MERK® | RESEARCH

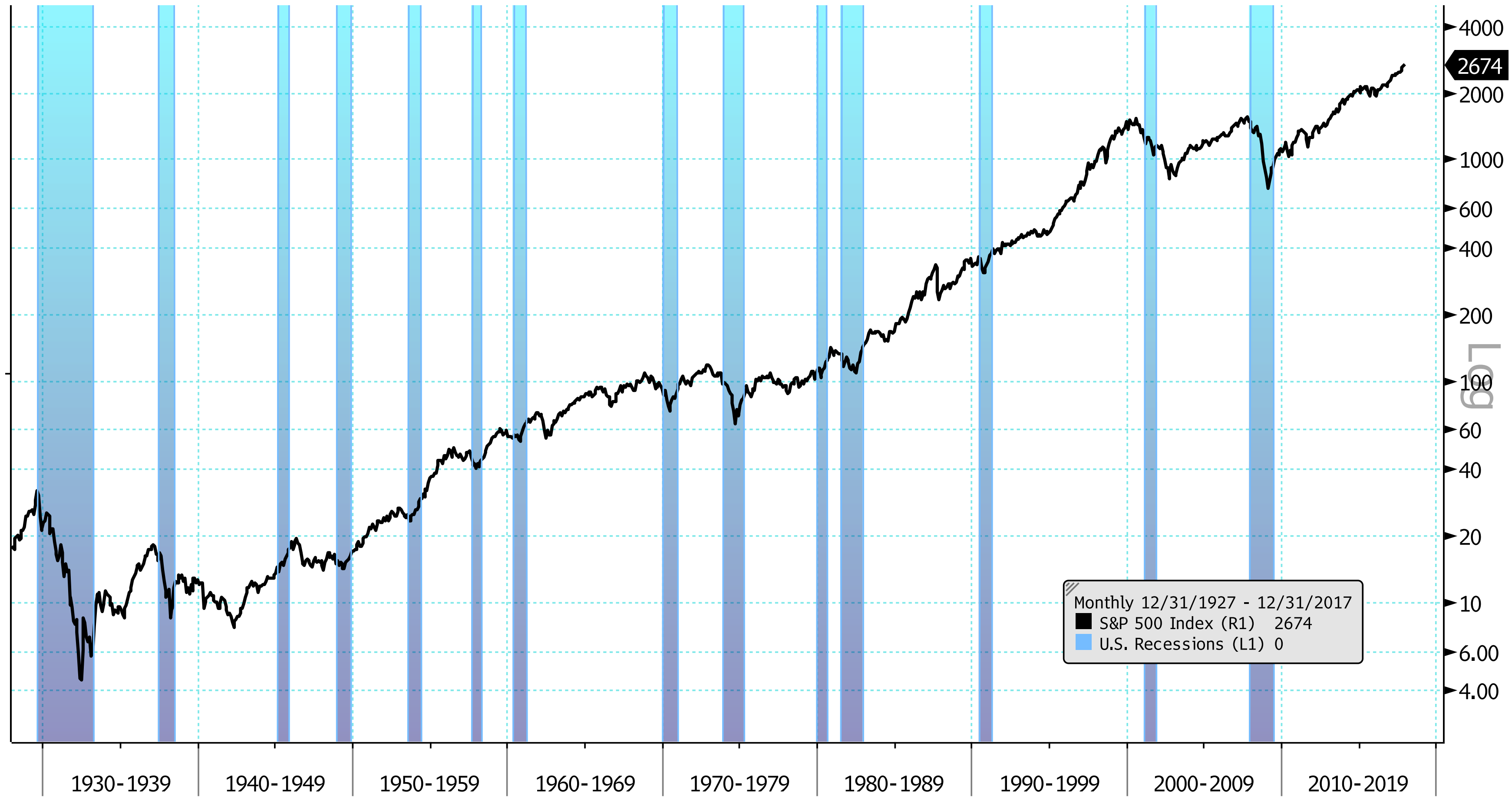
U.S. Business Cycle Chart Book

July 2018

Nick Reece, CFA
Senior Financial Analyst, Merk Investments LLC

Why is the Business Cycle Important?

S&P 500 (log scale) and official National Bureau of Economic Research (NBER) U.S. Recessions



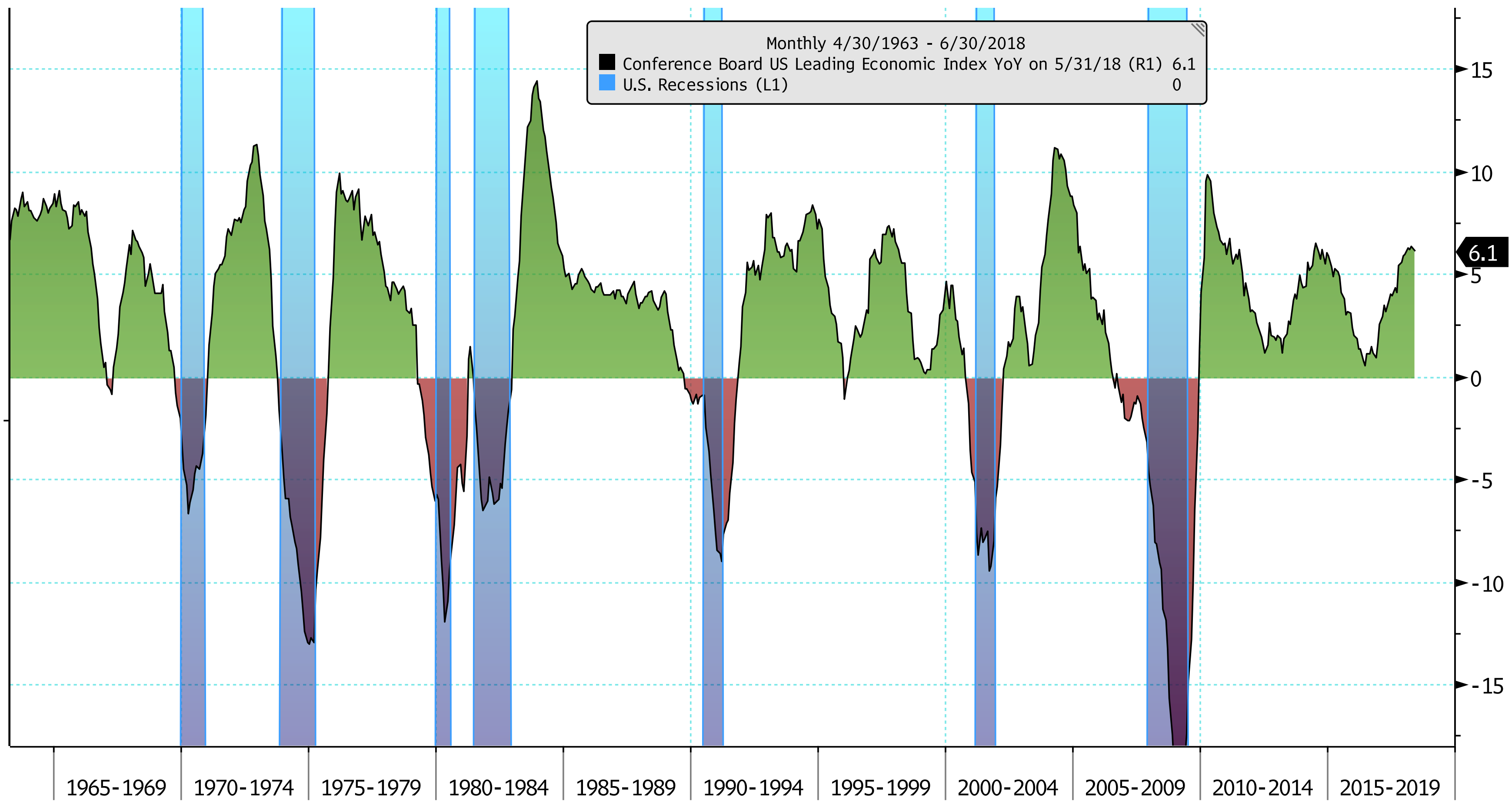
Source: Bloomberg, © Merk Investments LLC www.merkinvestments.com/research

