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Guggenheim Partners

Q4 2018 IACFM Meeting

U.S. Economic and Policy Outlook

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Global Chief Investment Officer

October 2018

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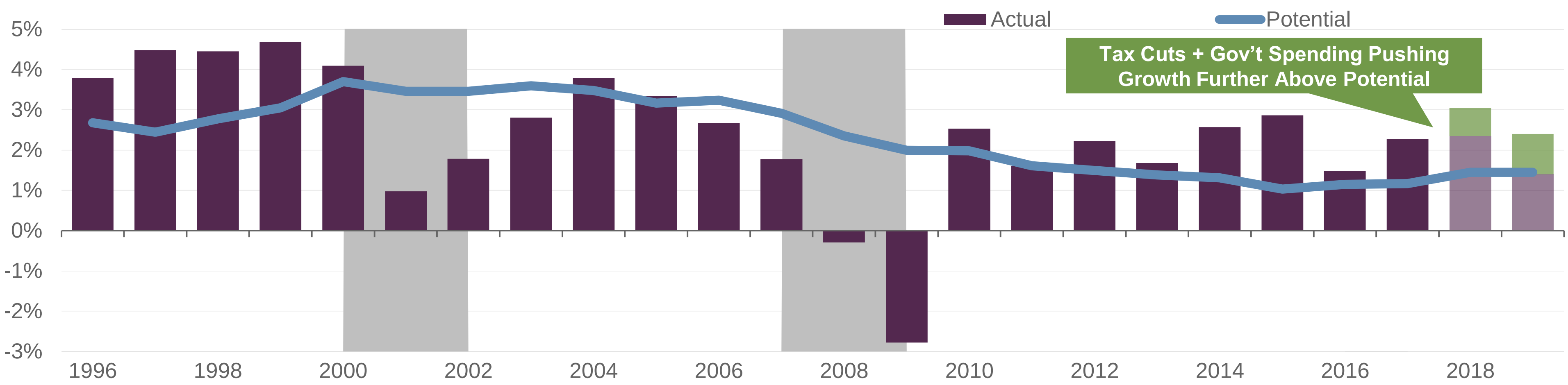
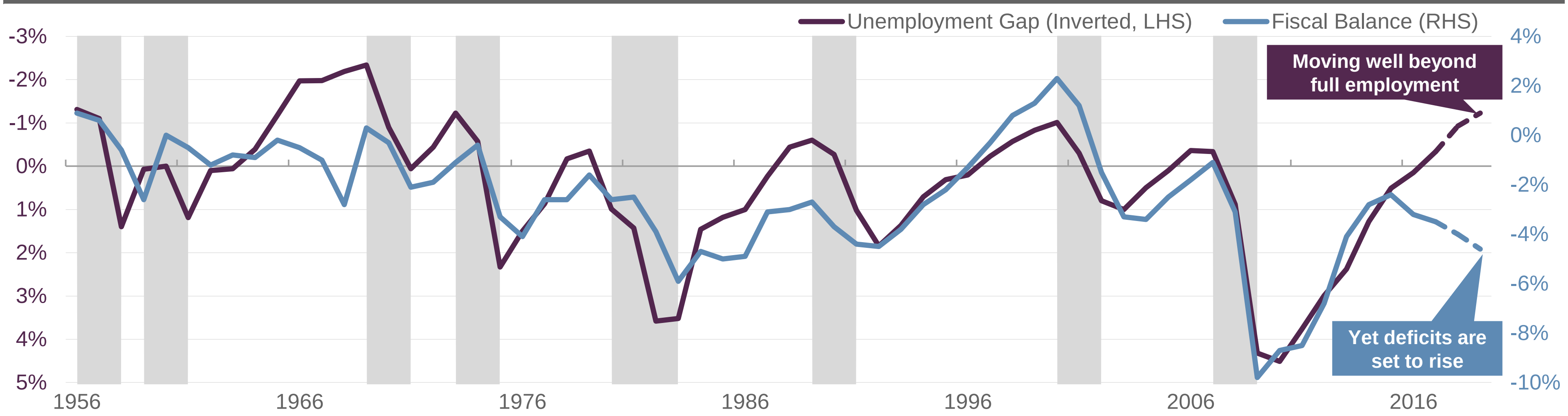
The U.S. Economy is in the Overheating Stage

U.S. Real GDP Growth vs Potential GDP Growth



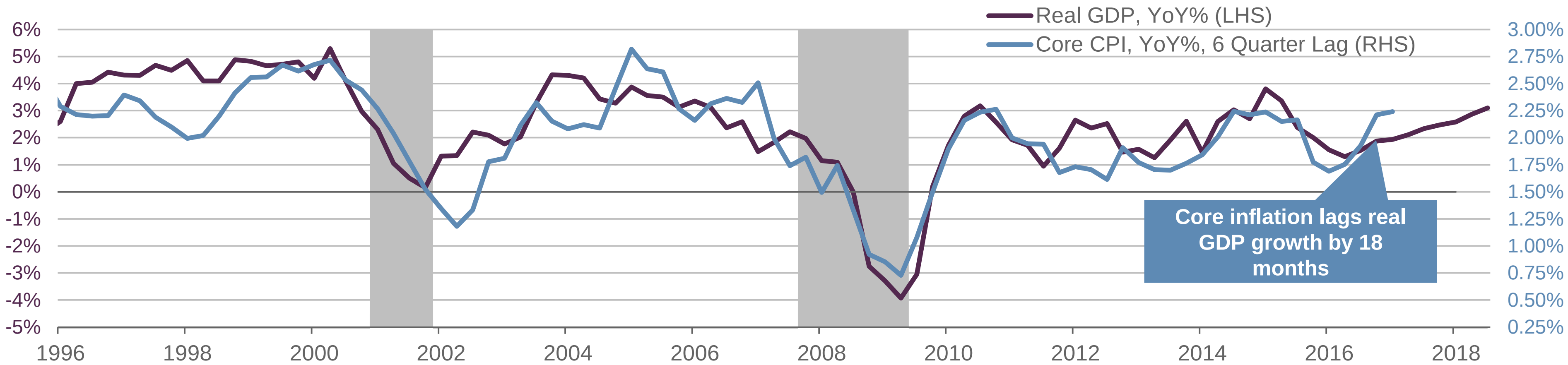
Unemployment Gap and Fiscal Balance as a Percent of GDP



