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U.S. Business Cycle Chart Book

January 2019

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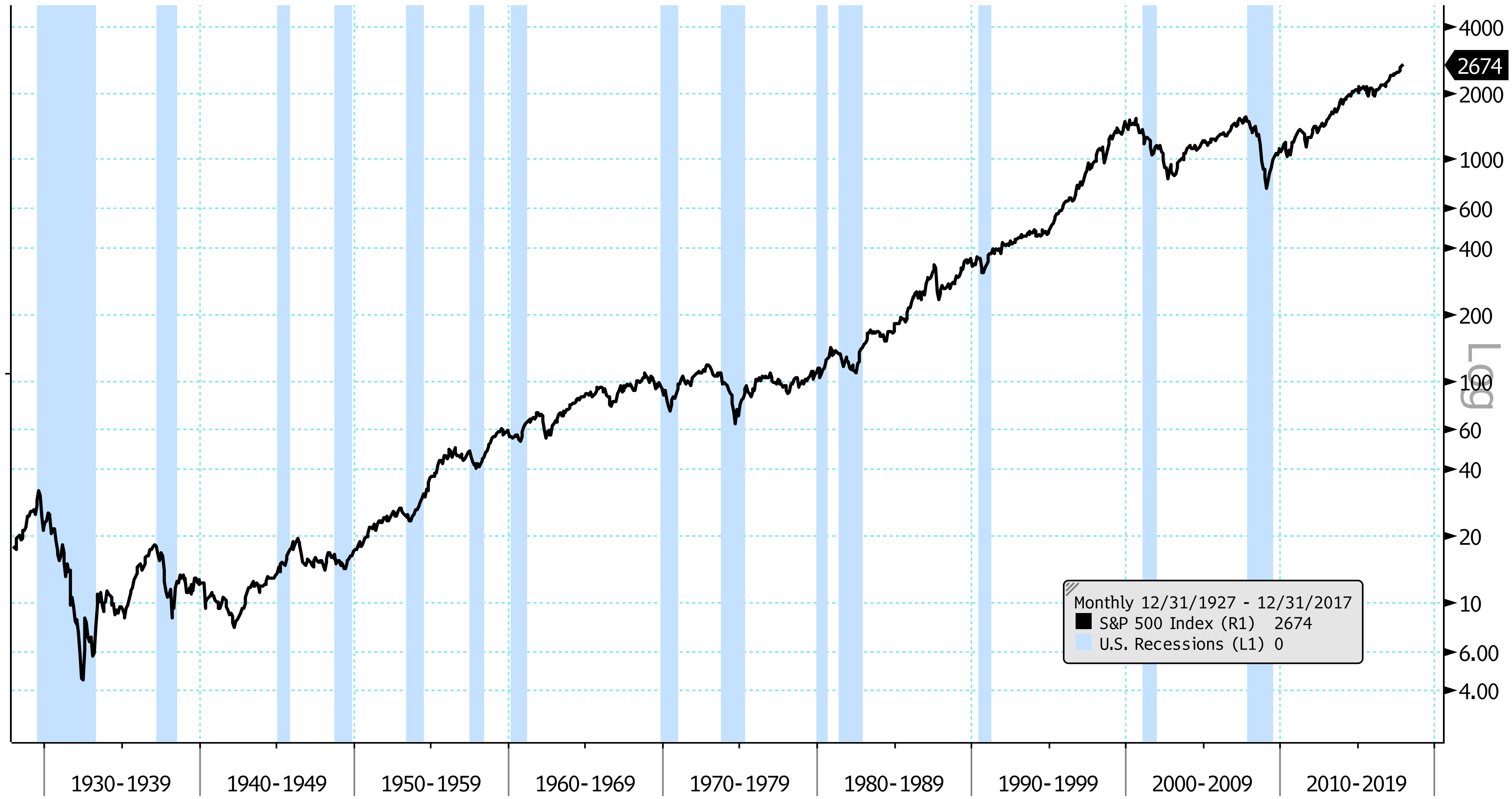
Why is the Business Cycle Important?

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



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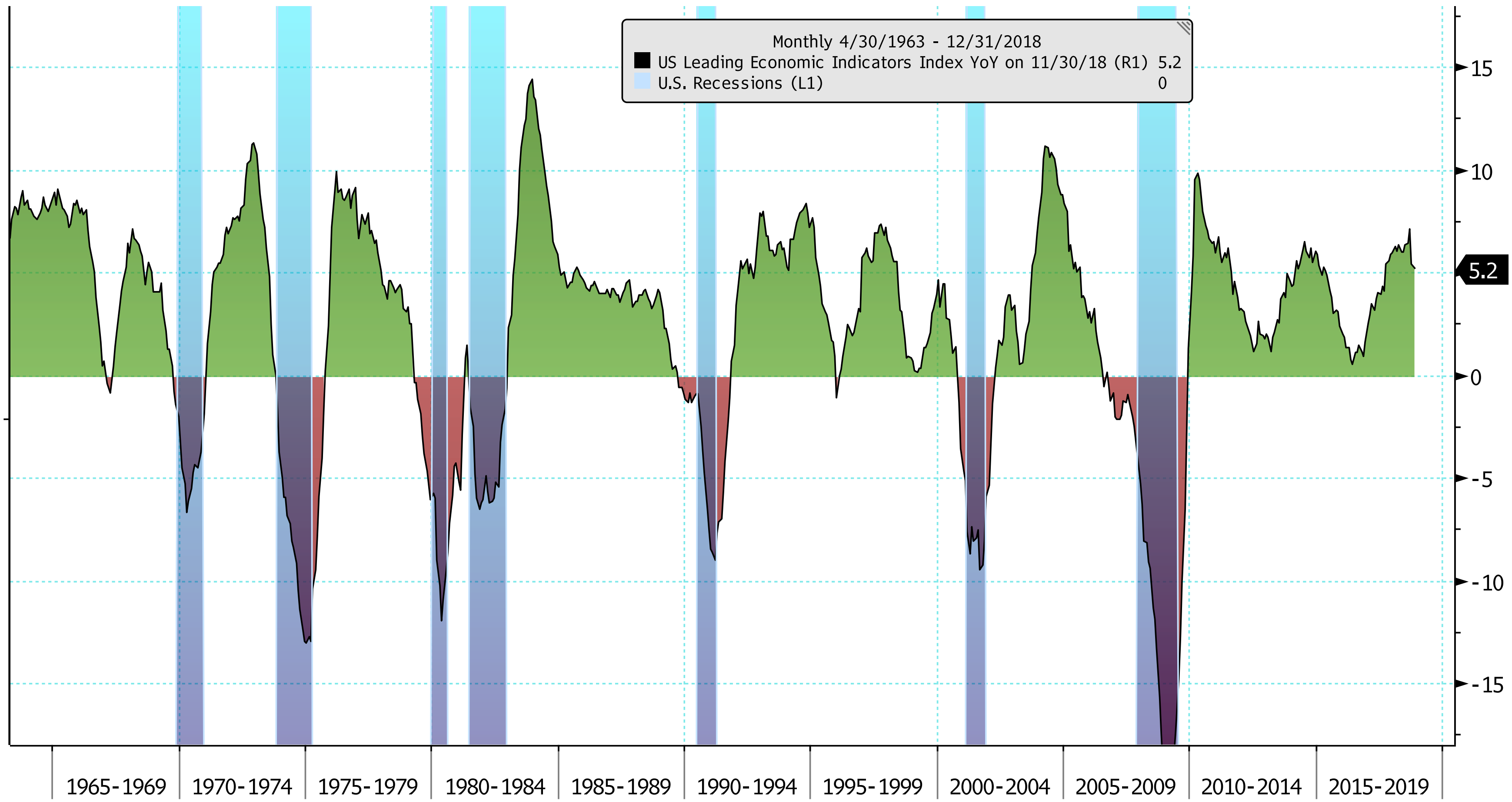
*Analysis: Over the 90 years between 1927 and 2017, the average S&P 500 monthly return during expansions was +0.89% (889 months), compared to an average S&P 500 monthly return during recessions of -0.71% (191 months). In terms of proportions of time: expansion months account for about 80% and recession 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**

Leading Economic Indicators (LEIs) Index

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



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Analysis: Since last month's report the LEI YoY rate of change decreased: from +5.9 to +5.2. The momentum has slowed somewhat, but given that the YoY rate of change remains 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.