*Analysis: Over the 90 years between 1927 and 2017, the average S&P 500 monthly return during expansions was +0.89% (889 months), compared to an average S&P 500 monthly return during recessions of -0.71% (191 months). In terms of proportions of time: expansion months account for about 80% and recession months about 20%. The business cycle also has important implications for Fed policy. *Note that recessions are not announced by the NBER until well after their start dates**

MERK | RESEARCH

Leading Economic Indicators (LEIs) Index

YoY rate of change of the Conference Board's LEI Index

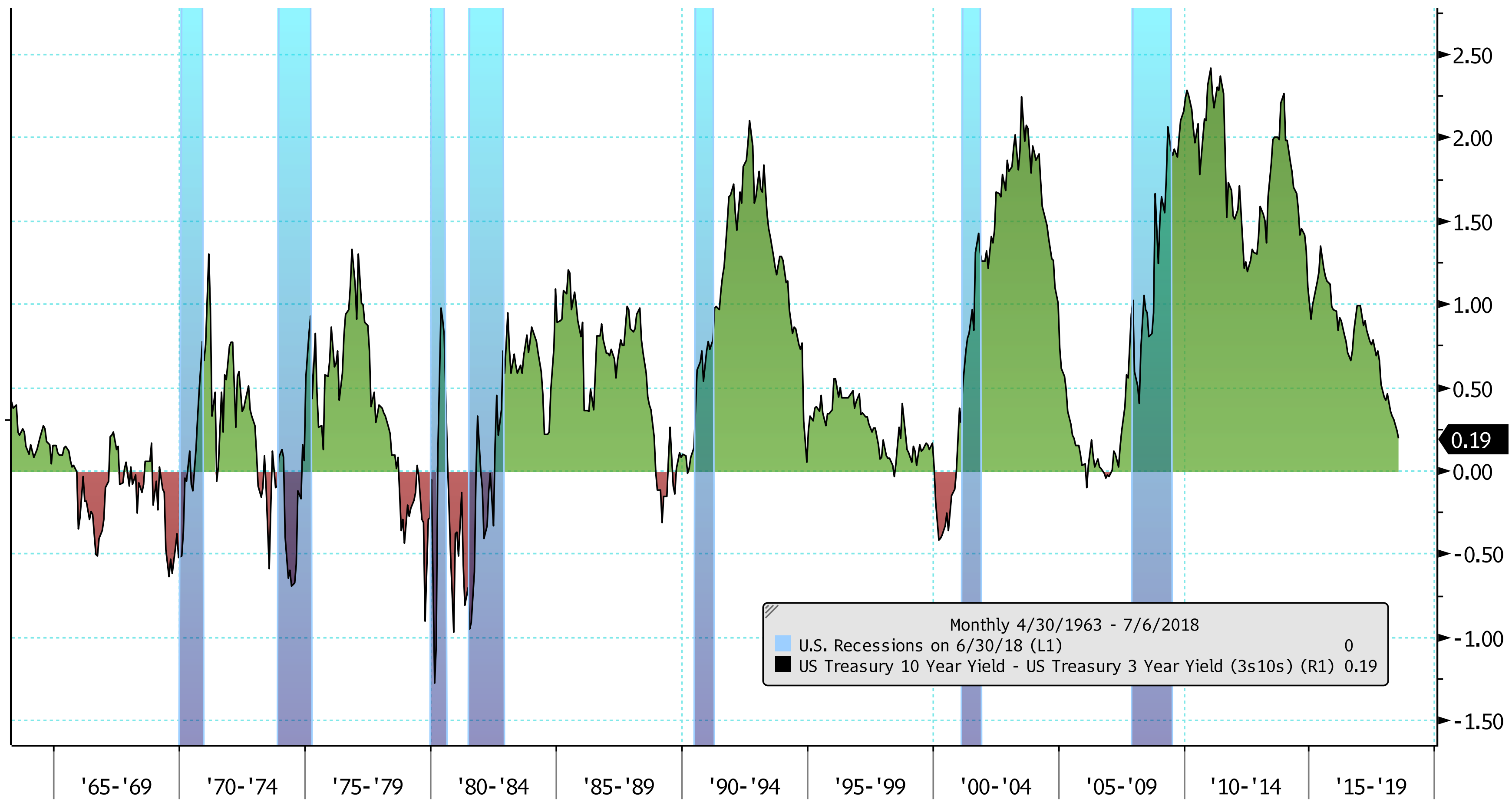


Source: Bloomberg, © Merk Investments LLC www.merkinvestments.com/research

Analysis: LEI YoY rate of change decreased since last month's report, from +6.4 to +6.1
Given that the YoY rate of change is positive, history suggests a recession is unlikely to start within the next six months,
Chart Framework: I'd get incrementally negative on the business cycle outlook if the LEI YoY went negative

U.S. Yield Curve Steepness

(10yr yield – 3yr yield)



Source: Bloomberg, © Merk Investments LLC www.merkinvestments.com/research

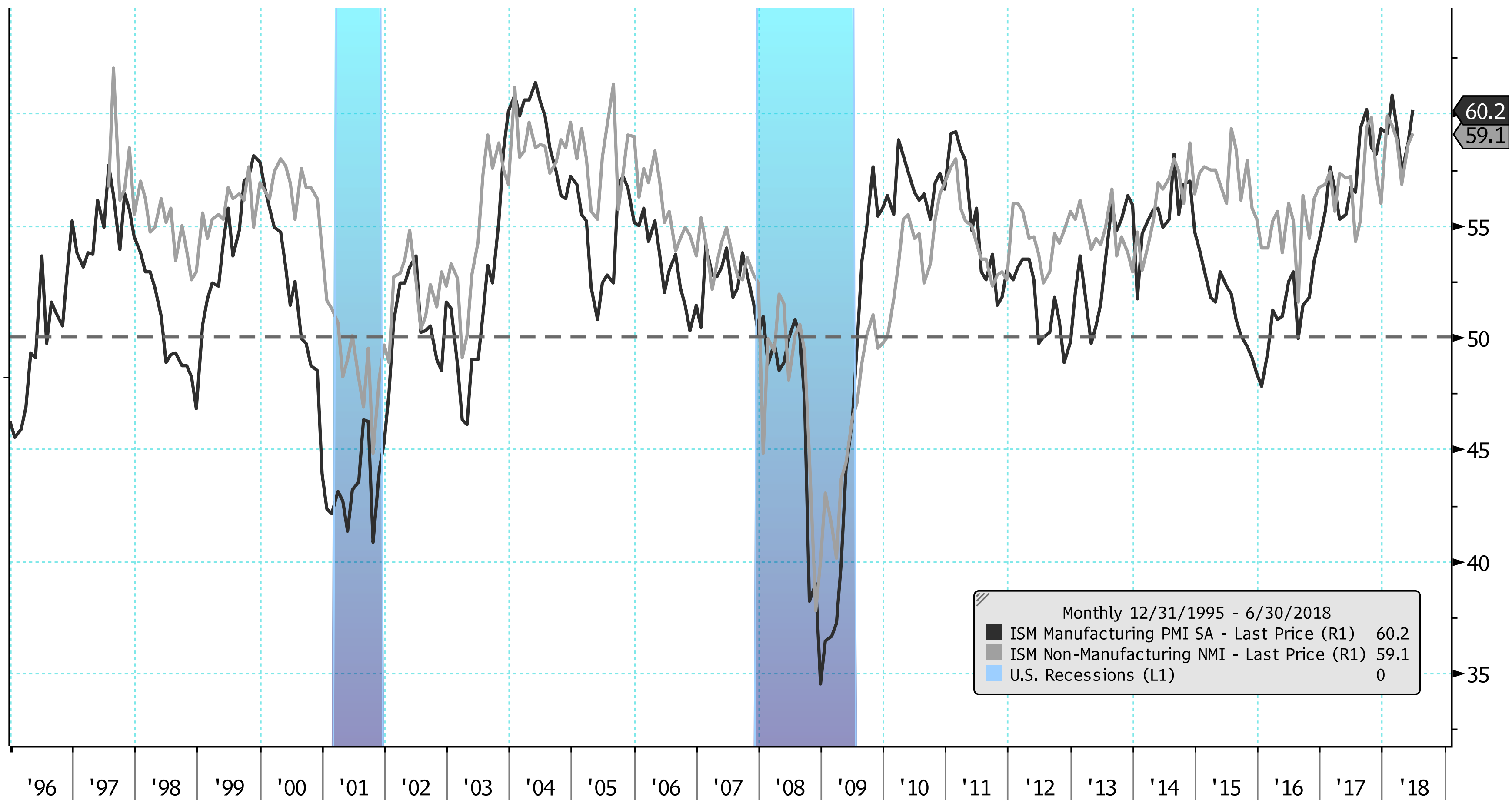
Analysis: Yield curve is still positively sloped

