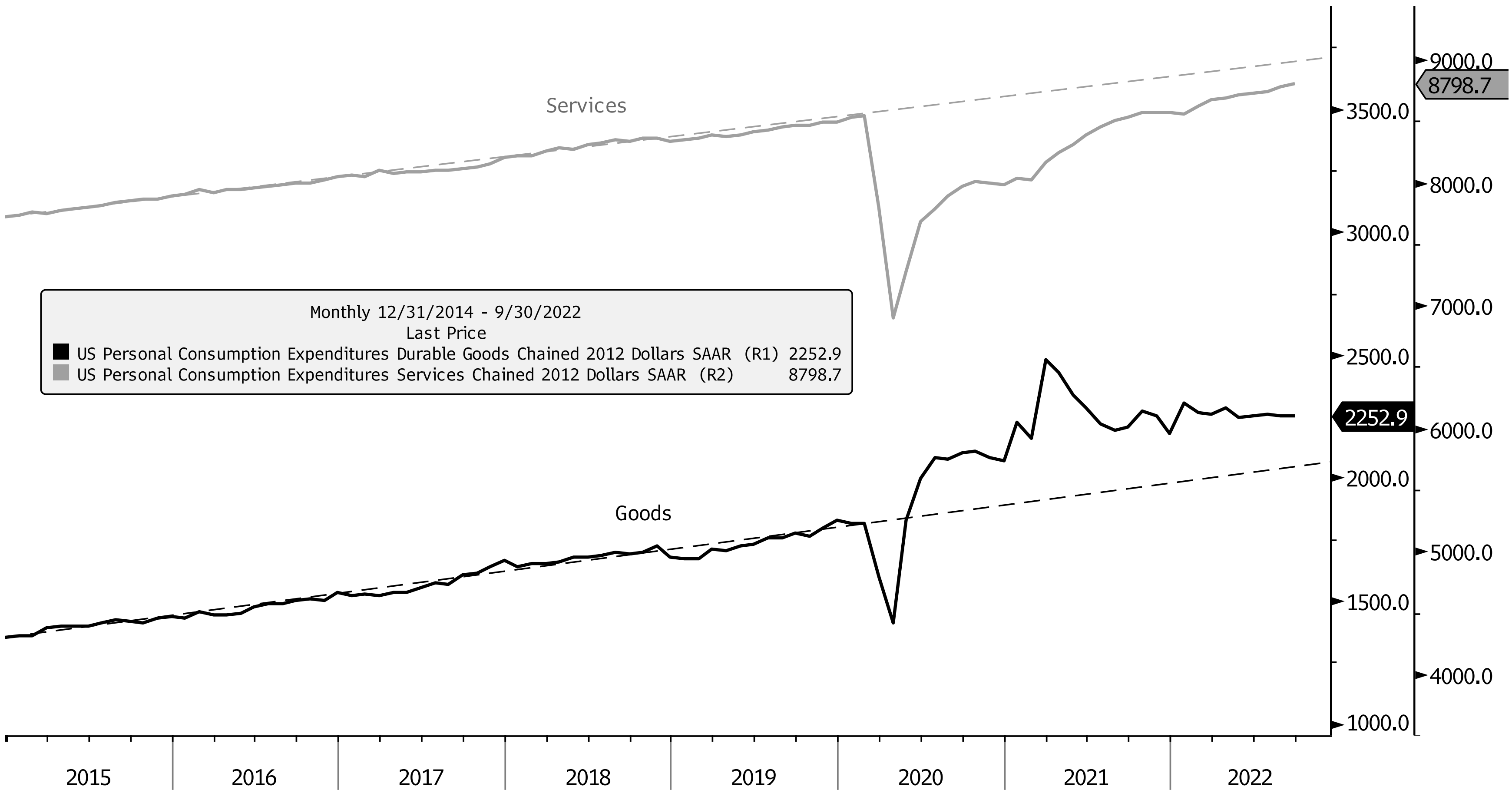


Source: © Merk Investments, Bloomberg

Analysis: The solid headline non-farm payrolls number was not confirmed by a positive household survey reading.