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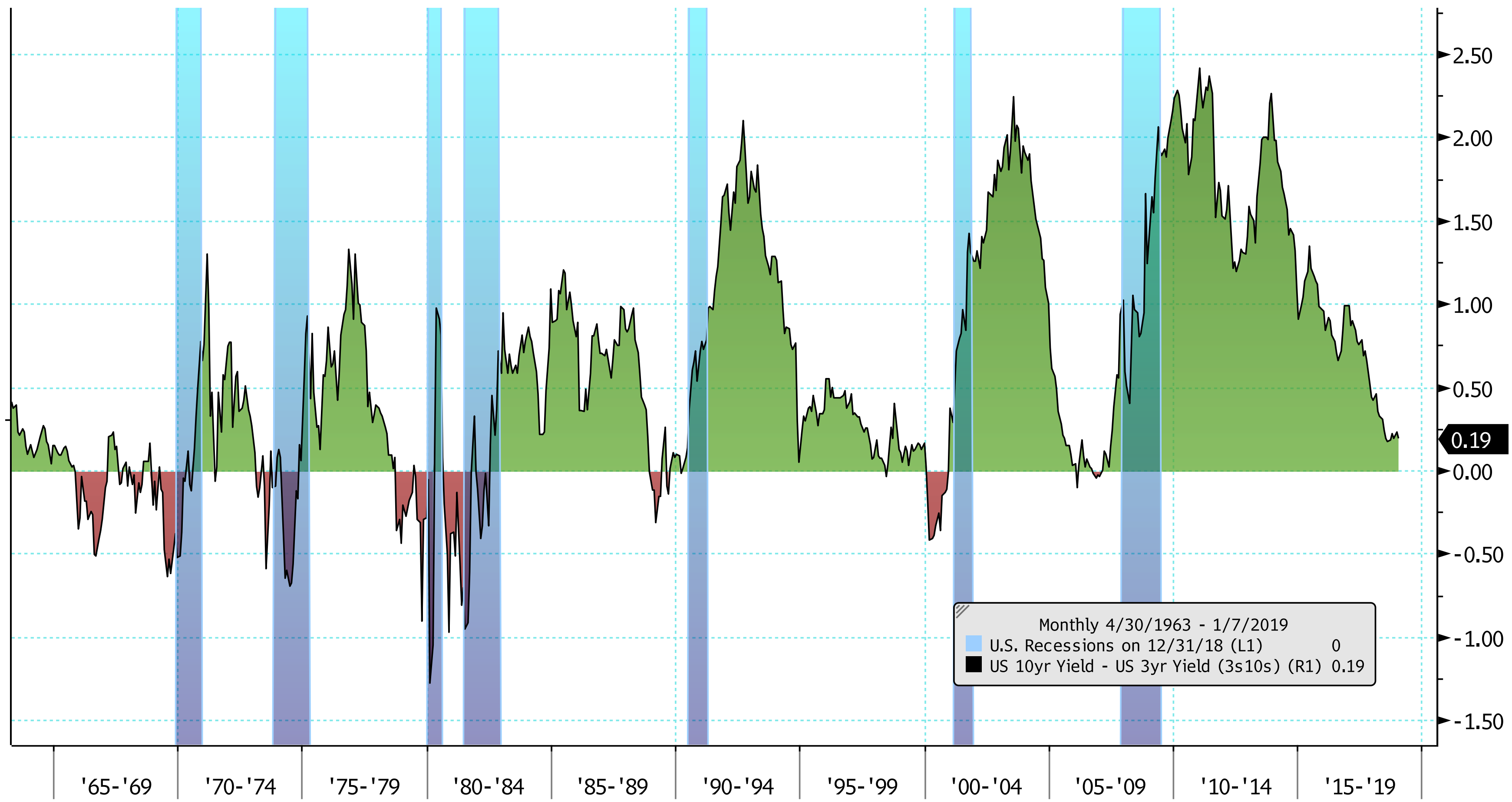
U.S. Yield Curve Steepness

(10yr yield – 3yr yield)



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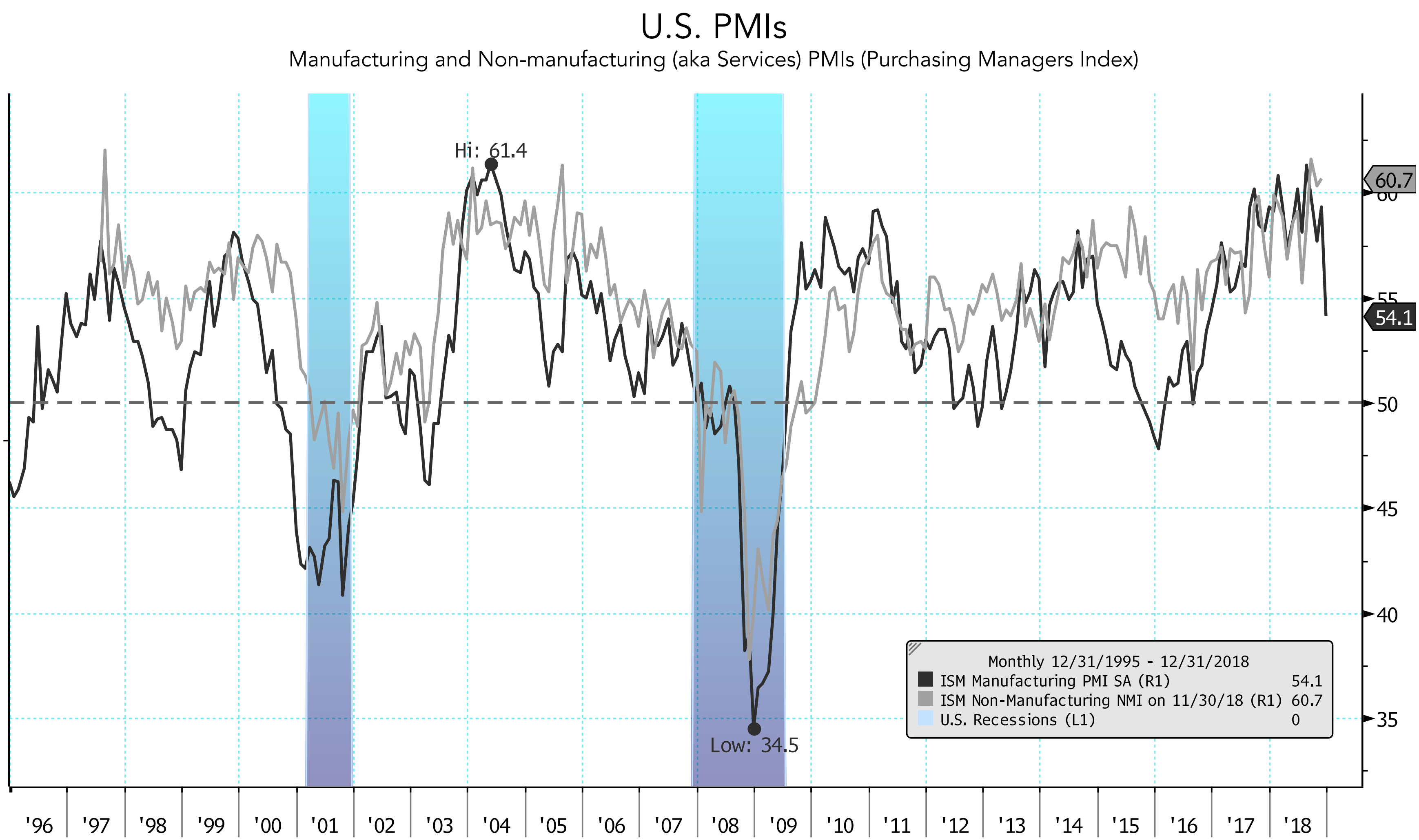
Analysis: The yield curve is still positively sloped, meaning the 10yr yield is higher than the 3yr yield. The yield curve has steepened somewhat since last month's report, but in general the flattening trend continues and the curve may invert in the coming months. Chart Framework: I'd get incrementally negative on the medium term business cycle outlook if the yield curve inverted (i.e., 3yr yield > 10yr yield).