The yield curve is approaching inversion, which may happen before year end

Chart Framework: I'd get incrementally negative on the business cycle outlook if the yield curve inverted (i.e., 3yr yield > 10yr yield)

U.S. PMIs

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



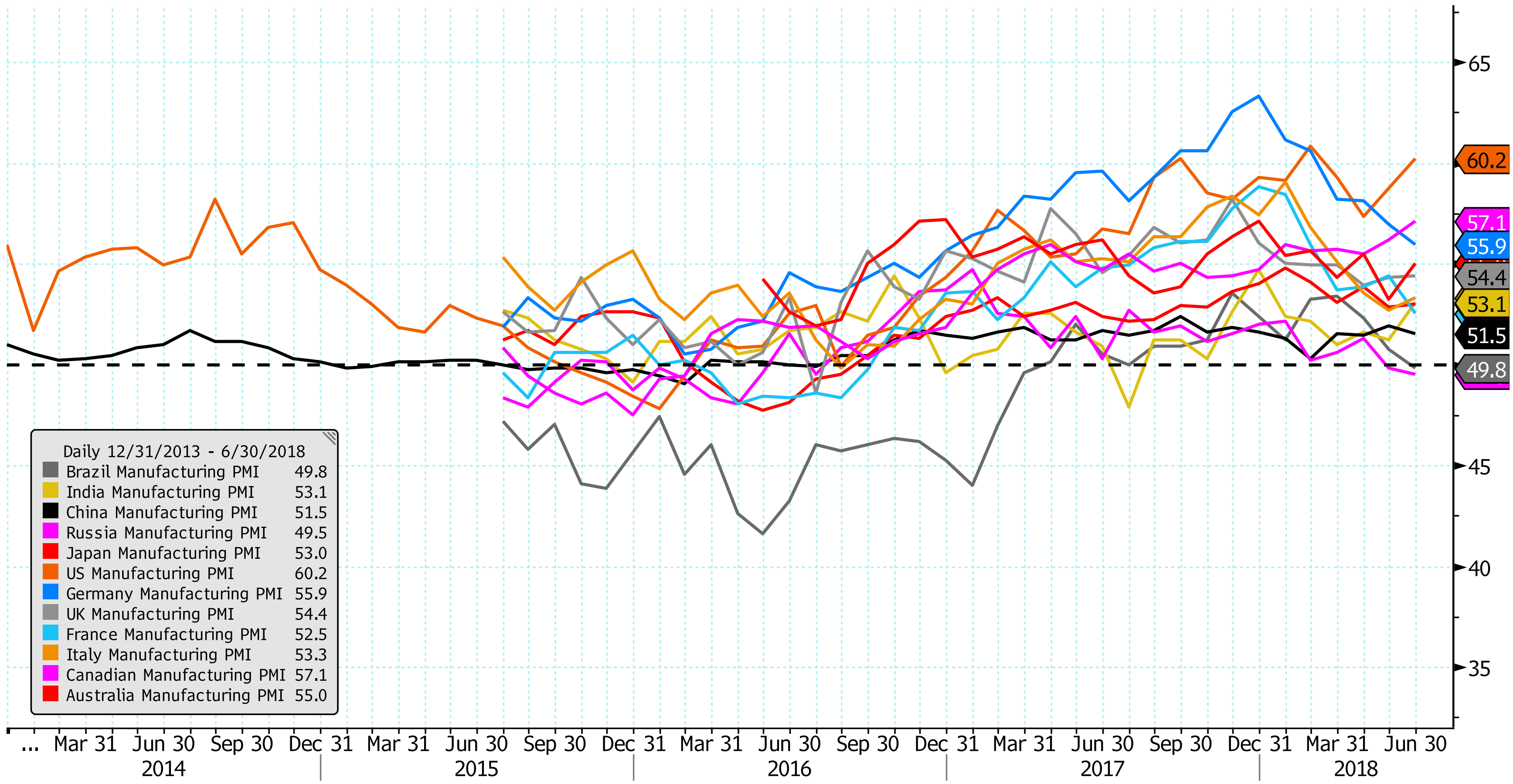
Source: Bloomberg, © Merk Investments LLC www.merkinvestments.com/research

Analysis: Manufacturing PMI ticked up from 58.7 to 60.2 since last month's report, still holding up near the high end of the multi-decade range

Chart Framework: I'd get incrementally negative on the business cycle outlook if manufacturing PMIs fell below 50

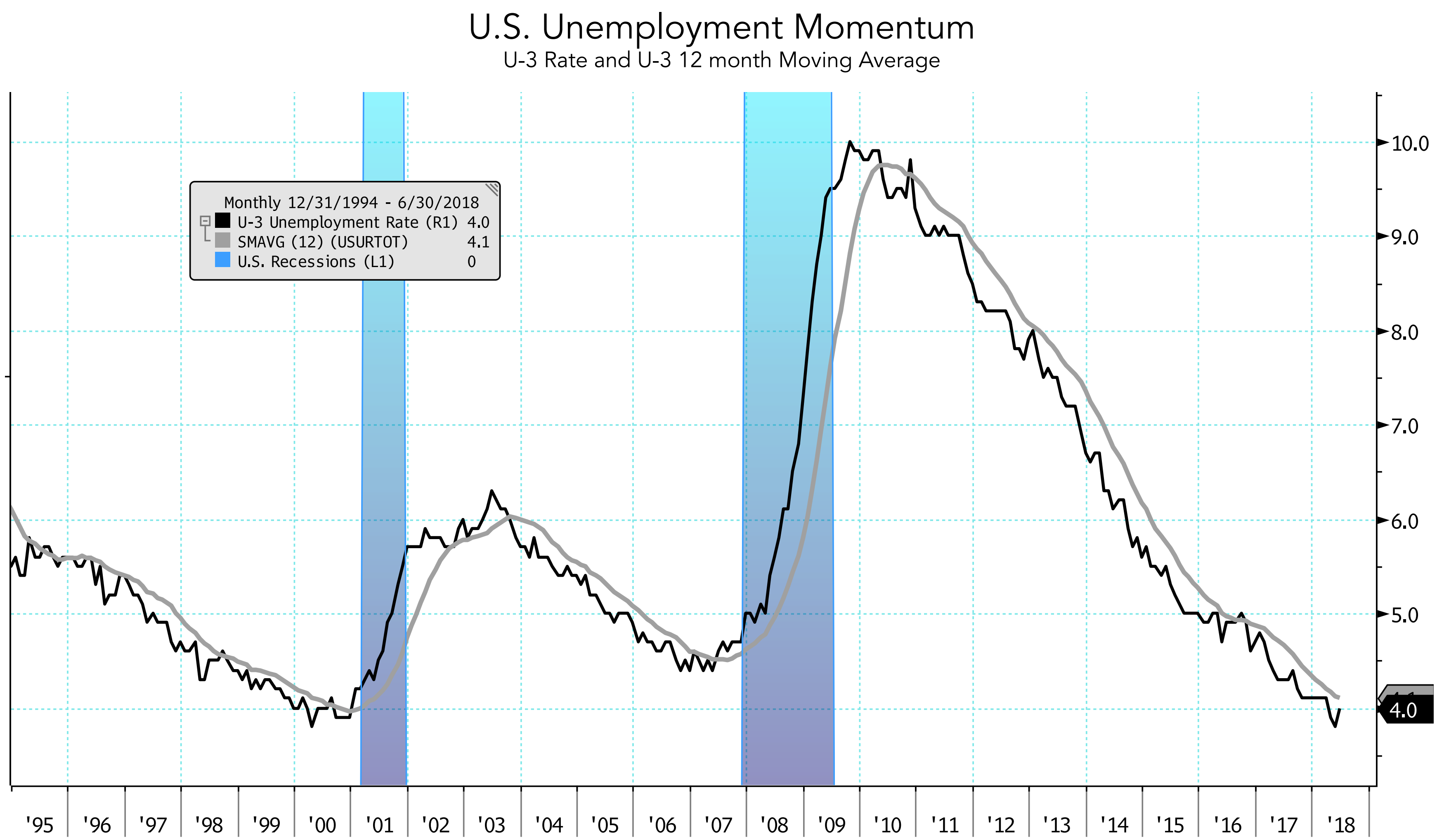
Global PMIs

Largest global economies' Manufacturing PMIs (Purchasing Managers Index)