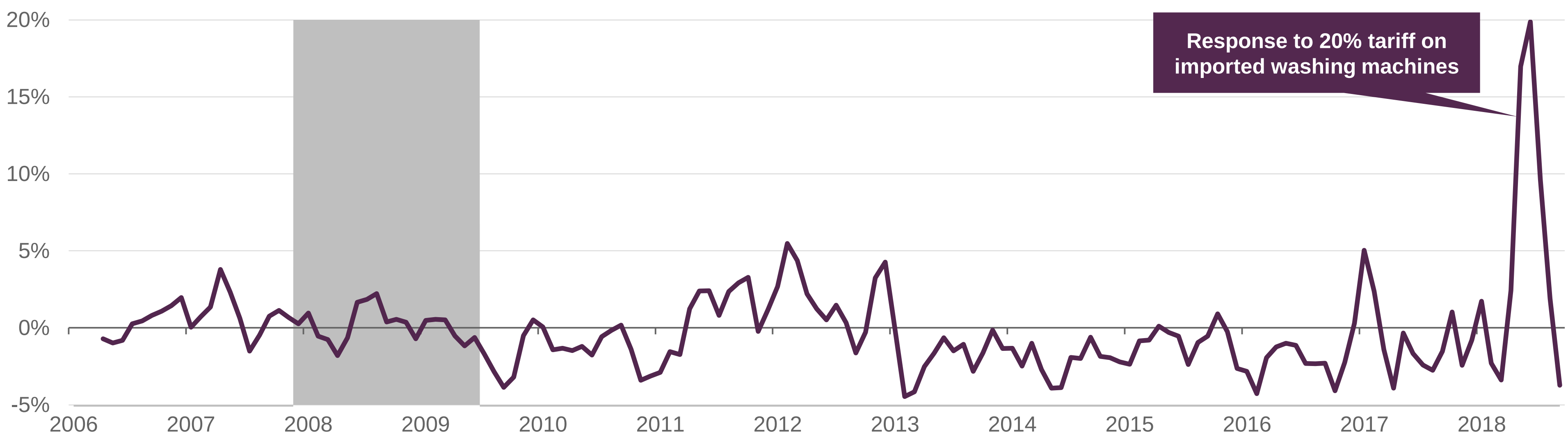
Source: Bloomberg, OECD, Haver Analytics, CBO, Guggenheim Investments. Data as of 12/31/2017.

Faster Growth Has Boosted Core Inflation, Tariffs Will Exacerbate Inflationary Pressures

Core Inflation Lags Real GDP Growth By Six Quarters



CPI Laundry Equipment, 3 Month Percent Change

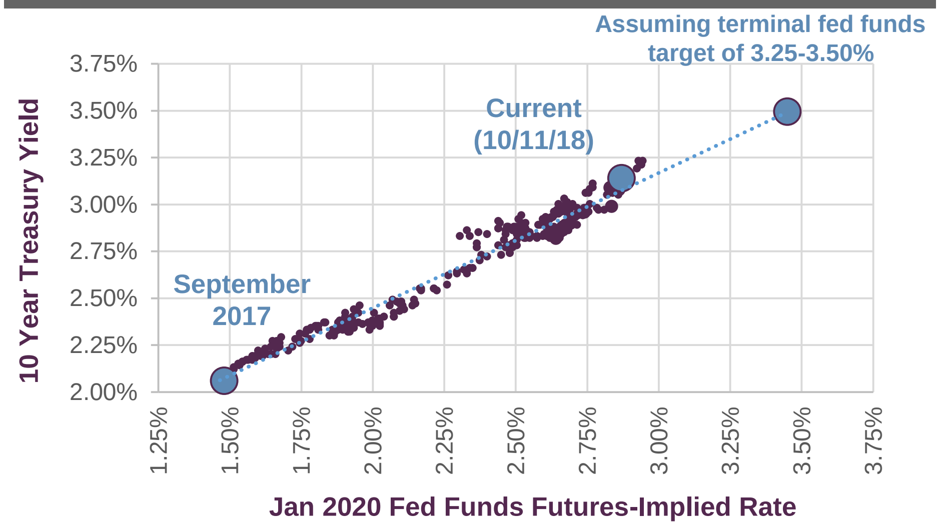


Source: Guggenheim Investments, Haver Analytics, BEA. Data as of 09/30/2018.

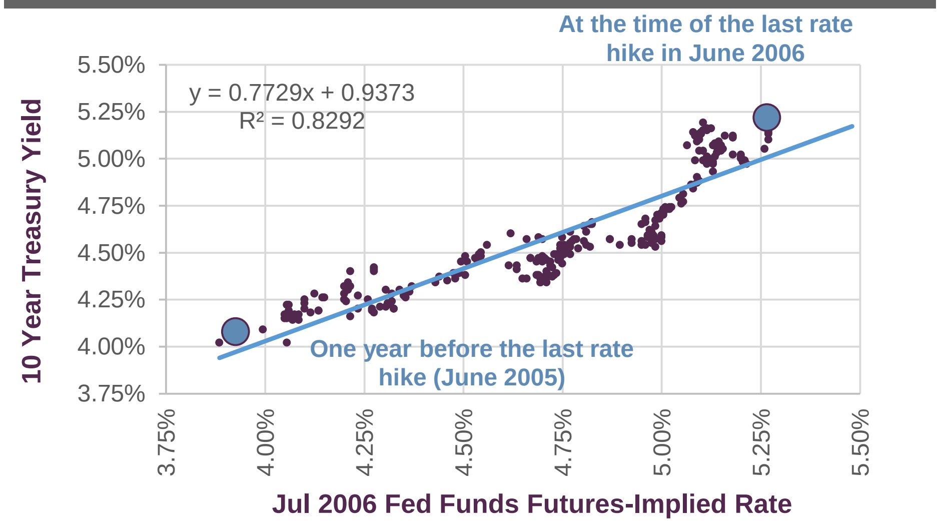
Global Financial Conditions Will Tighten as QE Goes Into Reverse

Net Monthly Central Bank Purchases of Securities, in USD Billions (Includes Fed, ECB, BoJ, BoE)

10 Year Treasury Yields vs "Terminal Fed Funds" as Proxied by the January 2020 Fed Funds Futures Contract



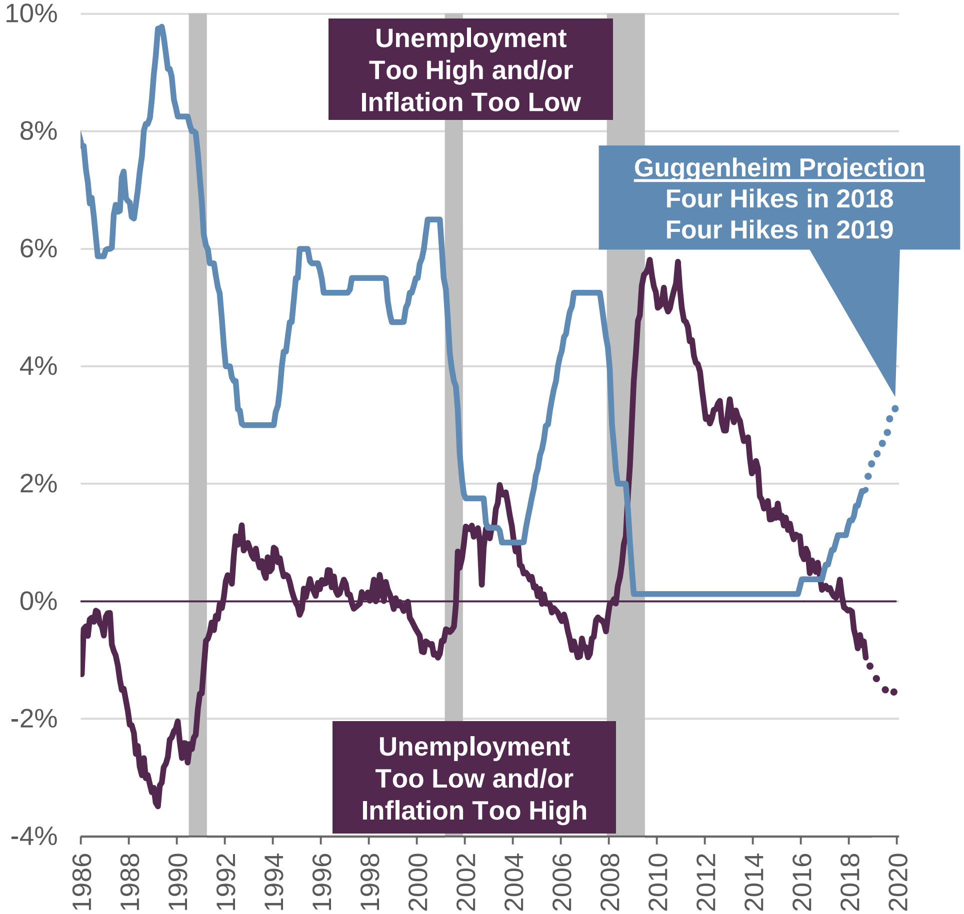
10 Year Treasury Yields vs Actual Terminal Fed Funds as per the July 2006 Fed Funds Futures Contract