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Analysis: Since last month's report manufacturing PMI ticked down, from 59.3 to 54.1, but is generally still at a level consistent with a strong economy. Chart Framework: I'd get incrementally negative on the business cycle outlook if manufacturing PMIs fell below 50.

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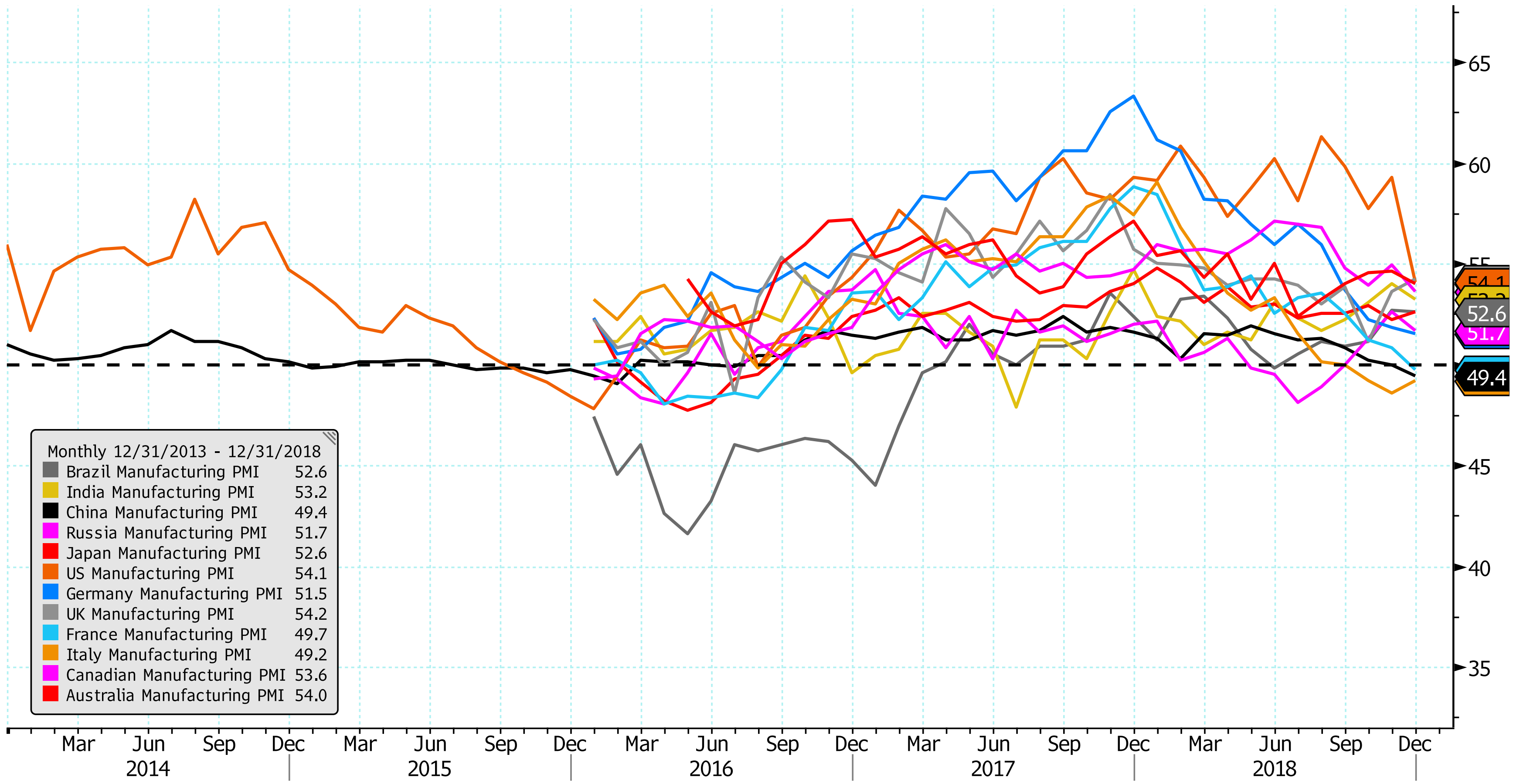
Global PMIs

Largest global economies' Manufacturing PMIs (Purchasing Managers Index)



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Analysis: Global economic momentum was mostly weaker over the past month. Italy's Manufacturing PMI remains below 50. More importantly, China's PMI has fallen below 50, which warrants attention. Given my framework I'm incrementally negative on this picture. Chart Framework: I'd get incrementally negative on the business cycle outlook if China, India, Germany, or Japan manufacturing PMIs fell below 50. To get positive all would have to be above 50.

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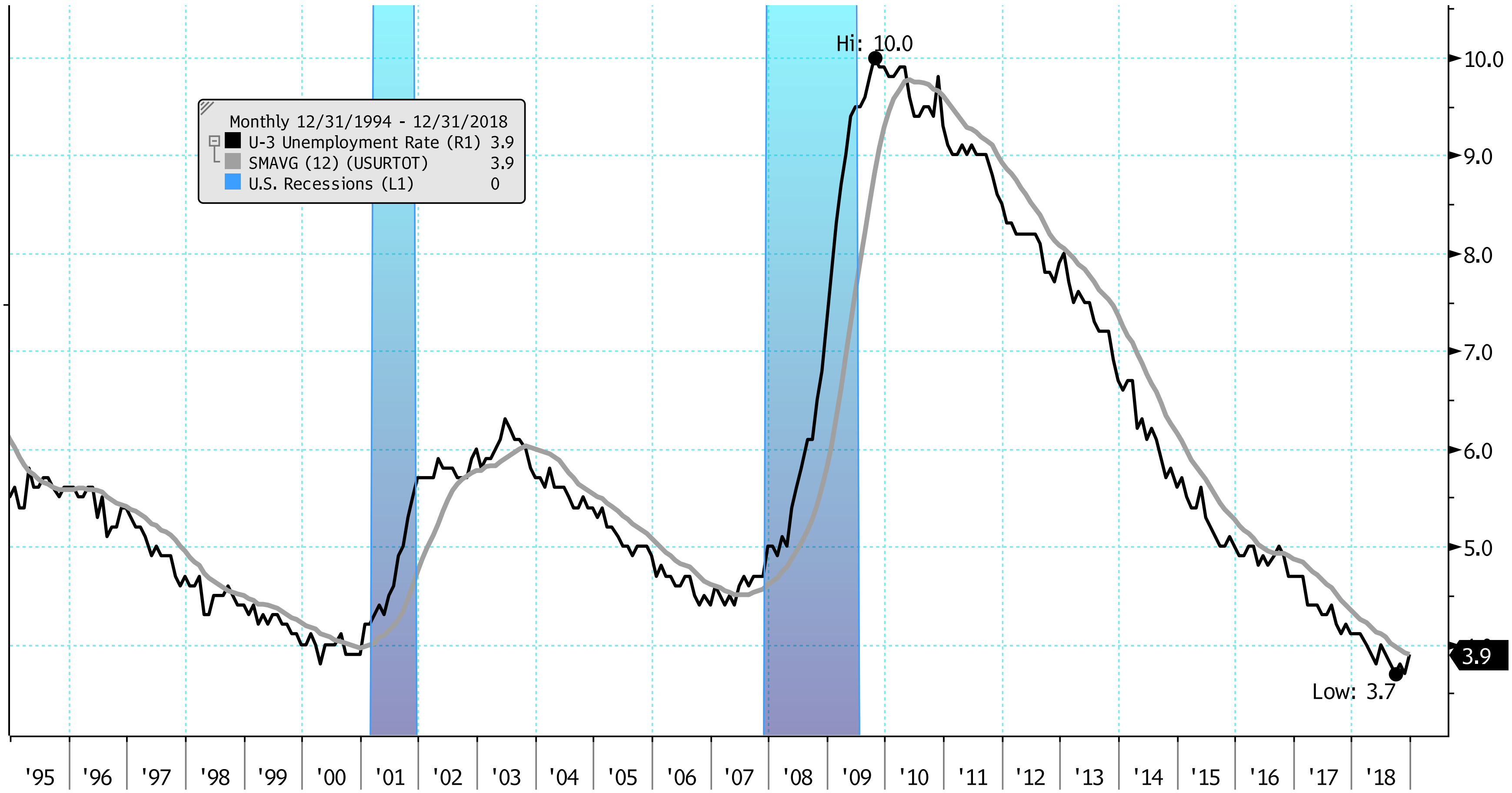
U.S. Unemployment Momentum