Source: Bloomberg, © Merk Investments LLC www.merkinvestments.com/research

Analysis: Global economic momentum leveled off over the past month, but both Russia and Brazil PMIs are now below 50
Chart Framework: I'd get incrementally negative on the business cycle outlook if China, India, Germany or Japan manufacturing PMIs fell below 50



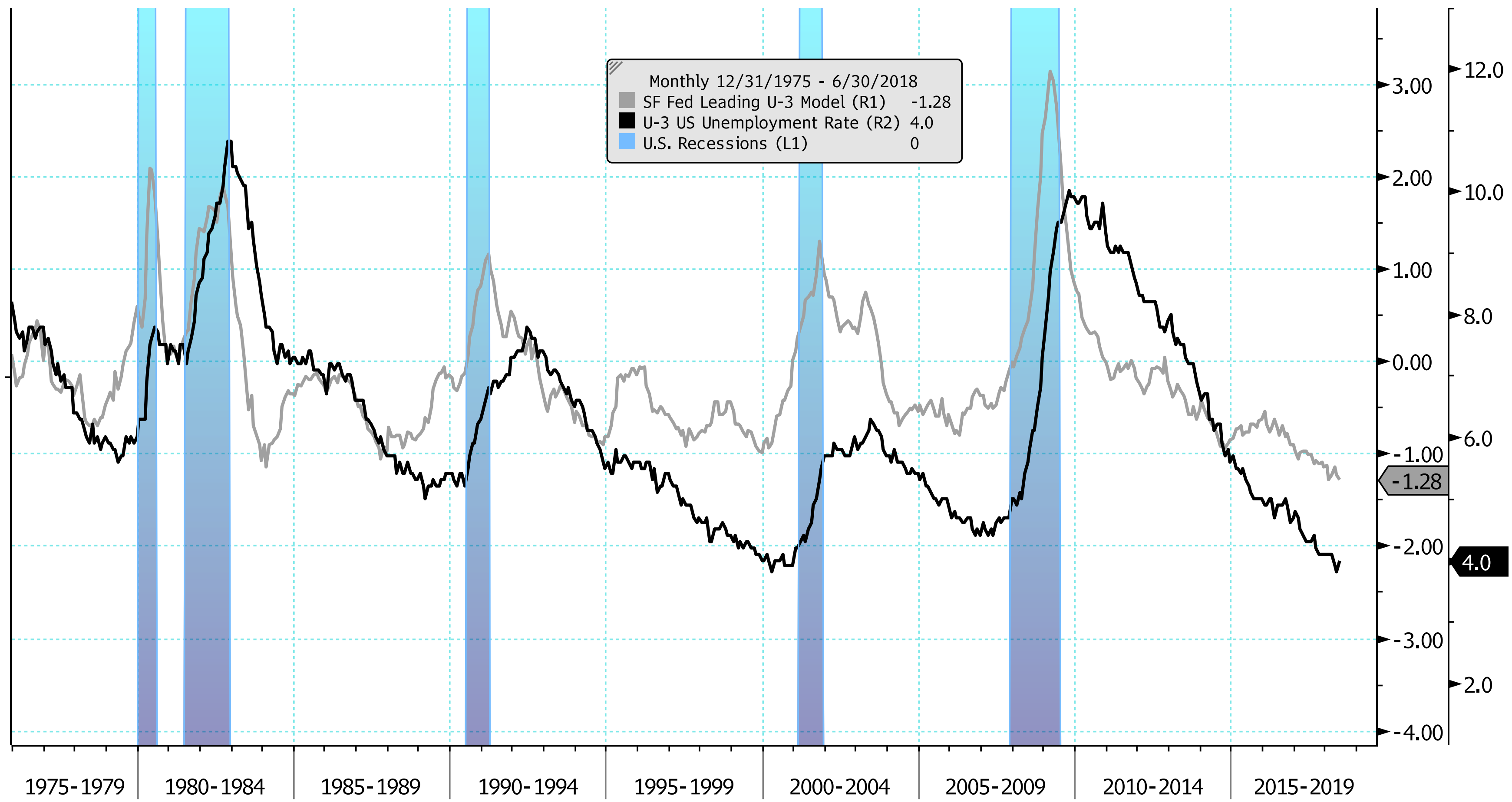
Source: Bloomberg, © Merk Investments LLC www.merkinvestments.com/research

Analysis: Unemployment rate ticked higher to 4.0% but still below its 12-month moving average (with labor force participation rising – not shown)

Chart Framework: I'd get incrementally negative on the business cycle outlook if the unemployment rate moved above its 12m MA while the labor force participation rate trended lower