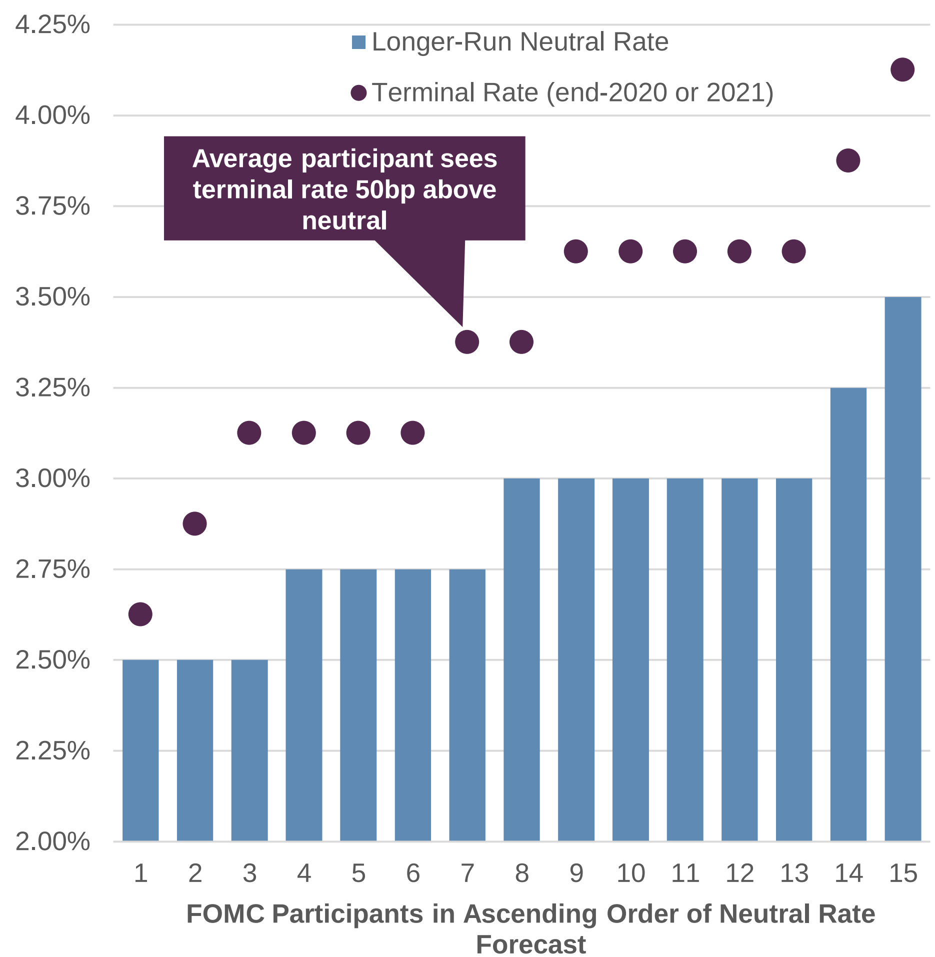
Source: Guggenheim Investments, Haver Analytics, Federal Reserve Bank of New York. Data as of 09/30/2018. Note: Quarterly average. Based on constant 10/2017 exchange rates.

The Fed Will Keep Hiking as They Overshoot the Dual Mandate

Federal Reserve Dual Mandate Shortfall and Federal Funds Target Rate



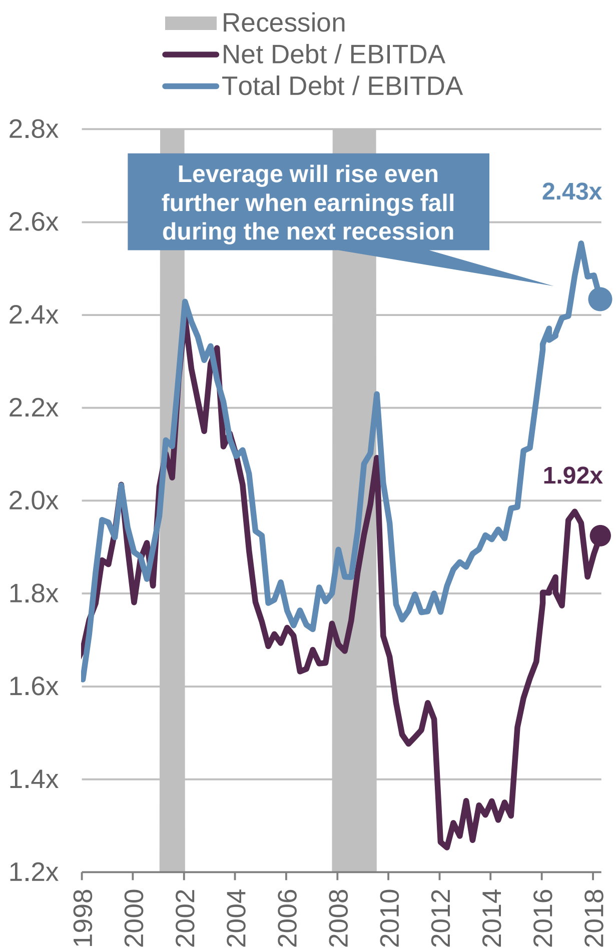
Terminal Fed Funds Rate Projections Relative to Neutral (September 2018 SEP)