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



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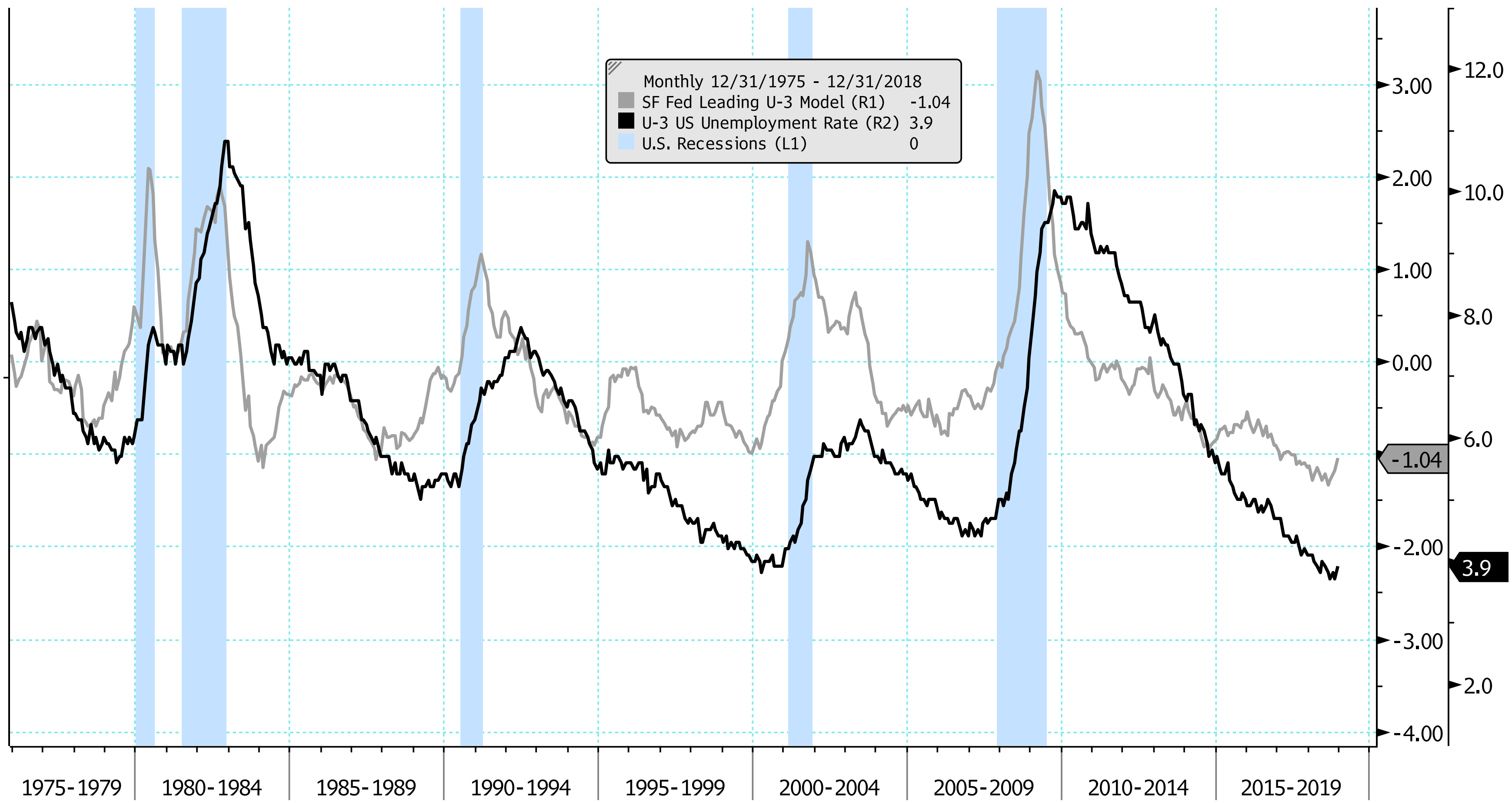
Analysis: The unemployment rate ticked up from 3.7% to 3.9%, which is right at the 12-month moving average (however the labor force participation rate ticked higher as well – not shown). Chart Framework: I'd get incrementally negative on the business cycle outlook if the unemployment rate moved above 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)



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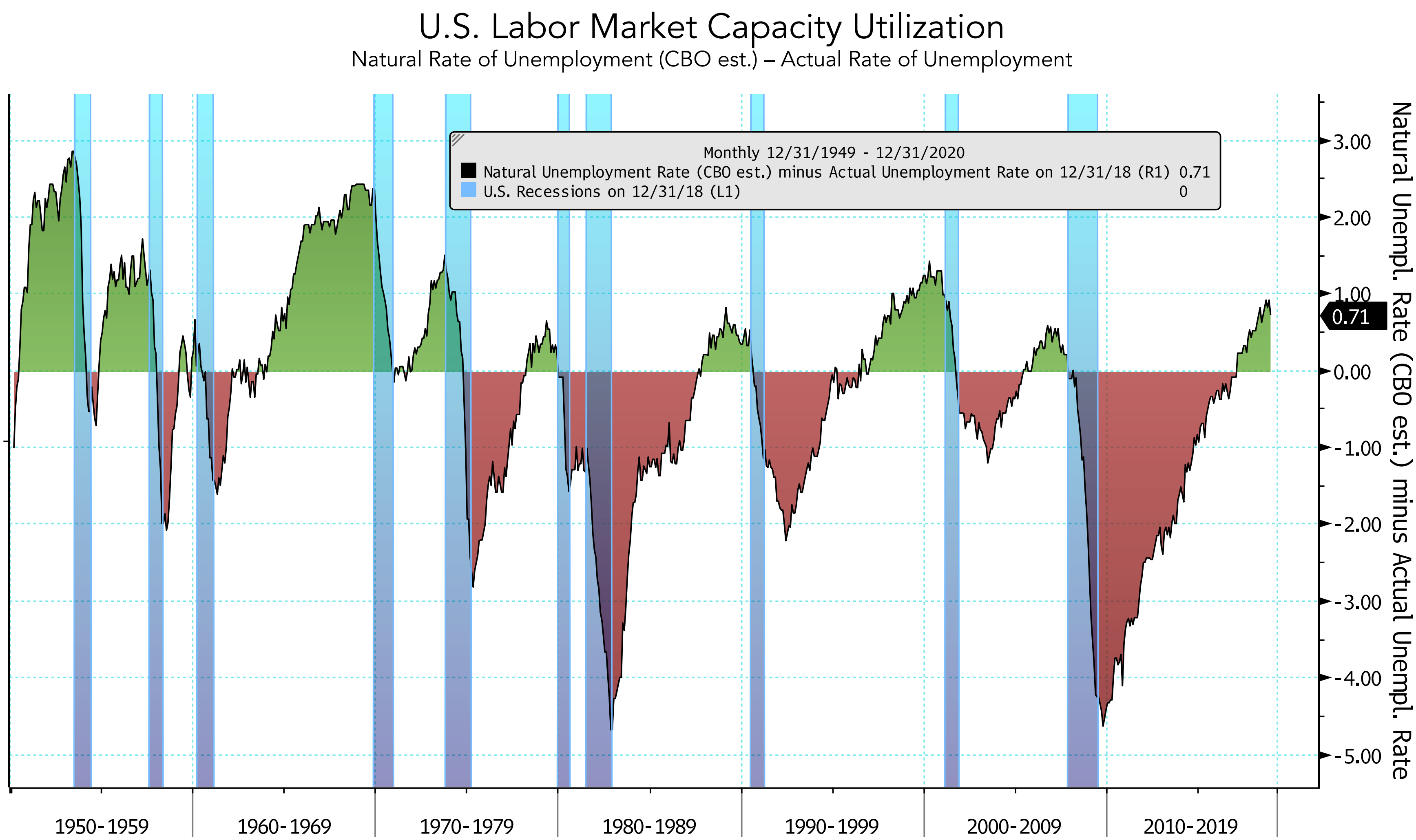
Analysis: The SF Fed unemployment rate model (grey line) has moved higher recently, which warrants caution as it might signal a cyclical turning point in the labor market. Chart Framework: I'd get incrementally negative on the business cycle outlook if the SF Fed model line trends higher on a YoY basis.