Consumption Expenditures on Durable Goods vs. Services

Total Monthly U.S. Consumer Spending on Durable Goods (black) and on Services (grey)



Source: © Merk Investments, Bloomberg

Analysis: Durable goods expenditures and services expenditures have continued to gradually normalize towards pre-covid trend (goods from above trend and services from below trend). The nature of the pandemic/lockdowns and the fiscal relief created an above-trend surge in demand for consumer durable goods (e.g., home improvement related items etc.) and an understandable slump in services (travel and leisure, bars and restaurants etc.). This chart allows for continued monitoring of a potential return to pre-pandemic normalcy (back to trend).

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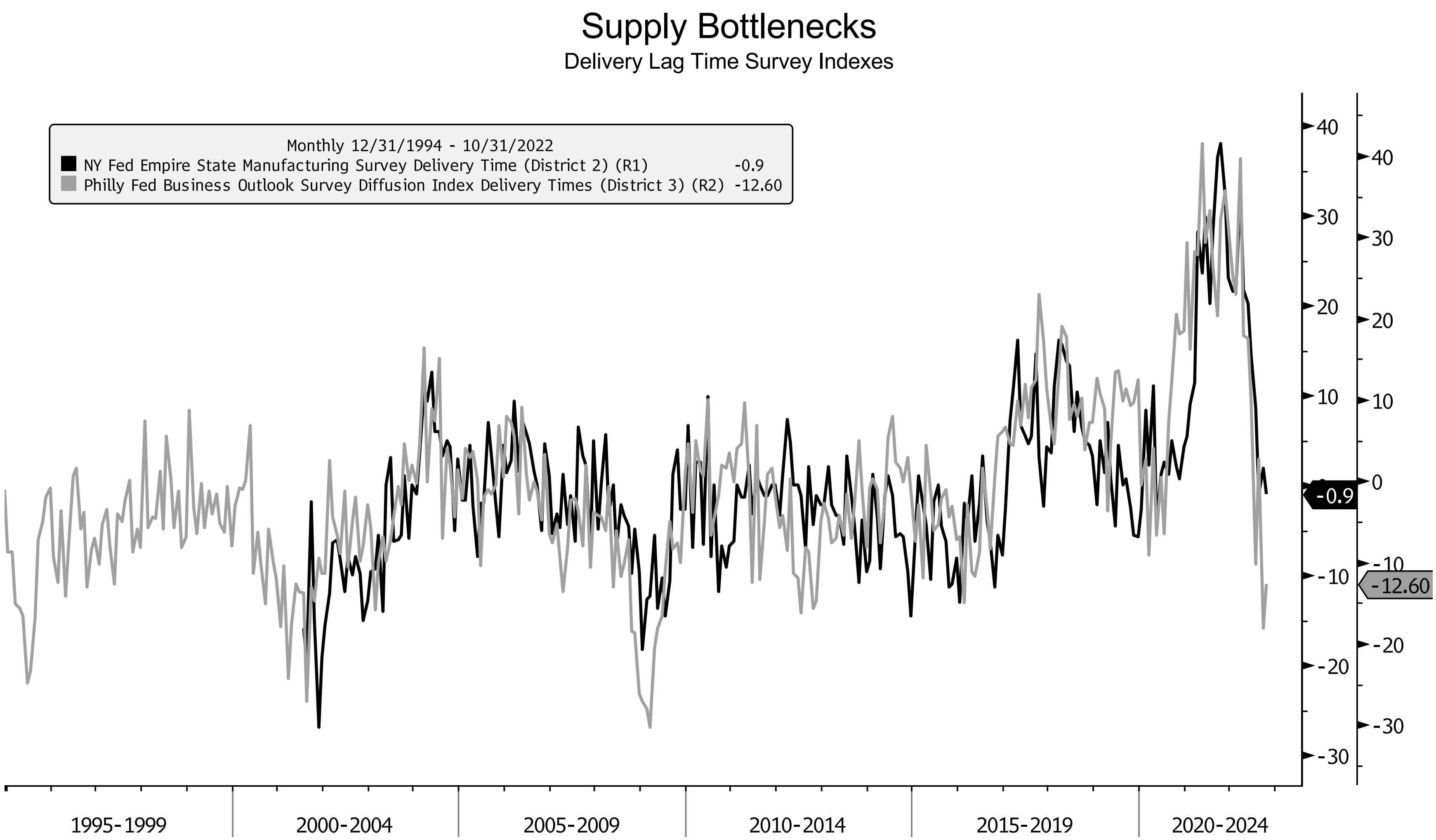
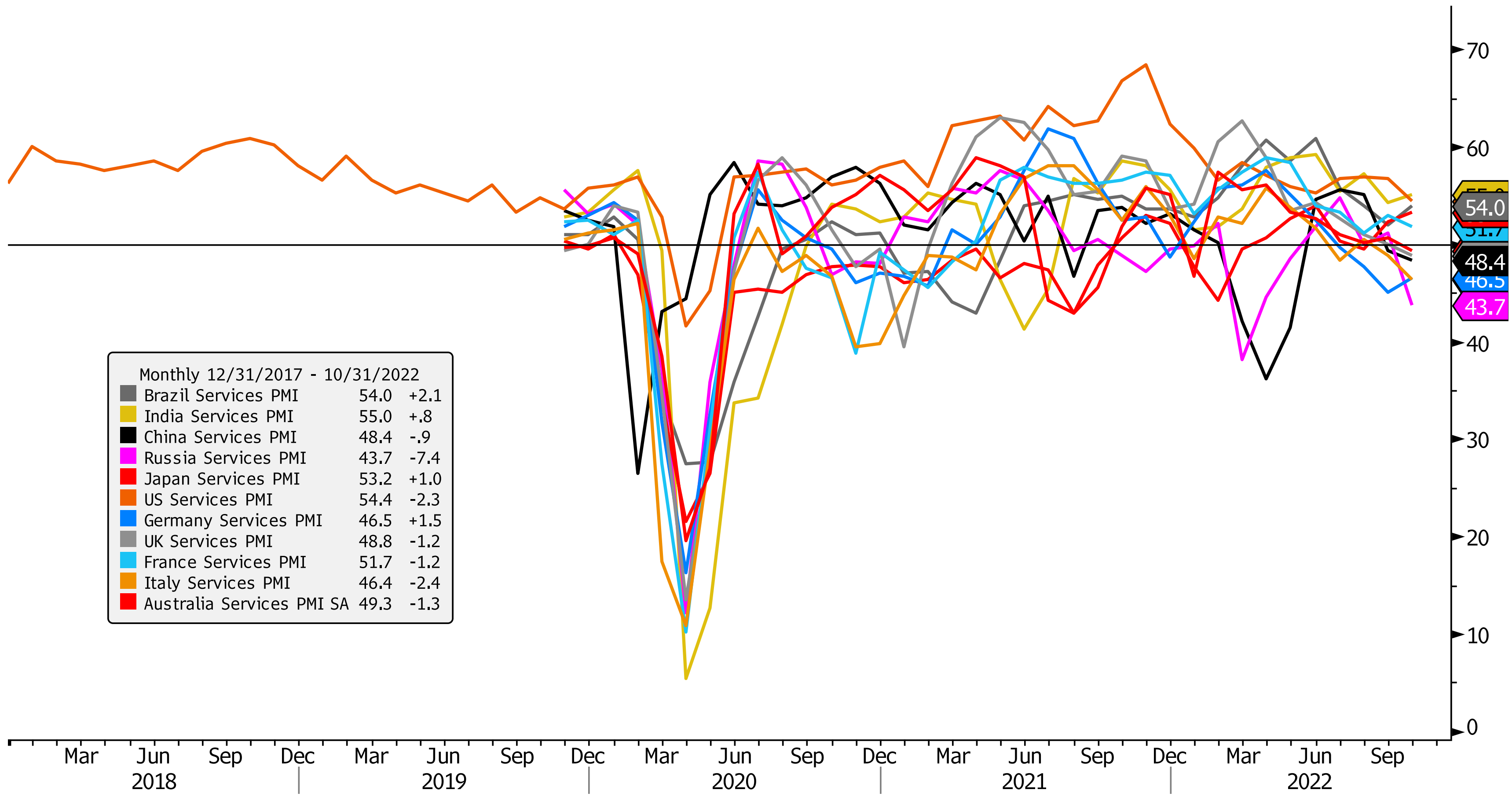


Source: © Merk Investments, Bloomberg

Analysis: Delivery times continue to show improvement.