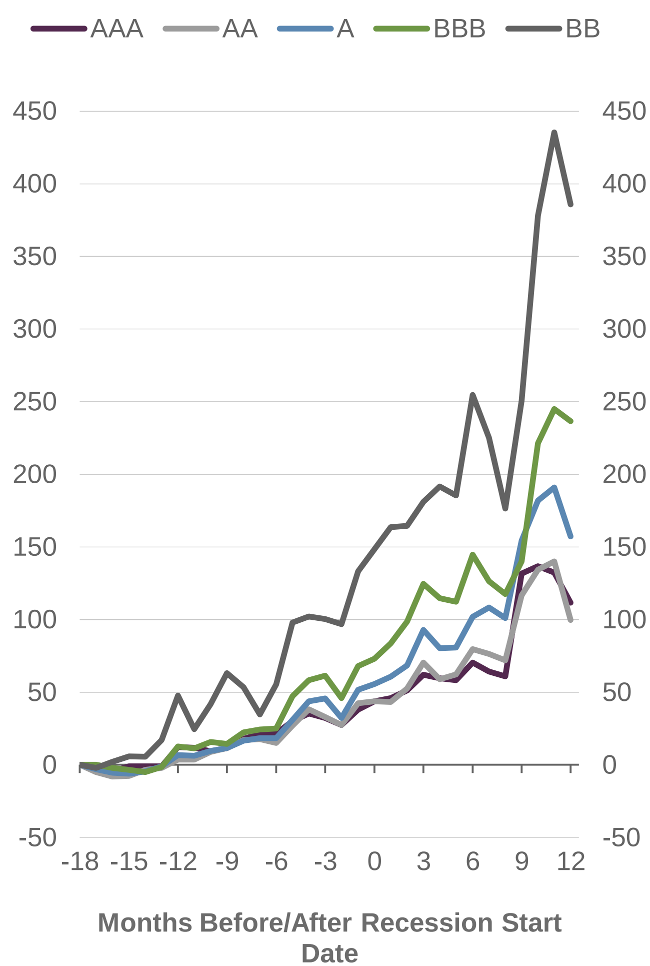
Source: Haver Analytics, Congressional Budget Office, Guggenheim Investments. Data as of 08/31/2018. Combined dual mandate shortfall adds the deviation of core PCE inflation from the Fed's 2 percent objective and the deviation of the unemployment rate from the CBO's estimate of the natural rate of unemployment. Terminal Fed Funds rate projections from the Summary of Economic Projections released in September 2018. Note: Excludes Pres. Bullard, who does not submit long-run projections or forecast a change in policy.

A Restrictive Fed Will be Problematic For Overleveraged Companies

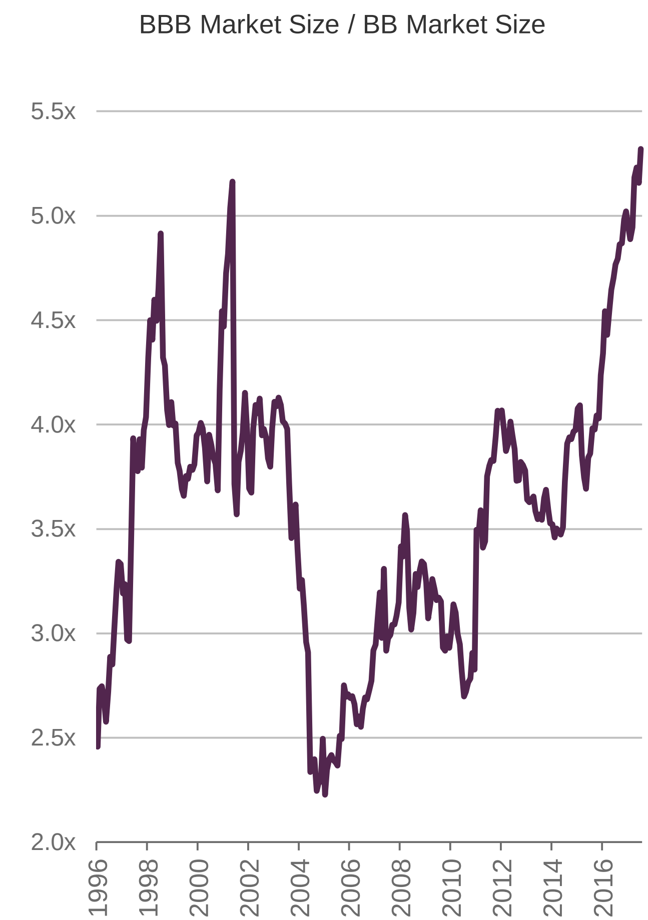
Investment-Grade Corporate Credit Gross and Net Leverage Multiples



Corporate Spreads: Cumulative Change in Basis Points Around Recessions, Average of Last Three Cycles*



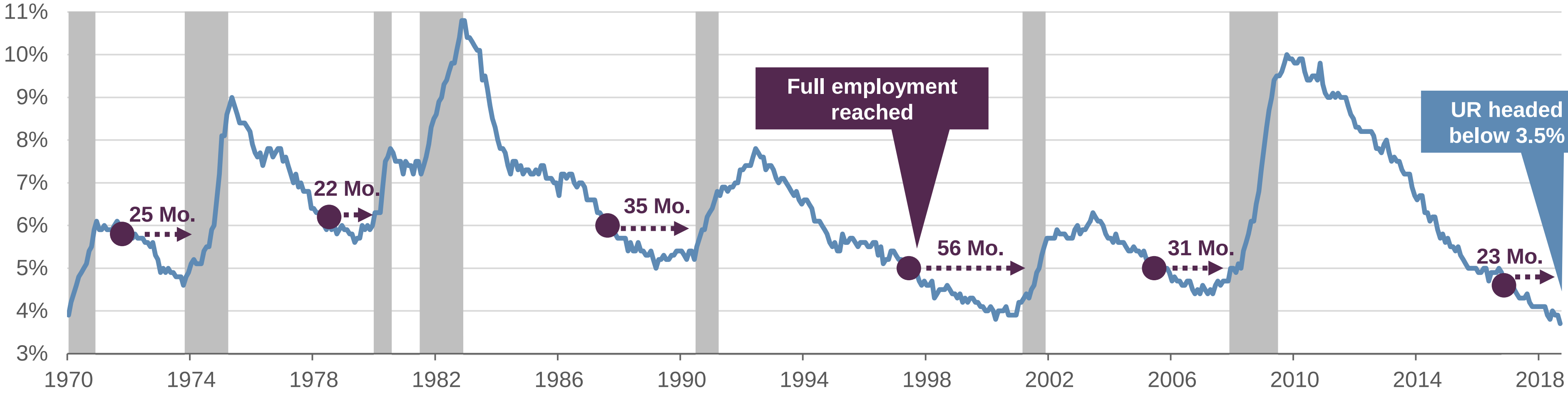
Ratio of BBB-Rated to BB-Rated Corporate Bonds Outstanding