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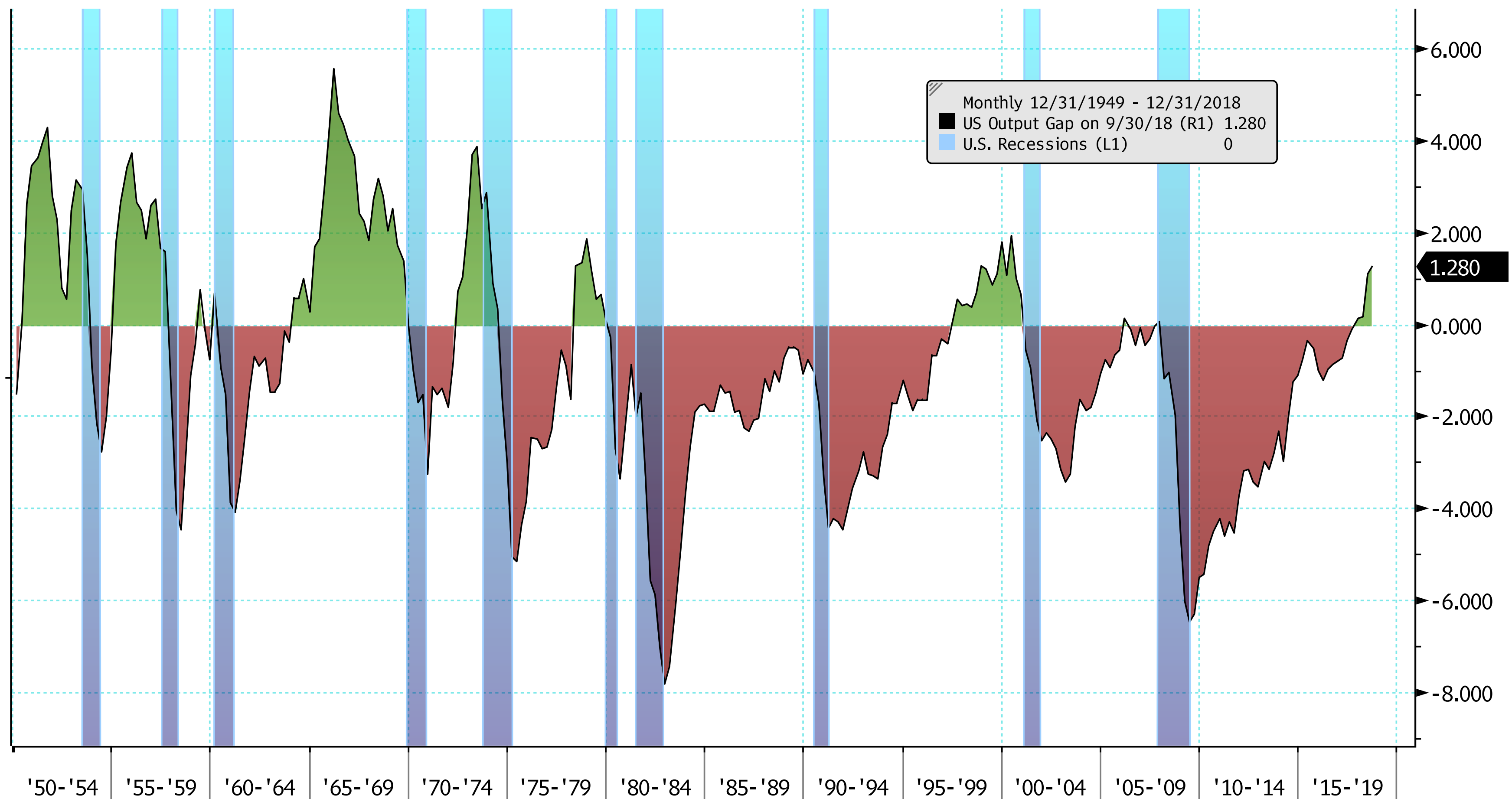
Analysis: The estimated natural unemployment rate is higher than the current unemployment rate (4.61% – 3.9%), meaning the U.S. economy is potentially running above capacity, which likely increases the risk of a recession roughly 1-5 years out.

Chart Framework: I'm currently incrementally negative on the business cycle outlook medium/longer term based on this picture, I'd get incrementally positive medium/longer term around -1.00 on the chart, which would likely only be during or after a recession.

U.S. GDP Output Gap

Actual GDP minus Potential GDP (CBO est.)



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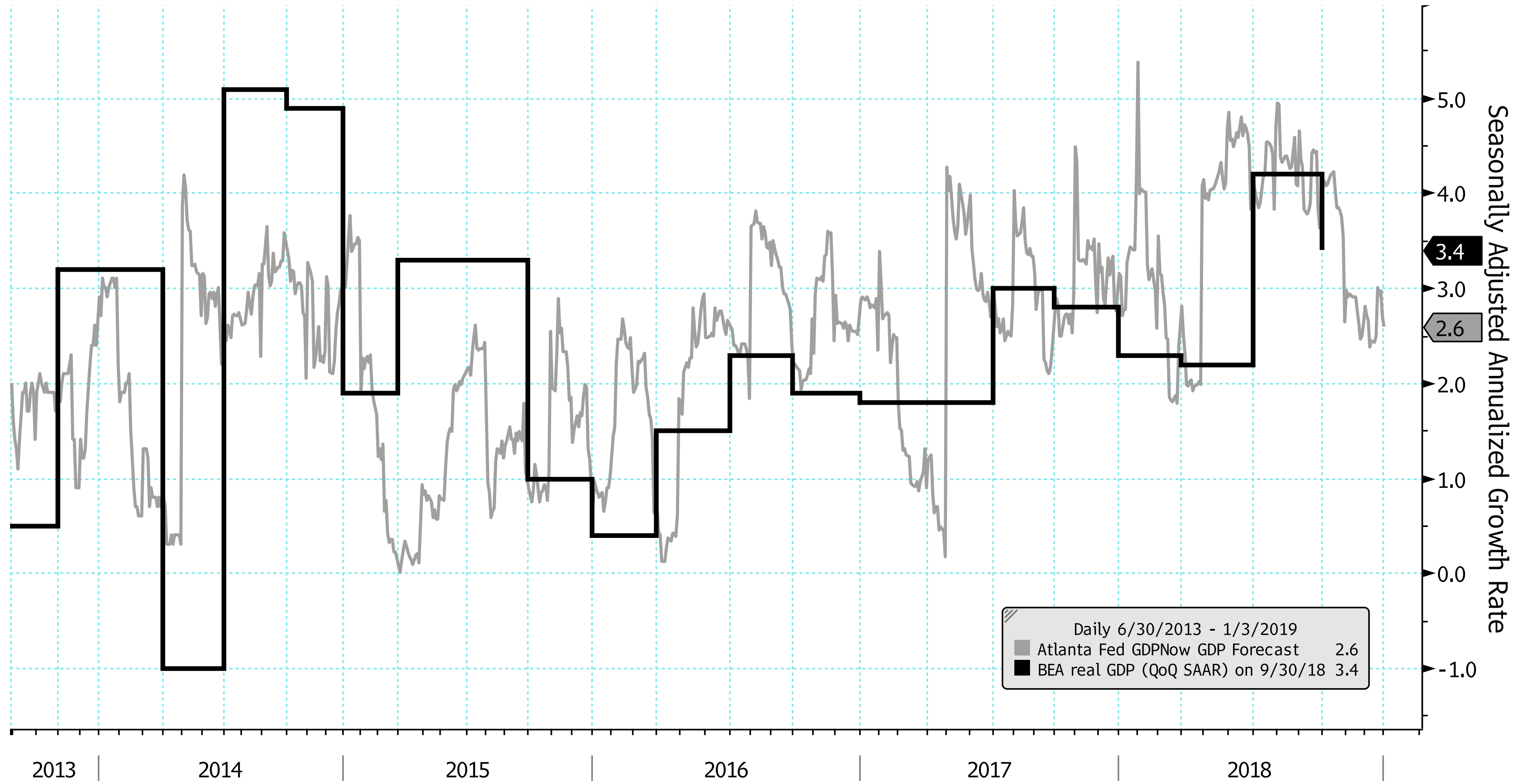
Analysis: Actual GDP is more than potential GDP (as estimated by the CBO), which suggests the expansion may be in its final stages. Chart Framework: I'm currently incrementally negative on the business cycle outlook medium/longer term based on this picture, I'd get incrementally positive medium/longer term around -2.00 on the chart, which would likely only be during or after a recession.