Global Services PMIs

Largest twelve global economies' Services PMIs (Purchasing Managers Index)

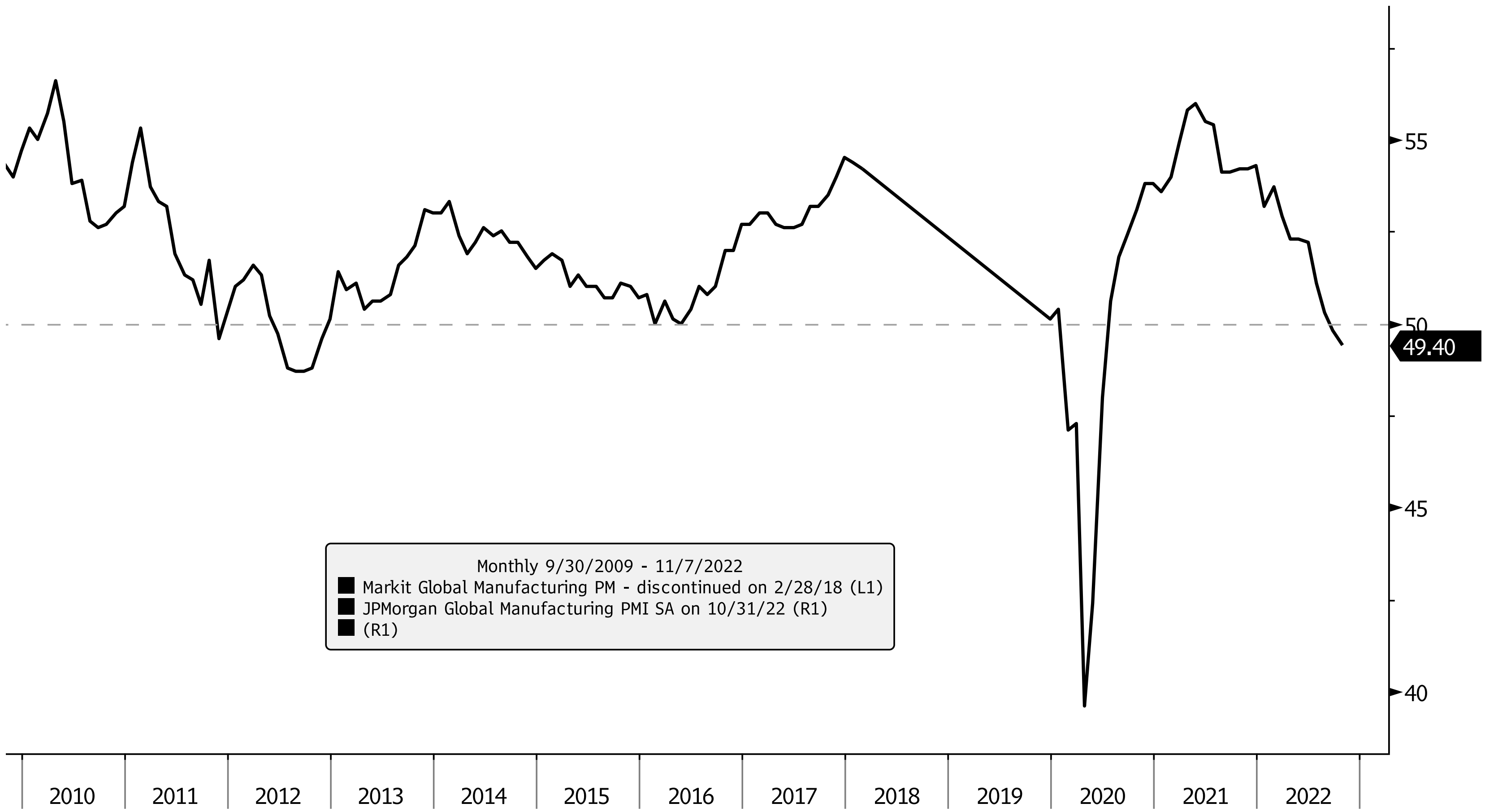


Source: © Merk Investments, Bloomberg

Analysis: Services PMIs were mostly lower over the past month—more than half are below 50.