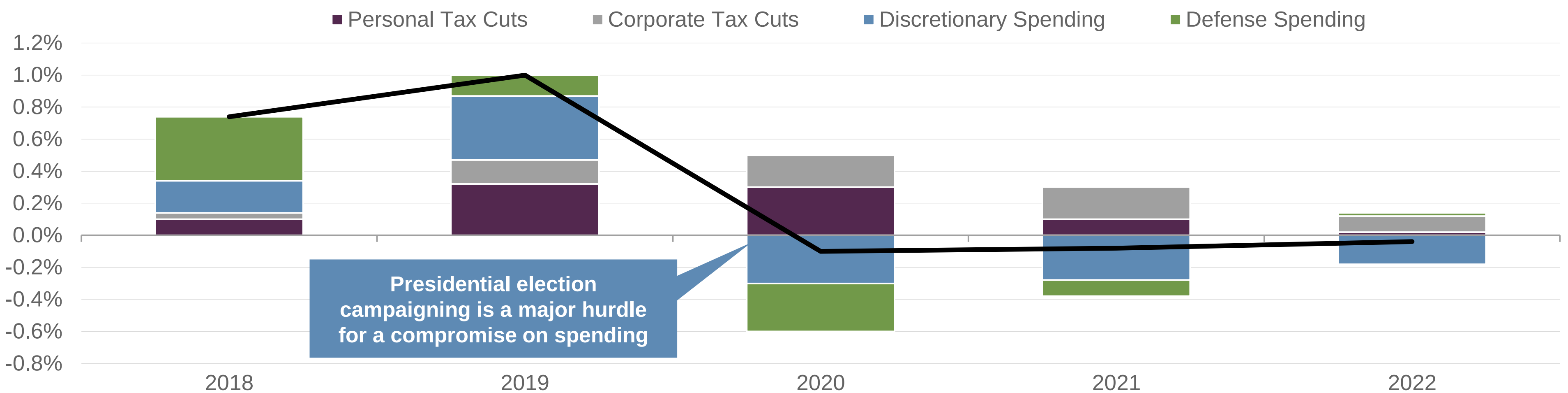
Source: Morgan Stanley Research, Bloomberg Barclays, ICE BofA Merrill Lynch, Guggenheim. Leverage multiples as of 06/30/2018. Credit spreads as of 08/02/2018. Includes recessions beginning in 1990, 2001, and 2007. BBB/BB market size ratio as of 6/30/2018.

Tight Labor Market and Fading Fiscal Impulse Supports Our 2020 Recession Forecast

U.S. Unemployment Rate, with Months to Start of Next Recession After Full Employment Was Reached



U.S. Fiscal Impulse: Contribution to Real GDP Growth, in Percentage Points

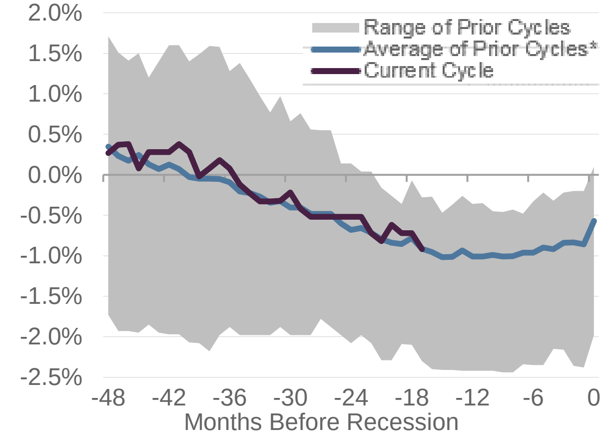


Source: Guggenheim Investments, BLS, Haver Analytics, Citi, Congressional Budget Office. Unemployment rate data as of 09/30/2018. Fiscal impulse data bottom data as of Feb 2018.

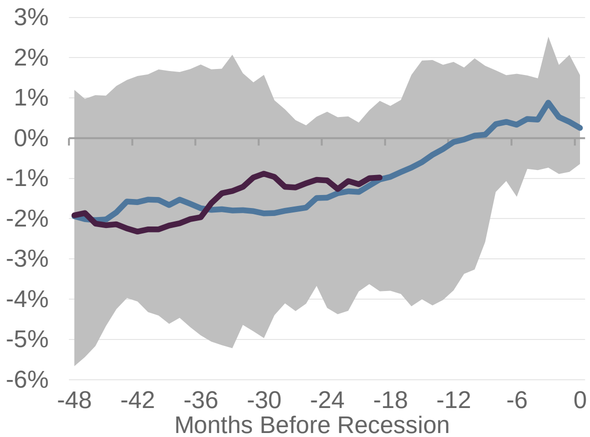
Our U.S. Recession Dashboard Points to Recession in H1 2020

Assumes Current Cycle Ends in February 2020

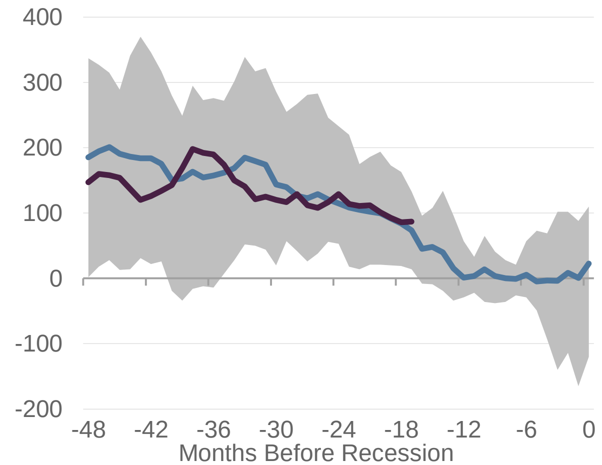
Unemployment Gap (Unemployment Rate - Natural Rate of Unemployment)



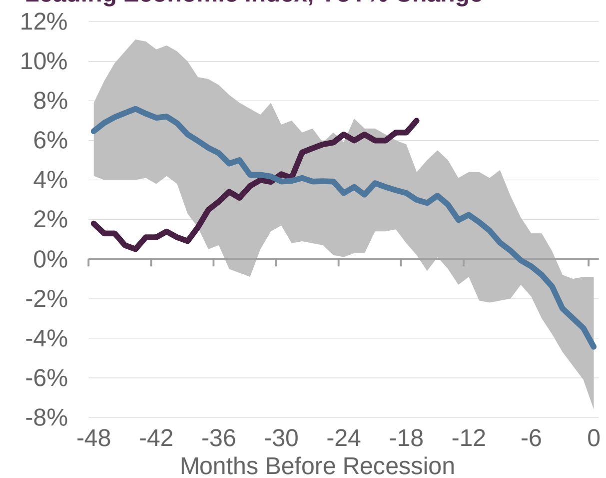
Real Fed Funds Rate - Natural Rate of Interest (r*)



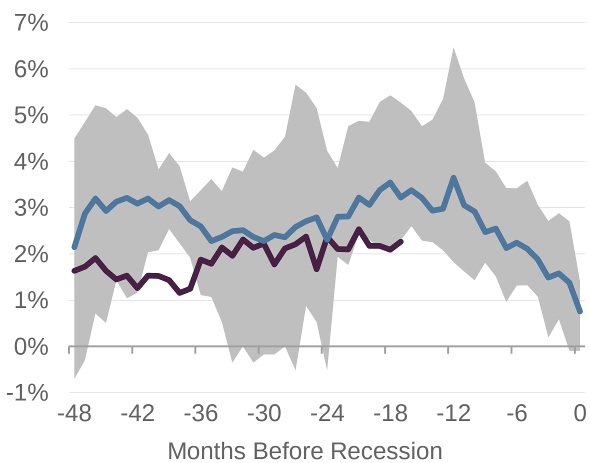
3m-10Y Treasury Yield Curve (bps)