Atlanta Fed GDPNow GDP Forecast

GDPNow Forecast and the official QoQ SAAR from BEA



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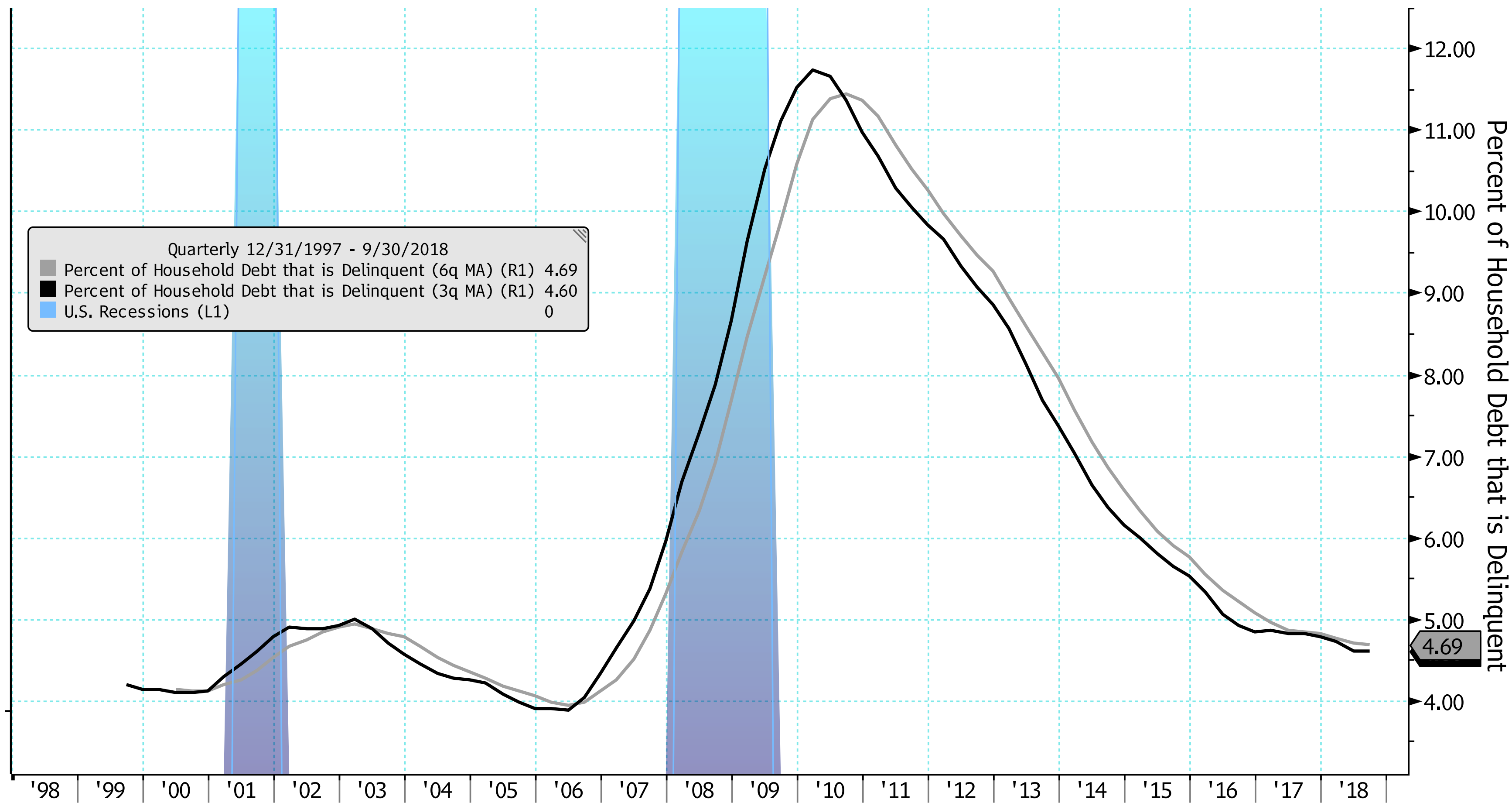
Analysis: The final Q3 GDP reading (black line) came in at 3.4%, the current forecast for Q4 GDP is 2.6%.
Chart Framework: I'd get incrementally negative on the business cycle outlook if the Atlanta Fed GDP indicator fell below zero.

U.S. Household Credit Cycle

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



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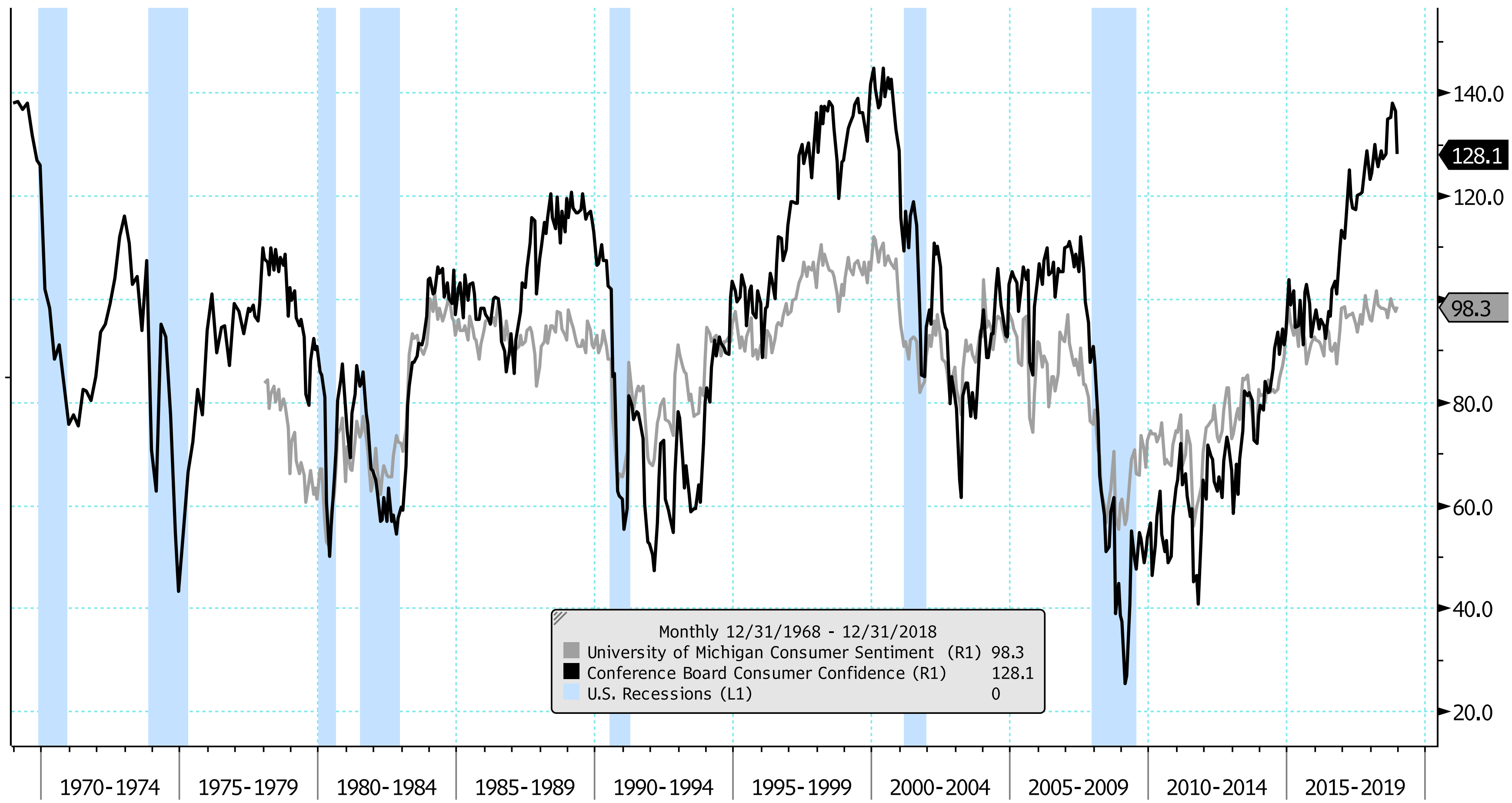
Analysis: The Q3 2018 data showed an uptick in the household delinquency rate, which is a potentially negative sign for the economy; however, the household credit cycle is still going: 3-quarter moving average (black) < 6-quarter moving average (grey). If the next data point shows a continued uptick that might be significant and could get the 3q MA to cross above the 6q MA which would be a strong late cycle indicator in my view. Chart Framework: I'd get incrementally negative on the business cycle outlook if the 3q MA crossed above the 6q MA. The Q4 2018 data comes out in late February.