SF Fed Leading Unemployment Rate (U-3) Model

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

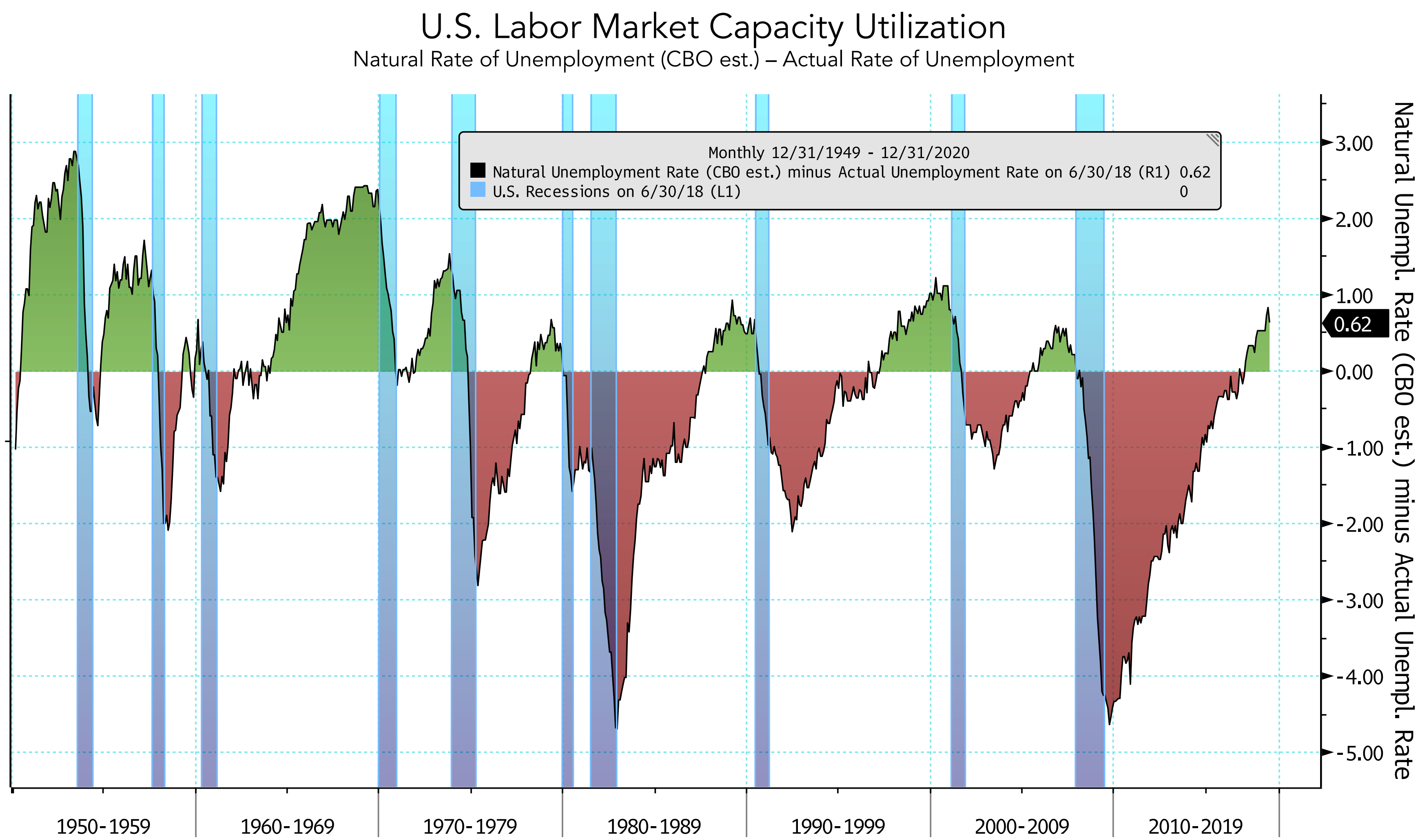


Source: Bloomberg, © Merk Investments LLC www.merkinvestments.com/research

Analysis: The SF Fed unemployment rate model (grey line) continues to trend lower, which suggests the U-3 rate (black line) should continue to trend lower

Chart Framework: I'd get incrementally negative on the business cycle outlook if the SF Fed model line trends higher on a YoY basis

MERK® | RESEARCH



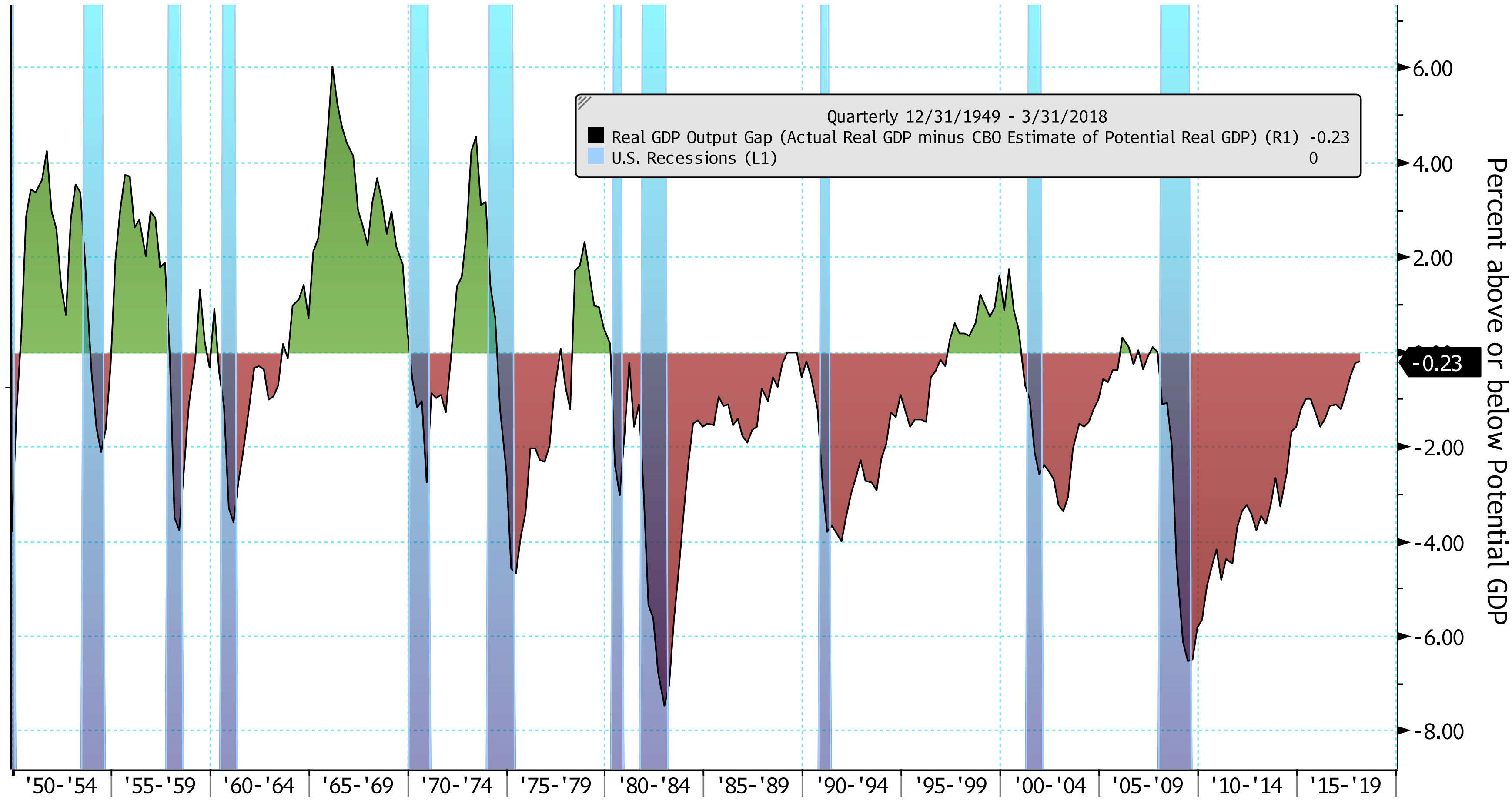
Source: Bloomberg, © Merk Investments LLC www.merkinvestments.com/research

Analysis: The estimated natural rate is greater than the current unemployment rate (4.62% – 4.0%) , meaning the U.S. economy is potentially running above capacity, which likely increases the risk of a recession roughly 1-5 years out.

Chart Framework: I'm currently incrementally negative on the business cycle outlook (medium/longer term) based on this picture

U.S. Real GDP Output Gap

Actual Real GDP minus Potential Real GDP (CBO est.)