Global Manufacturing PMI

JP Morgan Global PMI Index (Purchasing Managers Index)

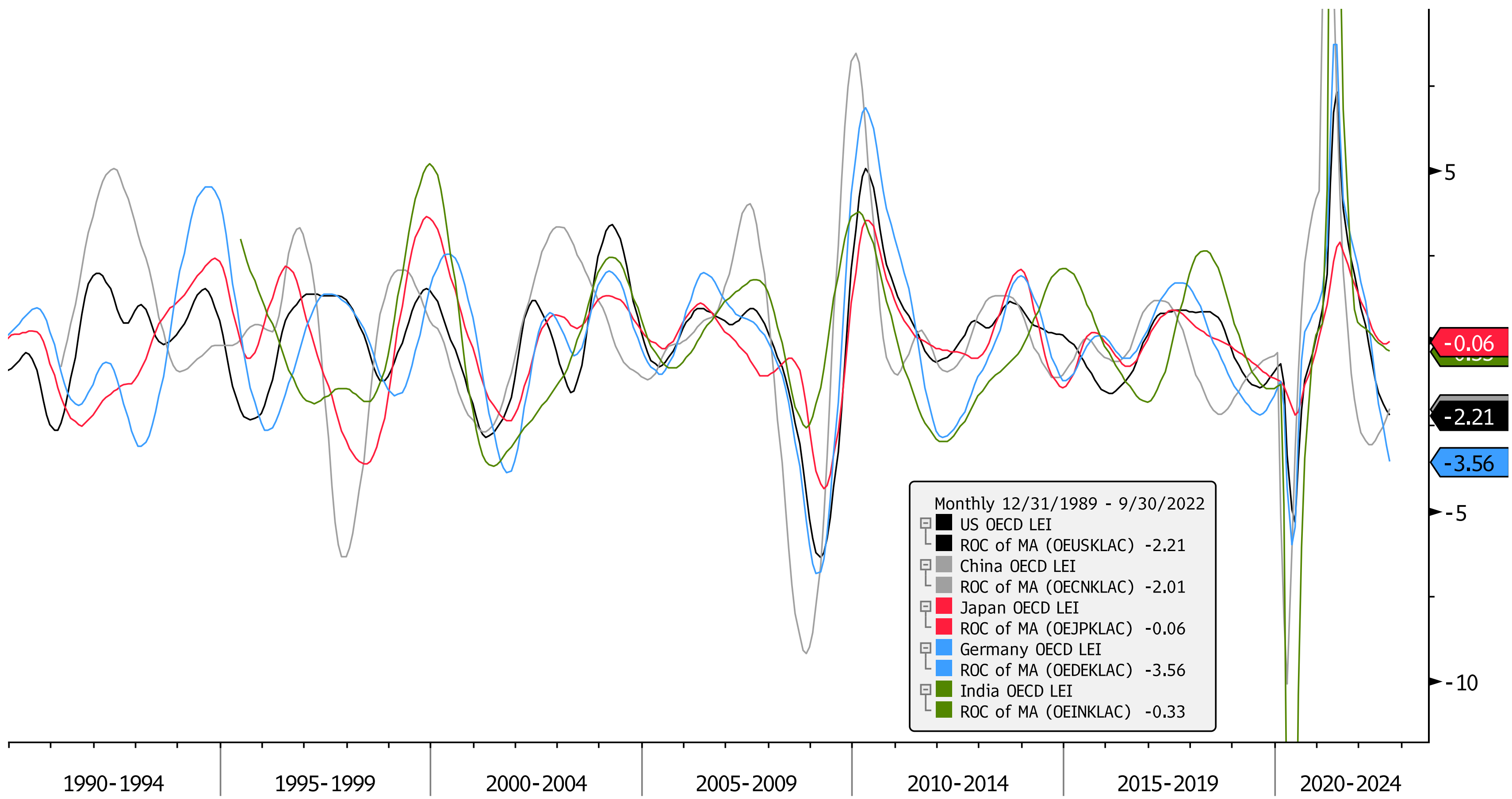


Source: © Merk Investments, Bloomberg

Analysis: The global manufacturing PMI has fallen below 50 (the dividing line between expansion and contraction) for the first time since February 2020.