U.S. Consumer Confidence

Michigan Consumer Sentiment and Conference Board Consumer Confidence



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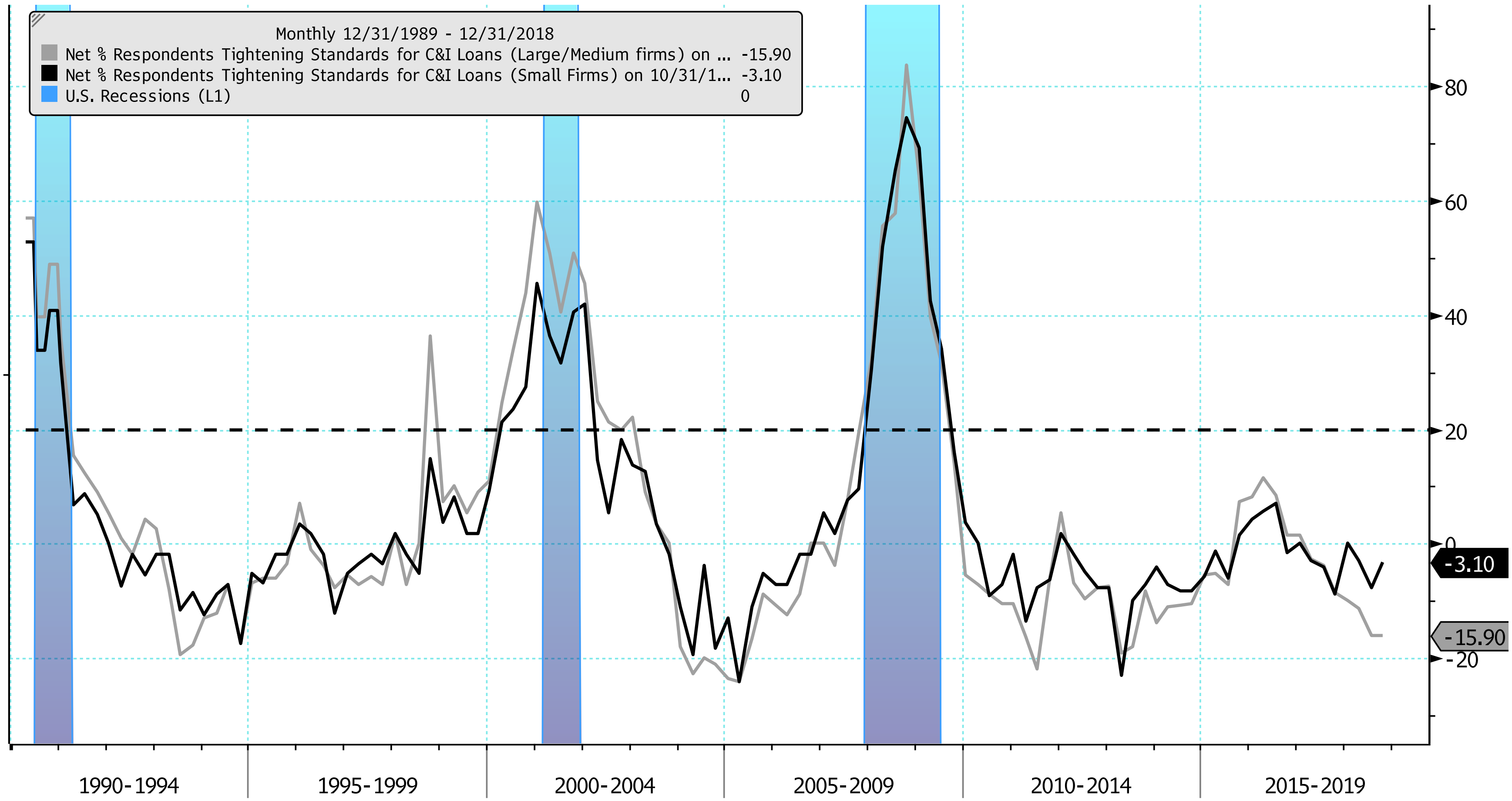
Analysis: Both measures of consumer confidence are still trending higher, a near term positive; however, at elevated levels consumer confidence measures can act as a contrarian indicator over the medium term. Chart Framework: I'd get incrementally negative on the business cycle outlook if both measures started trending lower on a YoY basis.

Bank Lending Standards

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



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Analysis: Data from the Fed's Senior Loan Officer Opinion Survey suggest bank lending standards continue to be supportive of economic activity.
Chart Framework: I'd get incrementally negative on the business cycle outlook if 20% of respondents report tightening lending standards.

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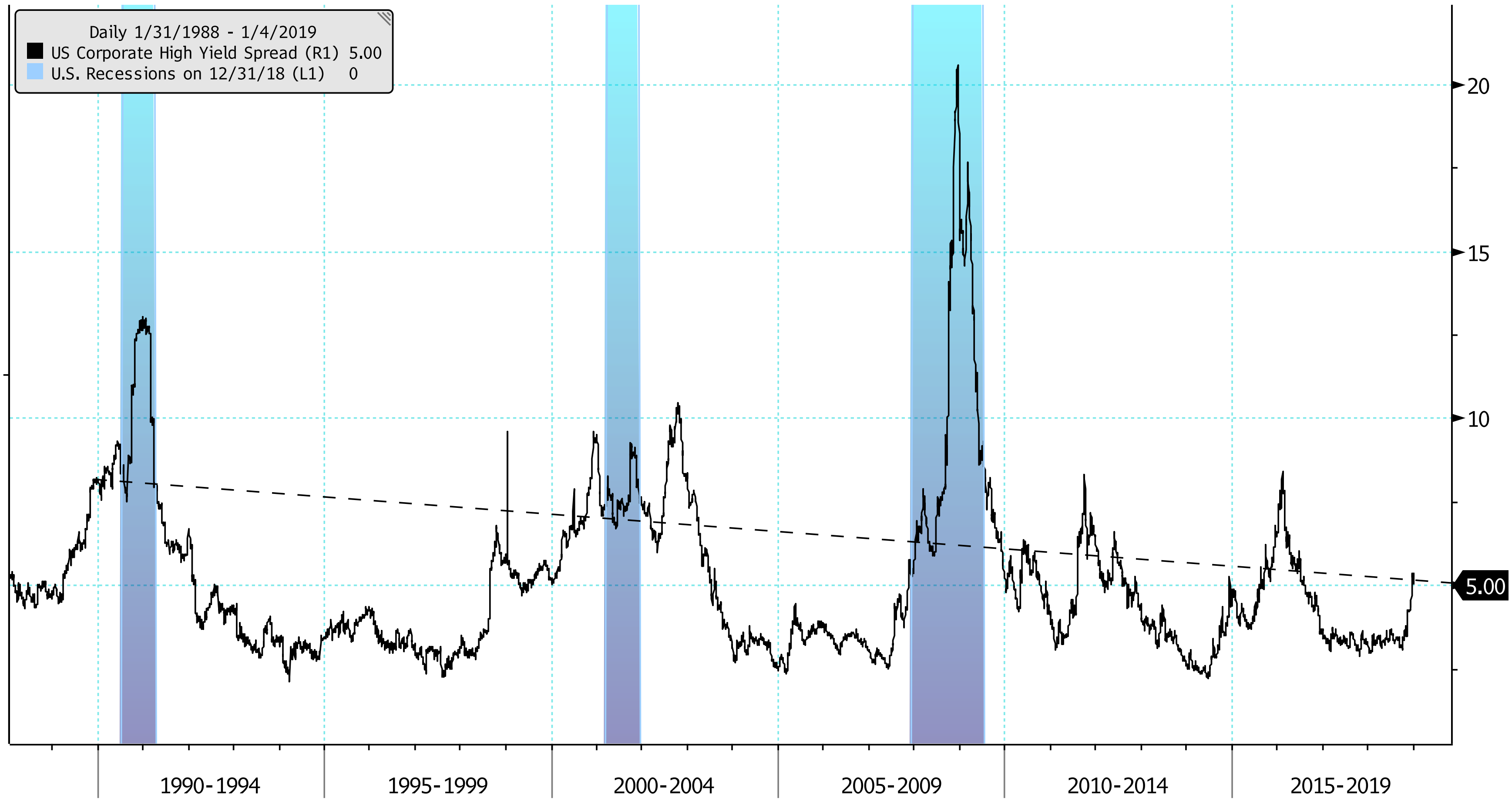
High Yield Spread