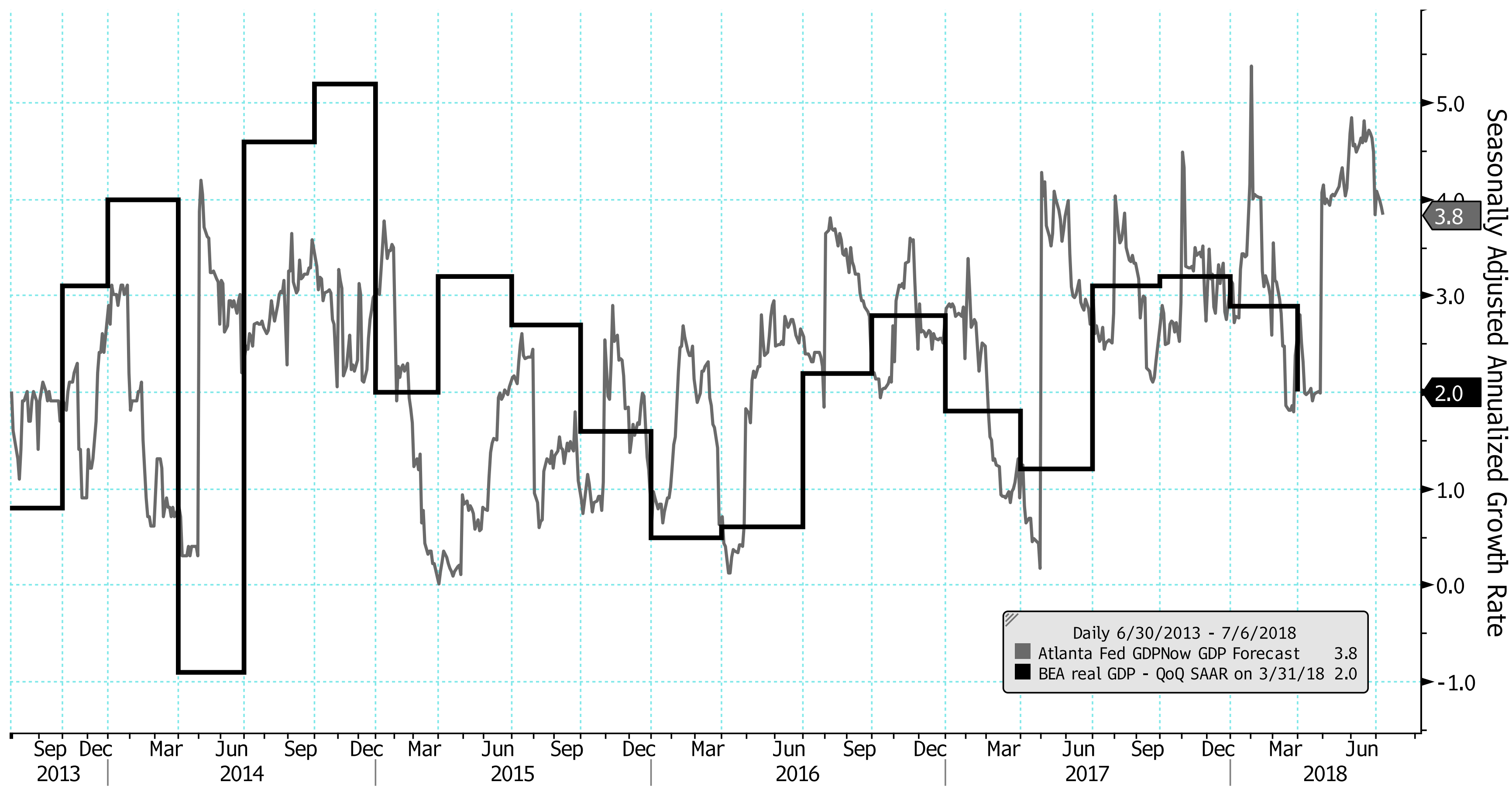
Source: Bloomberg, © Merk Investments LLC www.merkinvestments.com/research

Analysis: Actual real GDP is less than potential real GDP (as estimated by the CBO) by 0.2%, which suggests the expansion might have further to go before the "output gap" closes

Chart Framework: I'd get incrementally negative on the business cycle outlook (medium/longer term) if the output gap closed, meaning actual GDP > potential GDP

Atlanta Fed GDPNow GDP Forecast

GDPNow Forecast and the official QoQ SAAR from BEA



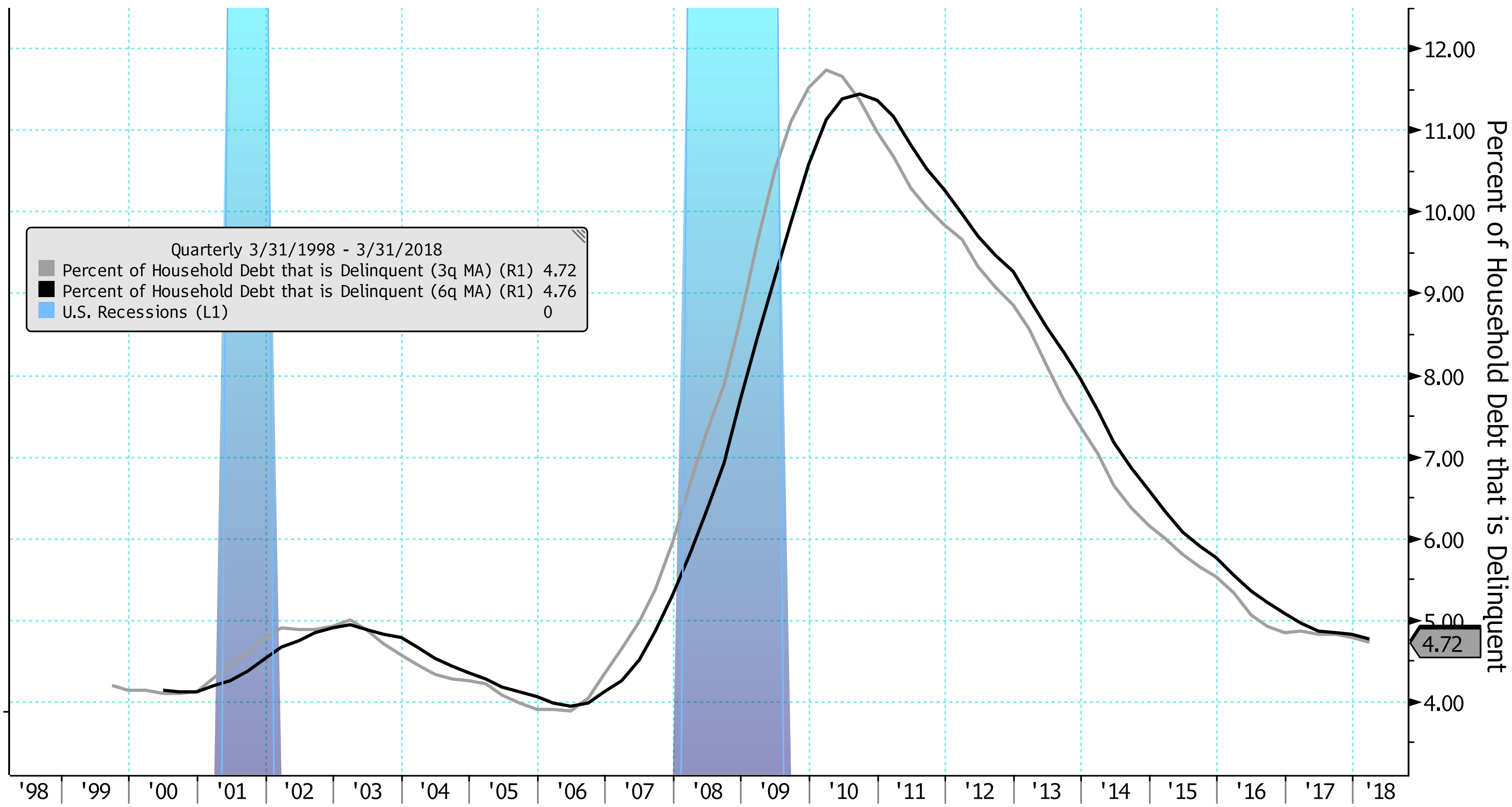
Source: Bloomberg, © Merk Investments LLC www.merkinvestments.com/research

Analysis: The Atlanta Fed GDPNow (grey line) is a noisy data series,
but the latest Atlanta Fed readings suggest the official Q2 GDP reading (black line) might be between 3.5 and 4.0%
Chart Framework: I'd get incrementally negative on the business cycle outlook if the Atlanta Fed GDP indicator fell below zero