OECD Leading Indicators

12-month Rate of Change of the 3-month Moving Average for the U.S., China, Japan, and Germany

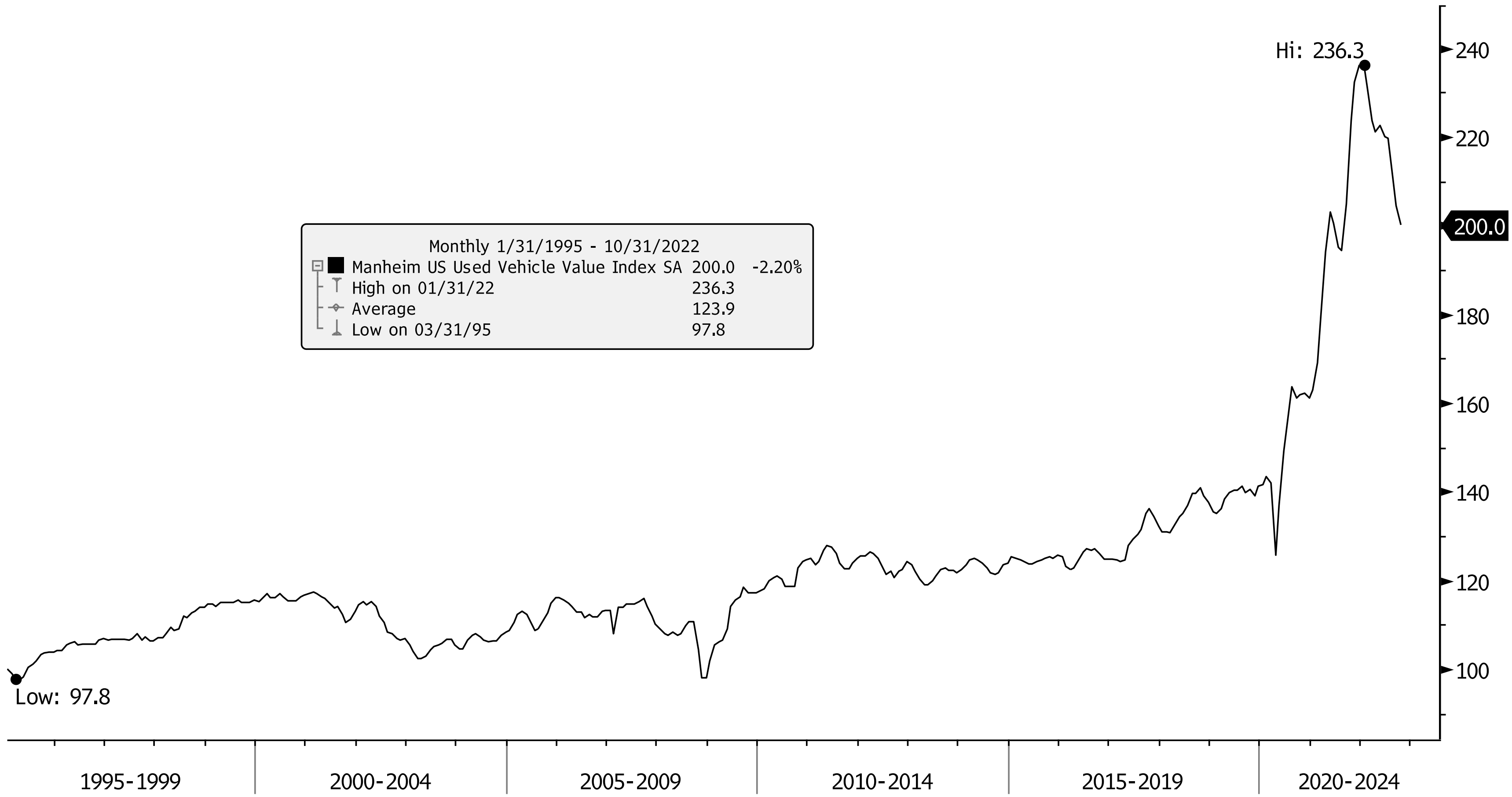


Source: © Merk Investments, Bloomberg

Analysis: The rate of change picture for OECD leading indexes shows a potential early upturn in China and Japan, which bears watching.