US High Yield Spread with Trend Line



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Analysis: The high yield credit spread has risen again since last month's report, clearly above its earlier multi-year range (from 2.90 to 3.75), and now right at the 5% warning level. Chart Framework: I'd get incrementally negative on the business cycle outlook if the spread moves above 5.

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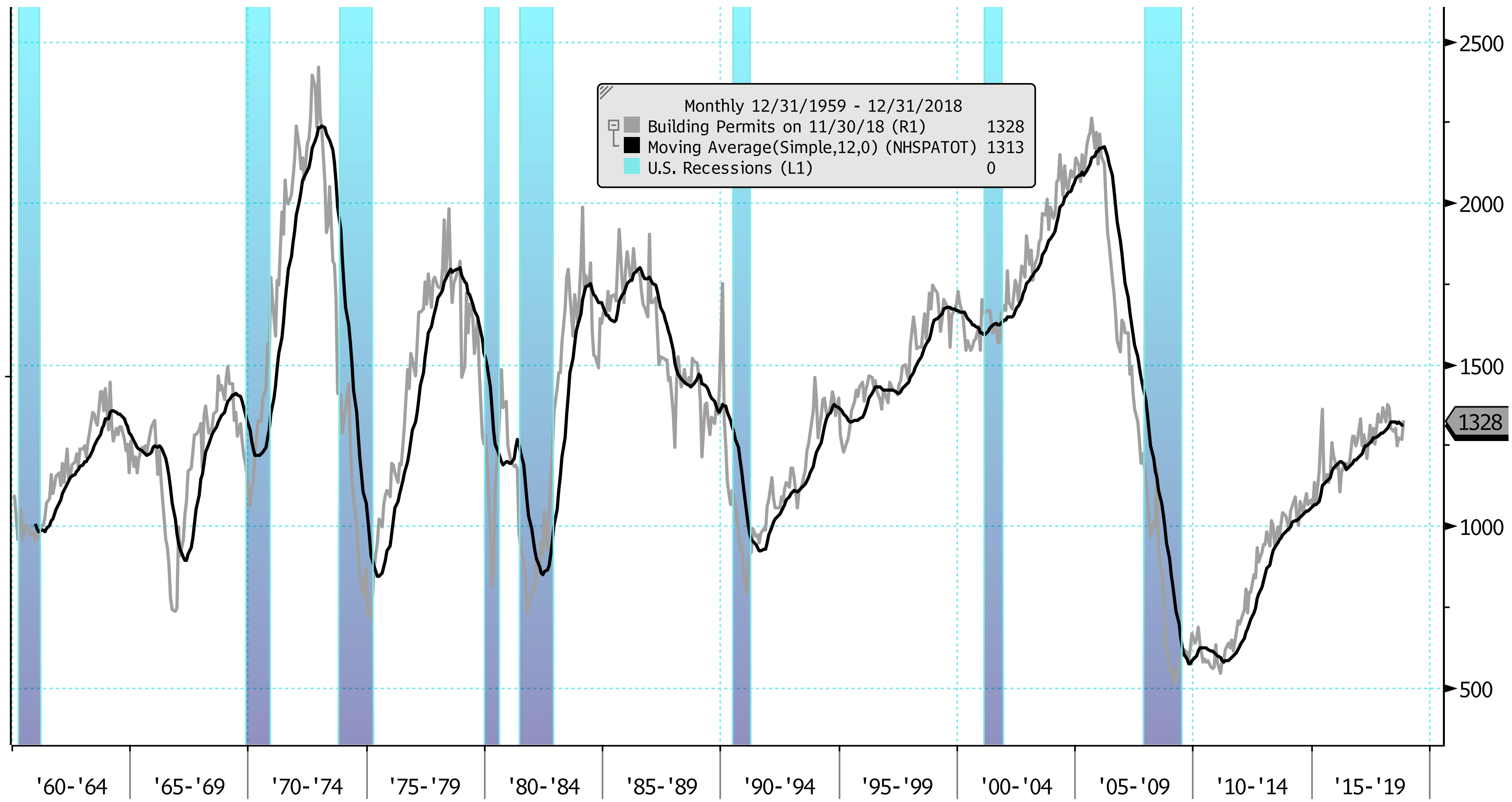
U.S. Building Permits

U.S. Building Permits and 12-month Moving Average



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Analysis: Building permits, historically a long leading indicator, are starting to look like they might be topping for the cycle- another potential late cycle indictor if they begin to trend lower in earnest. Higher mortgage rates have likely contributed to the slowing demand for housing. Framework: I would get negative if the 12-month moving average is trending down for several consecutive months.

Checklist (January 2019)

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/Negative
7	U-3 v 12m MA	Medium Term	Neutral
8	SF Fed U-3	Medium Term	Neutral/Negative
9	Labor Force Capacity Util.	Medium/Longer Term	Negative
10	Output Gap	Medium/Longer Term	Negative
11	GDP Forecast	Short Term	Positive
12	Household Credit	Medium Term	Neutral/Positive
13	U.S. Consumer	Short/Medium Term	Neutral/Positive
14	Lending Standards	Medium Term	Positive
15	High Yield Spread	Short/Medium Term	Neutral/Negative
16	U.S. Building Permits	Medium/Longer Term	Neutral
		Time Horizon	Overall Outlook on Business Cycle
		Short Term (<6 months)	Neutral/Positive with high uncertainty
		Medium/Longer Term (6m - 5 years)	Neutral/Negative with high uncertainty

Conclusion/Thoughts

There are increasing predictions from commentators that the U.S. economy is headed for imminent recession, or already in a recession. While there has clearly been some deterioration in certain economic indicators, my view remains that the U.S. economy continues to be in an economic expansion.

Data developments since last month's report have generally been negative, but overall the economic expansion looks set to continue over the next few months, and in general until further notice. All of the presented charts and concepts are somewhat inter-related, as is the economy in general, so the idea is to have some different data points to cross-reference- in my view no one indicator can be looked at in isolation.

The main two indicators that are keeping me positive on the economy: the LEI Index still looks reasonably strong, and the yield curve still has not yet inverted- it's worth keeping in mind that yield curve inversion is historically a medium term indicator (6-24 months) with respect to the beginning of a subsequent recession. Regarding the global backdrop, I'm concerned about the weakness in the Chinese data specifically, which continues to deteriorate.

Recession risk over roughly the 1-5 year period is likely elevated- with measures suggesting the economy is potentially operating above capacity, namely with respect to the output gap and labor force capacity utilization. Operating above capacity can persist for some time but is by definition unsustainable over the longer term, however there are uncertainties with regards to the estimates for potential GDP and the natural rate of unemployment. Also, some longer leading indicators such as auto sales and building permits appear to be rolling over, which adds to the evidence that the economy is in a late cycle phase.

Even given some of these late cycle indications, there seems to be some slack remaining in the labor market, which suggests that the economic cycle can continue for a little while longer.

To reiterate, taken together I think the U.S. business cycle picture is still generally positive, although there is greater uncertainty and we have clearly seen a slowdown in growth momentum. On balance, based on the charts and framework presented (which inevitably may not capture all possible risk factors in real-time), it seems more likely than not that the U.S. economic expansion continues.

-Nick Reece, CFA

Disclosure
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