MERK® | RESEARCH

U.S. Household Credit Cycle

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

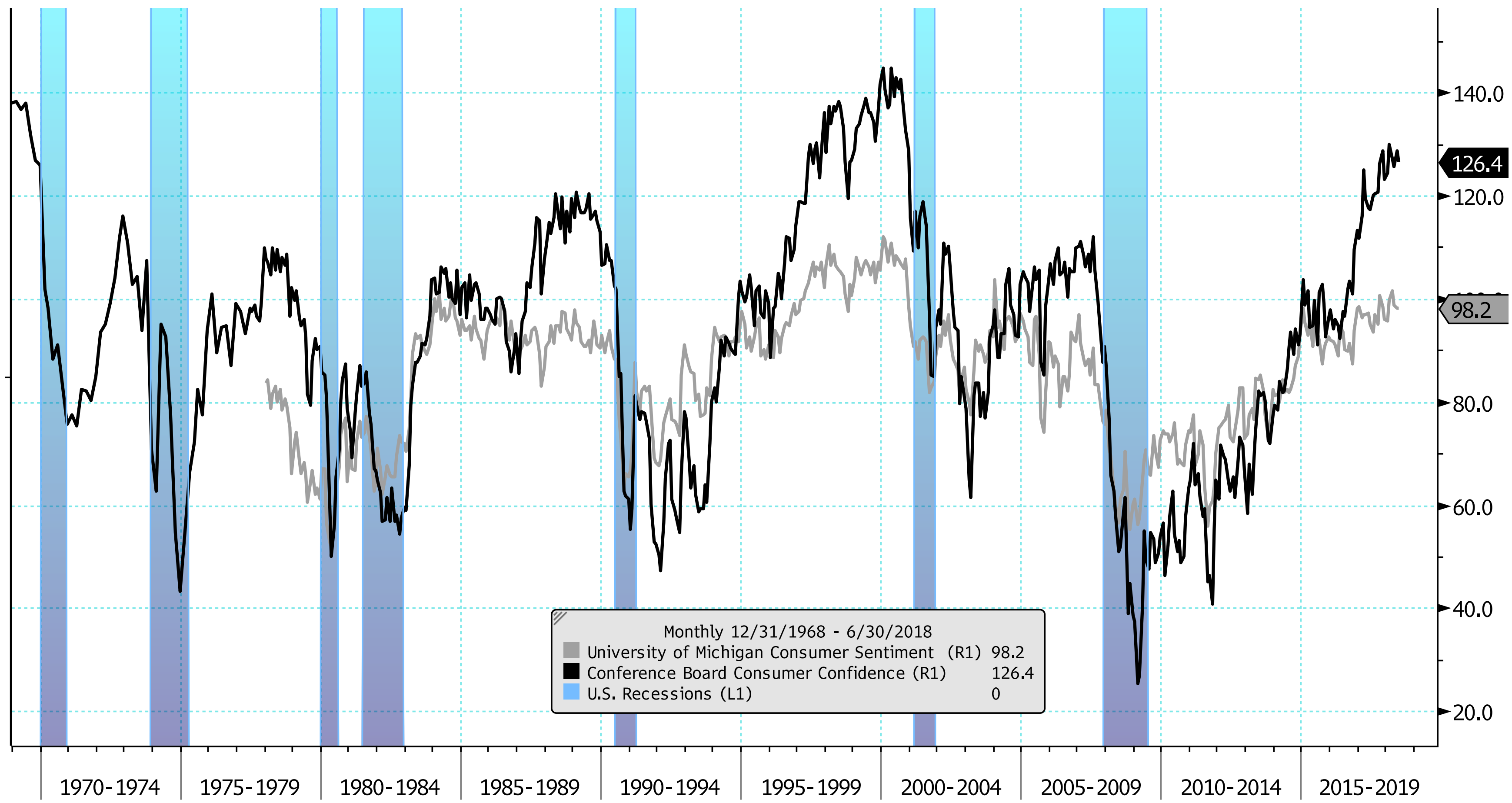


Source: Bloomberg, © Merk Investments LLC www.merkinvestments.com/research

Analysis: The Q1 2018 data showed a further decline in the delinquency rate.
The household credit cycle still going: 3-quarter moving average (grey) < 6-quarter moving average (black)
Chart Framework: I'd get incrementally negative on the business cycle outlook if the 3q MA rose above the 6q MA
The Q2 2018 data comes out in late August

U.S. Consumer Confidence

Michigan Consumer Sentiment and Conference Board Consumer Confidence



Source: Bloomberg, © Merk Investments LLC www.merkinvestments.com/research

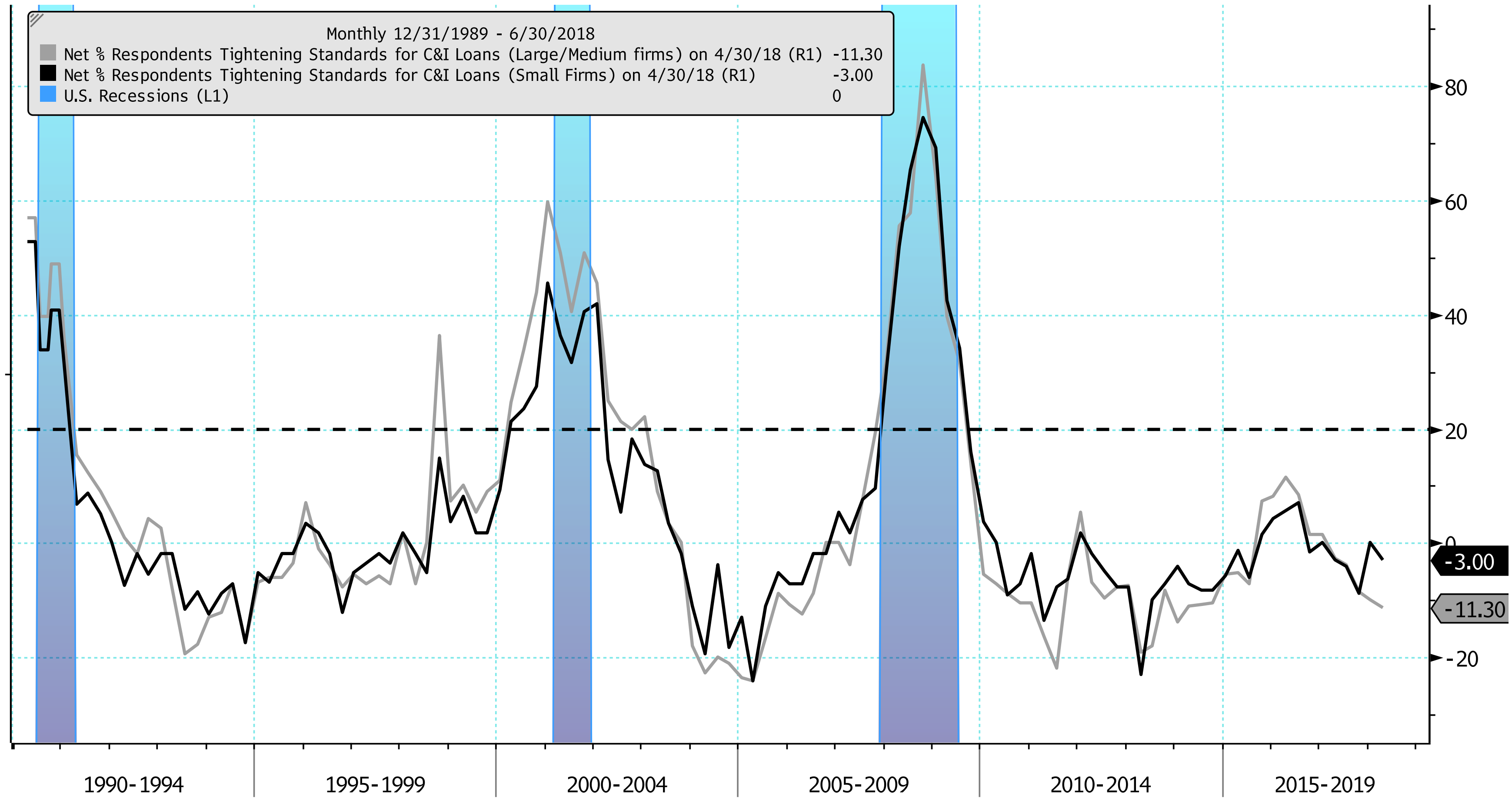
Analysis: Both measures of consumer confidence are still trending higher, a near term positive but at elevated levels can act as a contrarian indicator over then medium term

Chart Framework: I'd get incrementally negative on the business cycle outlook if both measures started trending lower on a YoY basis