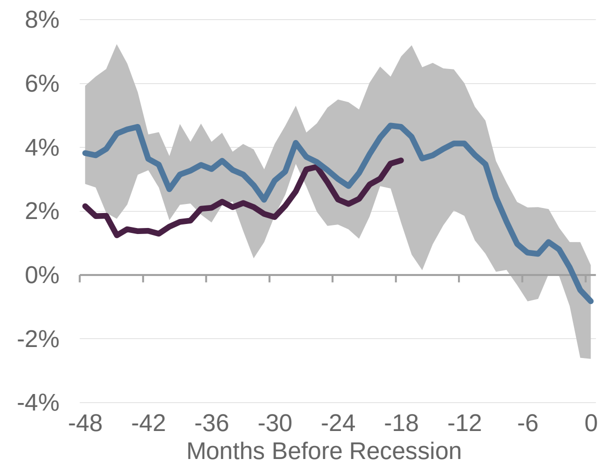
Leading Economic Index, YoY% Change



Aggregate Weekly Hours, YoY% Change



Real Retail Sales, YoY% Change



Source: Haver Analytics, Bloomberg, Guggenheim Investments. Data as of 08/31/2018 for real funds less natural rate, 09/30/2018 for others. *Note: includes cycles ending in 1970, 1980, 1990, 2001, and 2007.

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US financial vulnerabilities

Paul Tudor Jones

October 24th, 2018

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PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS, WHICH MAY VARY.

Key questions

- What are your views on current valuations in U.S. Treasury, equity, credit, and real estate markets?
- How has the recent rise in interest rates impacted valuations and what are the implications for the economy and financial markets?

Approach

- It is the combination of asset price overvaluation, excessive leverage, and weakened market structure that makes a financial system very vulnerable to shocks

> *"When asset prices are appreciating rapidly and expected to continue to do so, borrowers and lenders are more willing to accept higher degrees of risk and leverage."*
>
> *S. Fischer, 2017*

- This presentation tries to assess vulnerabilities through the lens of asset price valuation, leverage, and market micro-structure, and discuss how rising interest rates feed along these three axis to impact the economy

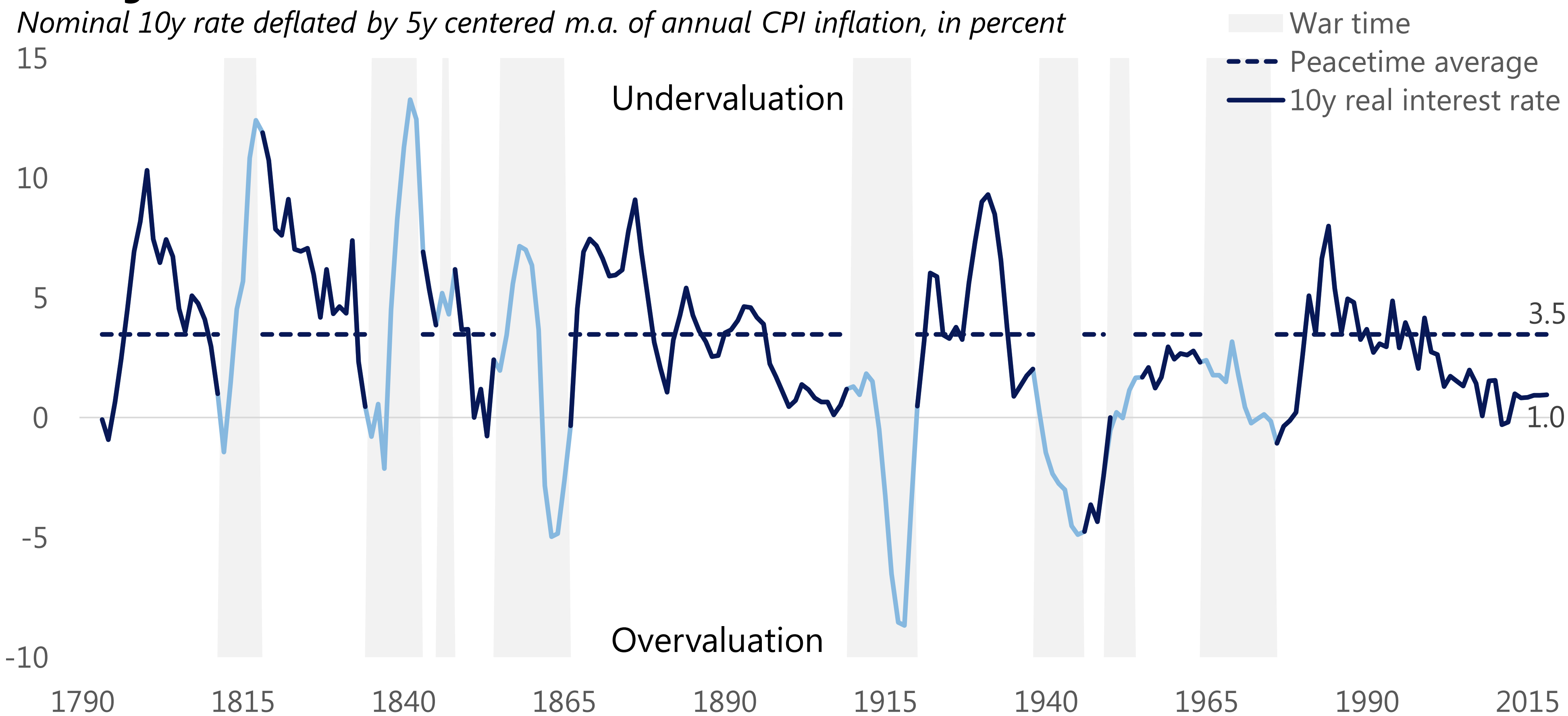
Contents

Asset price valuation

Bond valuation: 10y real yields are very low, 250bp below the long-term peace-time average, or in the 80th percentile of overvaluation