Used Car Prices

Manheim US Used Vehicle Value Index

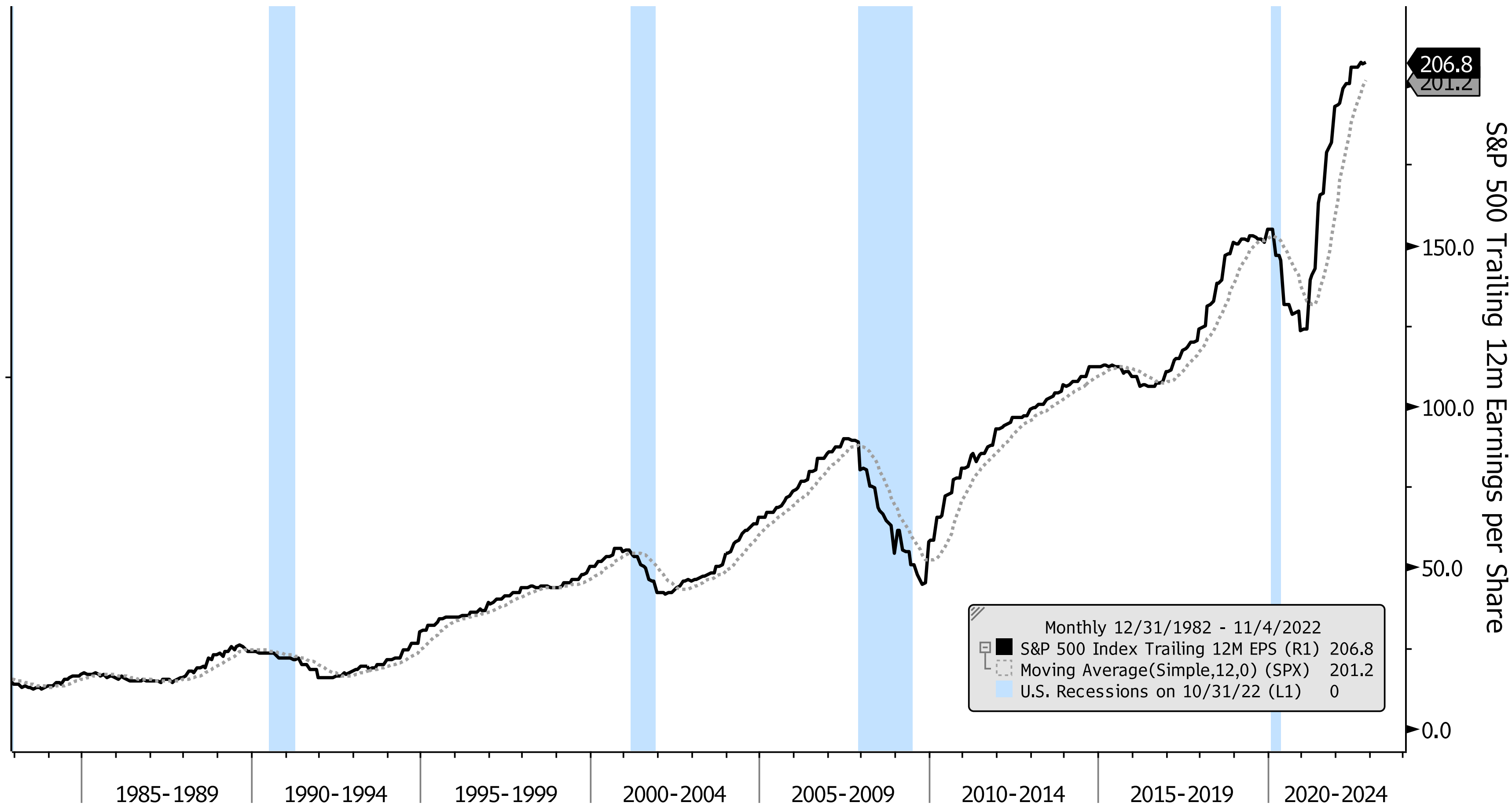


Source: © Merk Investments, Bloomberg

Analysis: Used car prices fell another 2% and are down over 10% year-over-year.