MERK® | RESEARCH

Bank Lending Standards

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



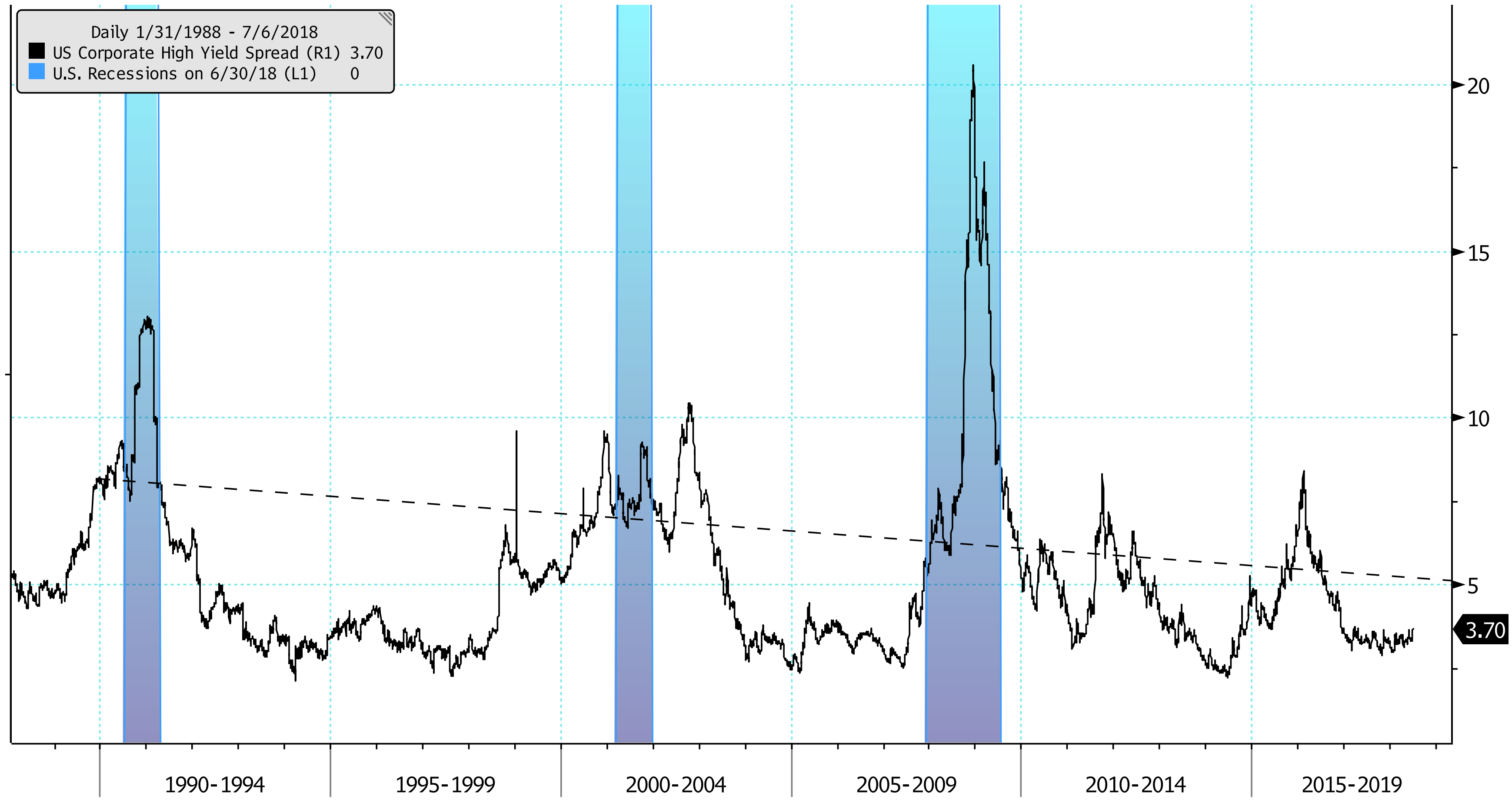
Source: Bloomberg, © Merk Investments LLC www.merkinvestments.com/research

Analysis: Bank lending standards are still neutral/supportive of economic activity.
Chart Framework: I'd get incrementally negative on the business cycle outlook if 20% of respondents report tightening lending standards

MERK® | RESEARCH

High Yield Spread

US High Yield Spread with Trend Line



Source: Bloomberg, © Merk Investments LLC www.merkinvestments.com/research

Analysis: The high yield credit spread is still relatively contained, although right now near the one year highs
Chart Framework: I'd get incrementally negative on the business cycle outlook if the spread moves above 5%

Checklist

Page	Chart	Time Horizon	Per Framework Outlook on Business Cycle
3	LEIs	Short/Medium Term	Positive
4	Yield Curve	Medium Term	Positive
5	U.S. PMIs	Short/Medium Term	Positive
6	Global PMIs	Short/Medium Term	Neutral/Positive
7	U-3 v 12m MA	Medium Term	Positive
8	SF Fed U-3	Medium Term	Positive
9	Labor Force Capacity Util.	Medium/Longer Term	Negative
10	Output Gap	Medium/Longer Term	Neutral/Positive
11	GDP Now Forecast	Short Term	Positive
12	Household Credit	Medium Term	Positive
13	US Consumer	Short/Medium Term	Neutral/Positive
14	Lending Standards	Medium Term	Positive
15	High Yield Spread	Short/Medium Term	Positive
		Time Horizon	Overall Outlook on Business Cycle
		Short Term (<6 months)	Positive with low/medium uncertainty
		Medium/Longer Term (6m - 5 years)	Neutral with high uncertainty

Conclusion/Thoughts

Data developments since the last month's report have been mixed- however, overall the economic expansion looks set to continue over the next few months, and in general until further notice. All of these charts or concepts are somewhat inter-related, as is the economy in general, so the idea is to have some different data points to cross-reference. That being said, almost all indicators are still positive.

The unemployment rate ticked higher in the latest jobs report (from 3.8% to 4.0%), but it was on the back of an uptick in labor force participation rate (from 62.7% to 62.9%). The increase in labor force participation is generally a healthy sign- meaning some people are coming off the sidelines and back into the labor force. Nevertheless it is worth respecting that the data shows the gap between the U-3 rate and its 12-month moving average has decreased. Yield curve steepness is pushing to cycle lows on rising short term rates as the Fed continues its hiking cycle. I'll turn negative on the yield curve picture if/when it goes inverted, which might be later this year- however, it's worth keeping in mind that yield curve inversion is a medium term indicator (6-24 months) with respect to likely recession timing.

The household credit situation is still positive: the Q1 2018 household credit report from the NY Fed came out positively, and consumer confidence continues to trend higher. The corporate credit situation, as shown by lending standards and high yield spreads, still looks supportive of the business cycle.

The fact that some measures suggest the economy is potentially operating above capacity probably increases recession risk over roughly the 1-5 year period. Operating above capacity can persist for some time but is generally thought to be unsustainable over the longer term. However, for the time being, there seems to be some slack remaining in the labor market, which suggests that the economic cycle can continue for a while longer. Also, consumer confidence measures are at elevated levels which might suggest the turn in the cycle may not be too many years away.

The data suggests classic late-upswing business cycle behavior. According to the CFA text, a late upswing means "at this stage of the business cycle, the output gap has closed and the economy is in danger of overheating. Confidence is high; unemployment is low. The economy may grow rapidly. Inflation starts to pick up, with wages accelerating as shortages of labor develop." (See the recent Inflation and Fed Chart Books for analysis on inflation and wages.)

To reiterate, taken together, I think the U.S. business cycle picture is still positive. On balance, based on the charts and framework presented (which inevitably may not capture all possible risk factors in real-time), it seems likely the U.S. economic expansion continues until further notice.

For more charts and analysis, including Premium Charts and Axel's Take: www.merkinvestments.com/research

-Nick Reece, CFA

Disclosure

This report was prepared by Merk Investments LLC, and reflects the current opinion of the authors. It is based upon sources and data believed to be accurate and reliable. Merk Investments LLC makes no representation regarding the advisability of investing in the products herein. Opinions and forward-looking statements expressed are subject to change without notice. This information does not constitute investment advice and is not intended as an endorsement of any specific investment. The information contained herein is general in nature and is provided solely for educational and informational purposes. The information provided does not constitute legal, financial or tax advice. You should obtain advice specific to your circumstances from your own legal, financial and tax advisors. Past performance is no guarantee of future results.

*   *   *

Published by Merk Investments LLC