US long-term real interest rate

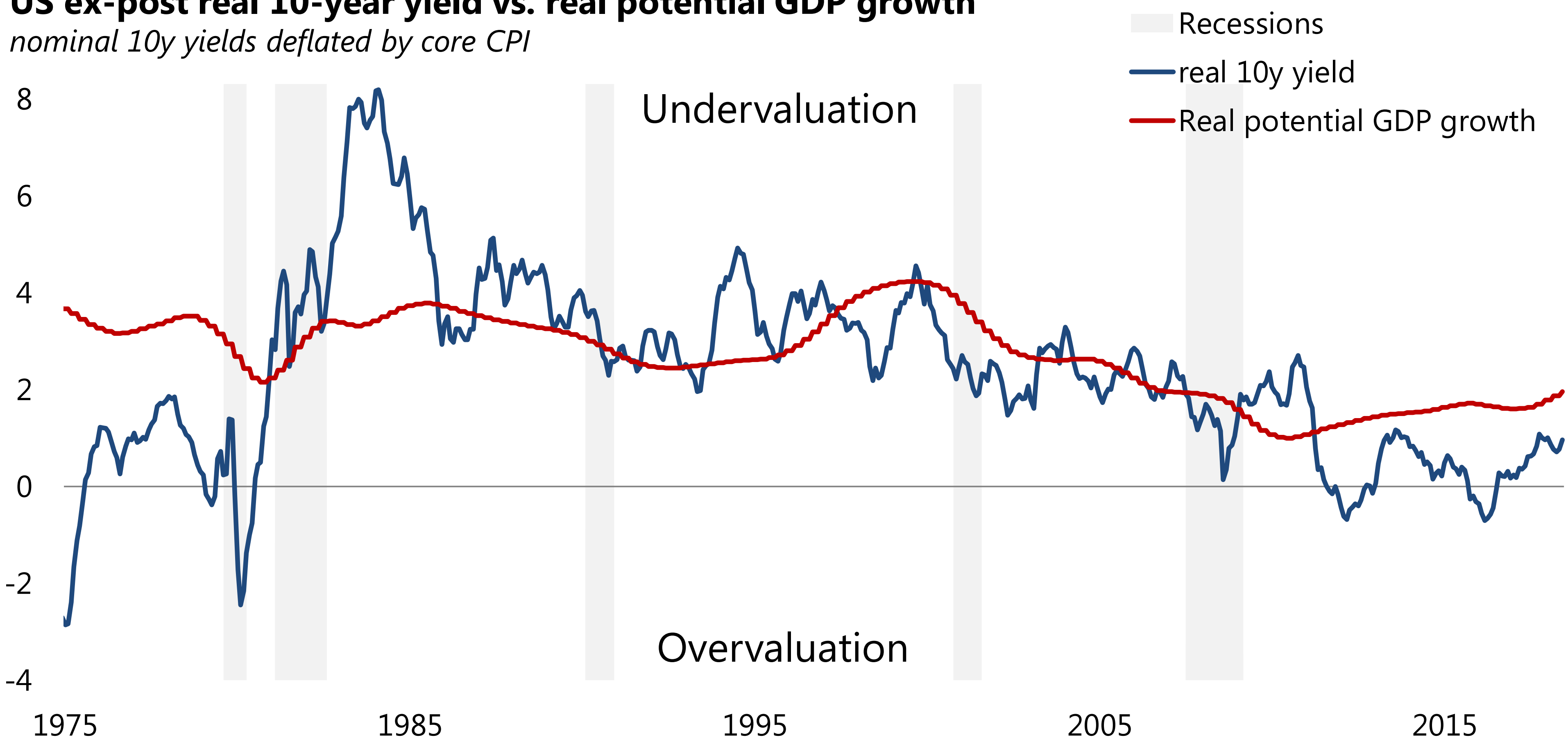
Nominal 10y rate deflated by 5y centered m.a. of annual CPI inflation, in percent



Bond valuation: 10 year real yields are currently some 100bp below potential real GDP growth, or in the 70th %-ile of overvaluation since the Vietnam war[1/]

US ex-post real 10-year yield vs. real potential GDP growth

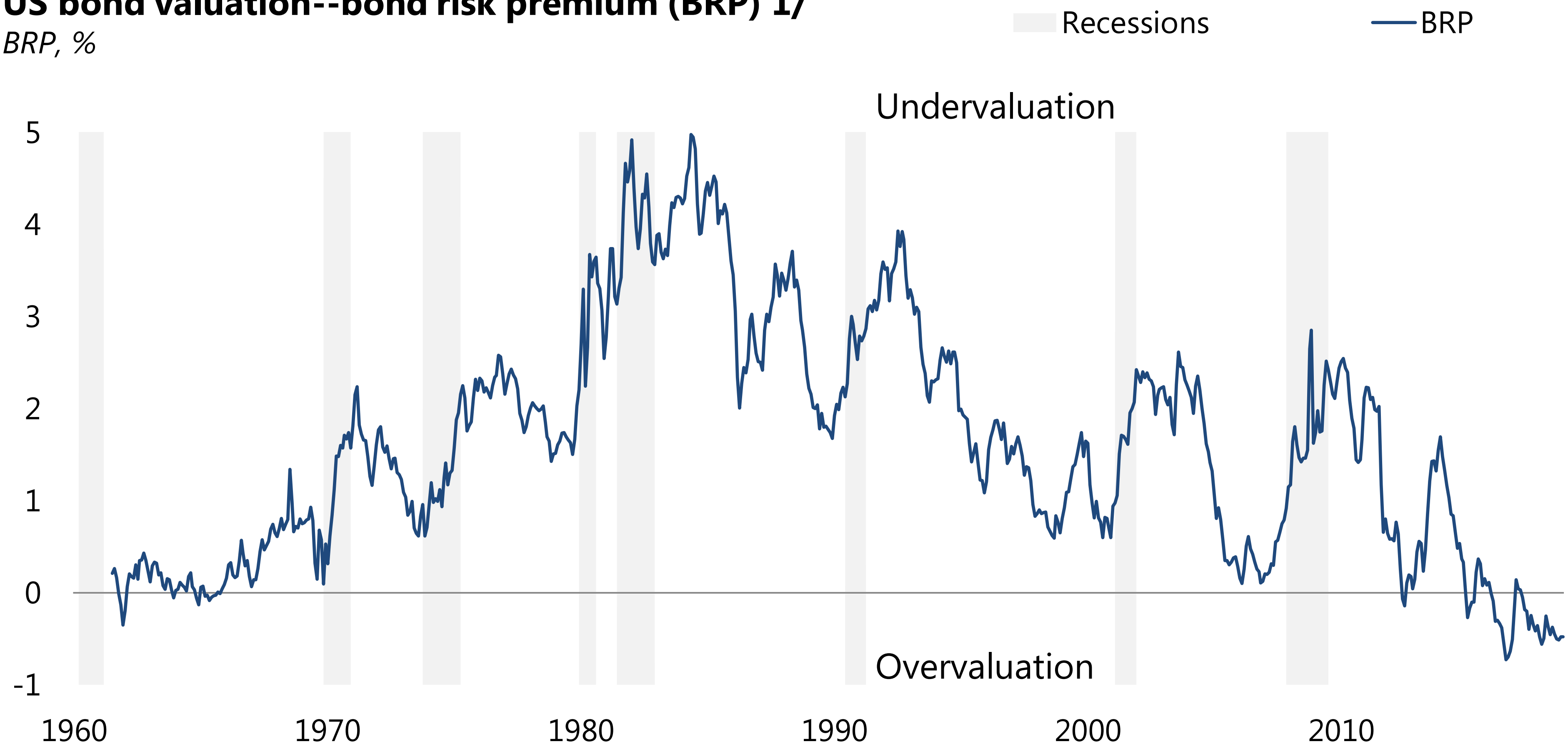
nominal 10y yields deflated by core CPI



1/ 70th percentile overvaluation refers to the spread between real potential growth (CBO) and real 10y yields

Bond valuation: the 10-year term premium is at historic lows, in the 99th percentile of overvaluation