S&P 500 Earnings

S&P 500 Index 12-month Trailing Earnings per Share and 12-month Moving Average



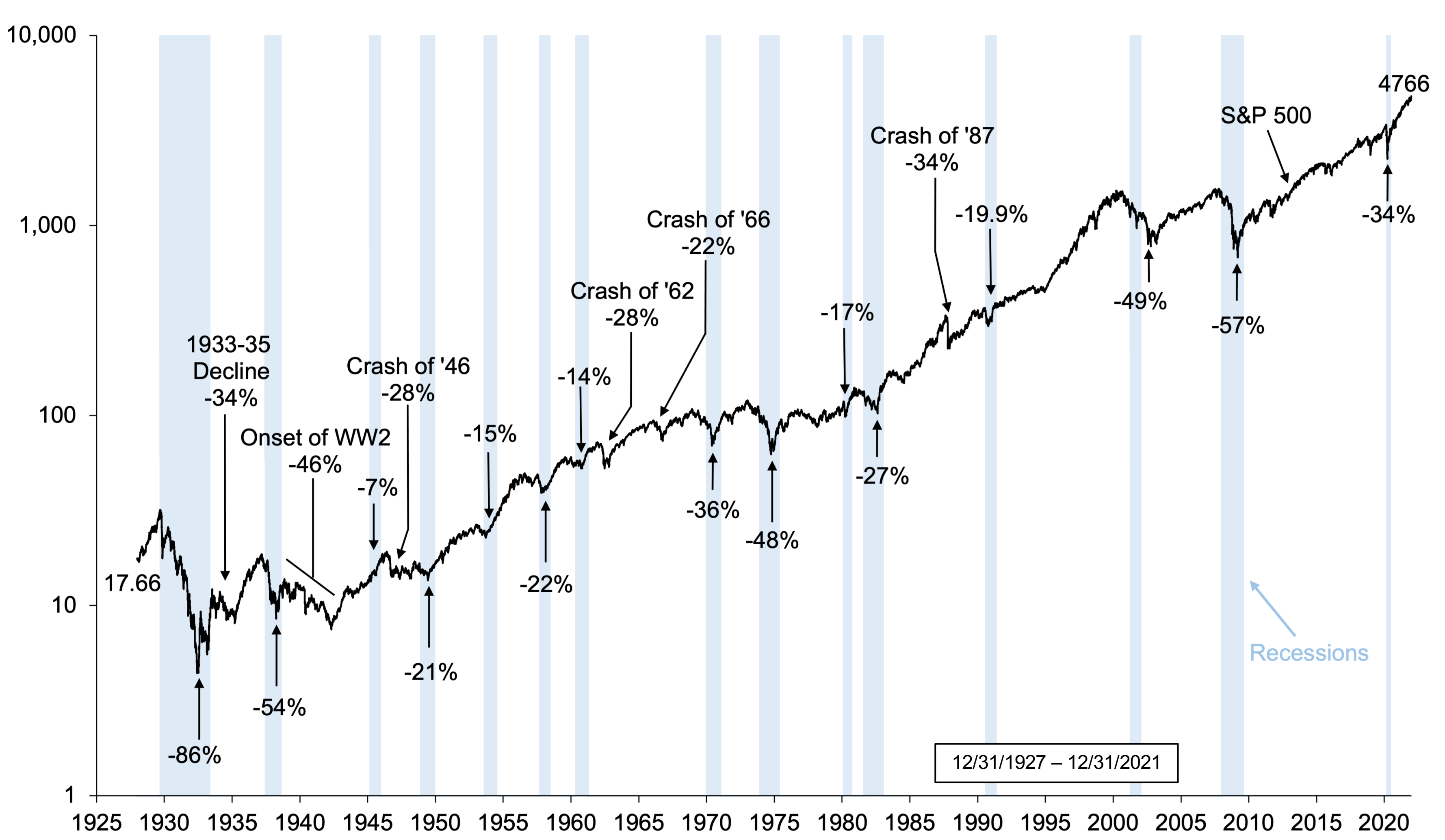
Source: © Merk Investments, Bloomberg

Analysis: Trailing earnings strongly crossed back above their 12-month moving average last year. Earnings growth is expected to slow this year. But so far, there are no clear signs of an earnings recession.

Historically, downside crossover of the S&P 500 12-month trailing Earnings per Share through its 12-month moving average has provided a recession risk warning. But false signals are common as “earnings recessions” are more frequent than economic recessions.

Recessions and S&P 500 Drawdowns

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



Source: © Merk Investments, FRED, Bloomberg

Analysis: Over the past 94 years, 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 following page:

Recessions and Market Declines

			Recession Dates		**Rec. Duration (months)**	**Index Dates**		**Index Levels**		**Duration (months)**	**Decline (percent)**
Event		**Years**	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

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