US bond valuation--bond risk premium (BRP) 1/
BRP, %

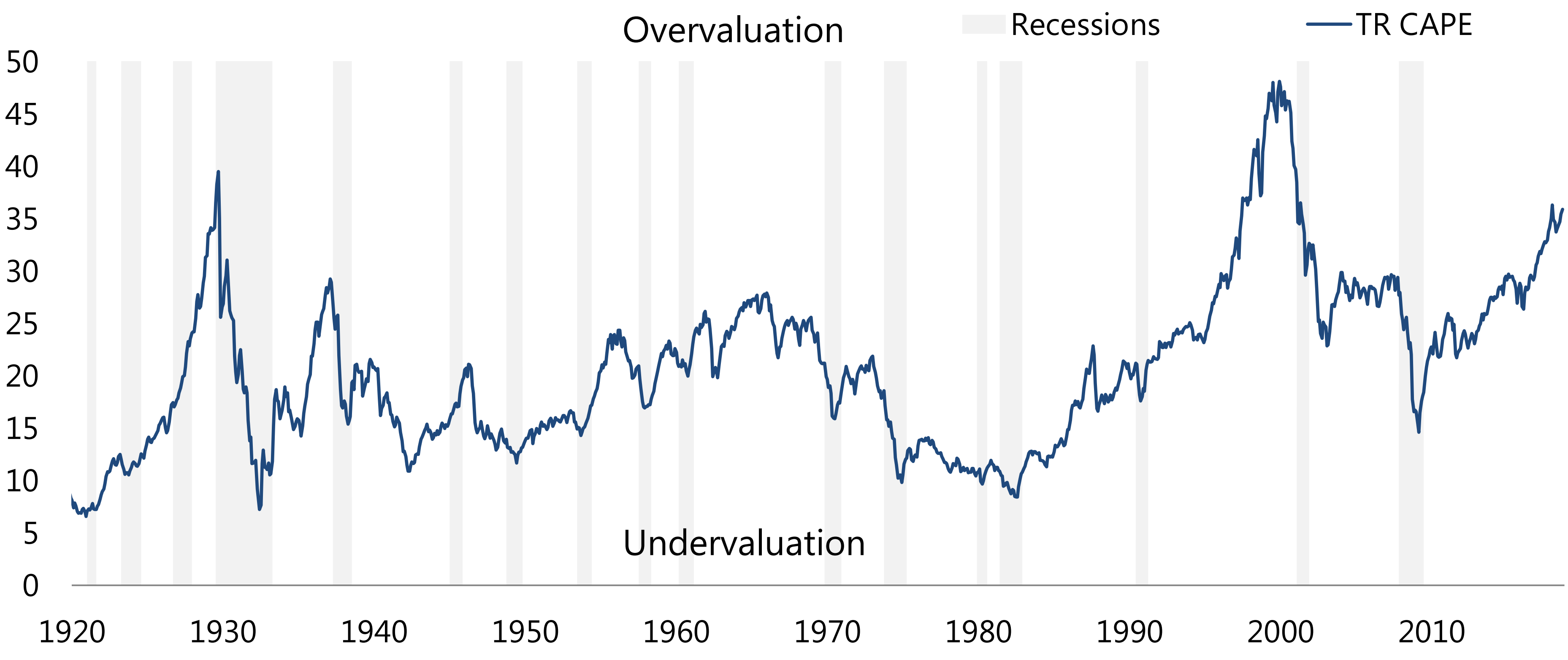


1/ BRP = compensation required to hold a bond above & beyond the expected path of nominal interest rates. This is proxied by the Adrian-Crump-Mooench 10-year term premium. https://www.newyorkfed.org/research/data_indicators/term_premia.html. Source: Goldman Sachs

Equity valuation: At 35x, Shiller's Cyclically-Adjusted P/E ratio is at levels only exceeded in 1929 and 2000, or in the 97th percentile of overvaluation

US equity valuation: cyclically-adjusted total return P/E ratio 1/

Index

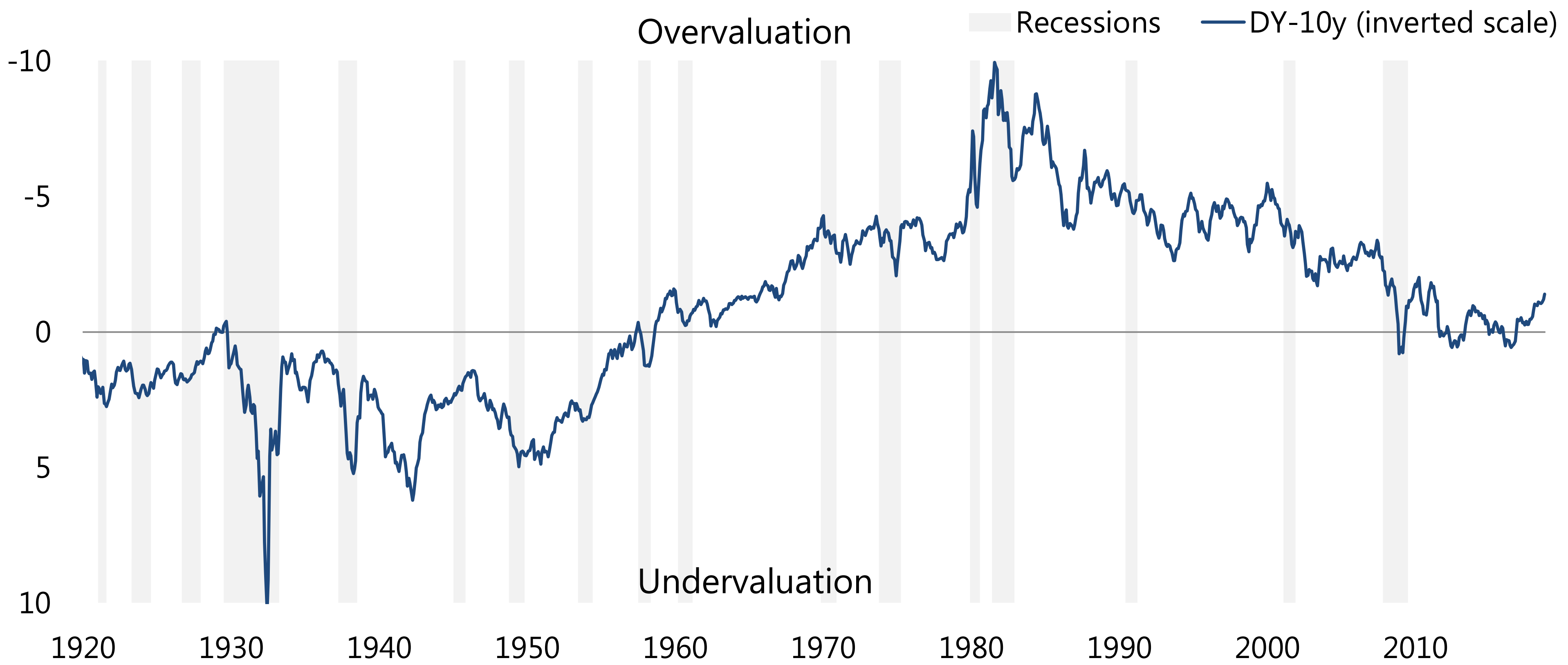


1/ TR CAPE = Price earnings ratio based on average inflation-adjusted earnings from the previous 10 years; this indicator is adjusted to account for share repurchases by reinvesting dividends into the price index and appropriately scaling the earnings per share. http://www.econ.yale.edu/~shiller/data.htm

Equity valuation: dividend yield (1.8%) is below 10y yield (3.2%) by 1.4%age pts (shown on an inverted scale below), implying a 56th %-ile of overvaluation

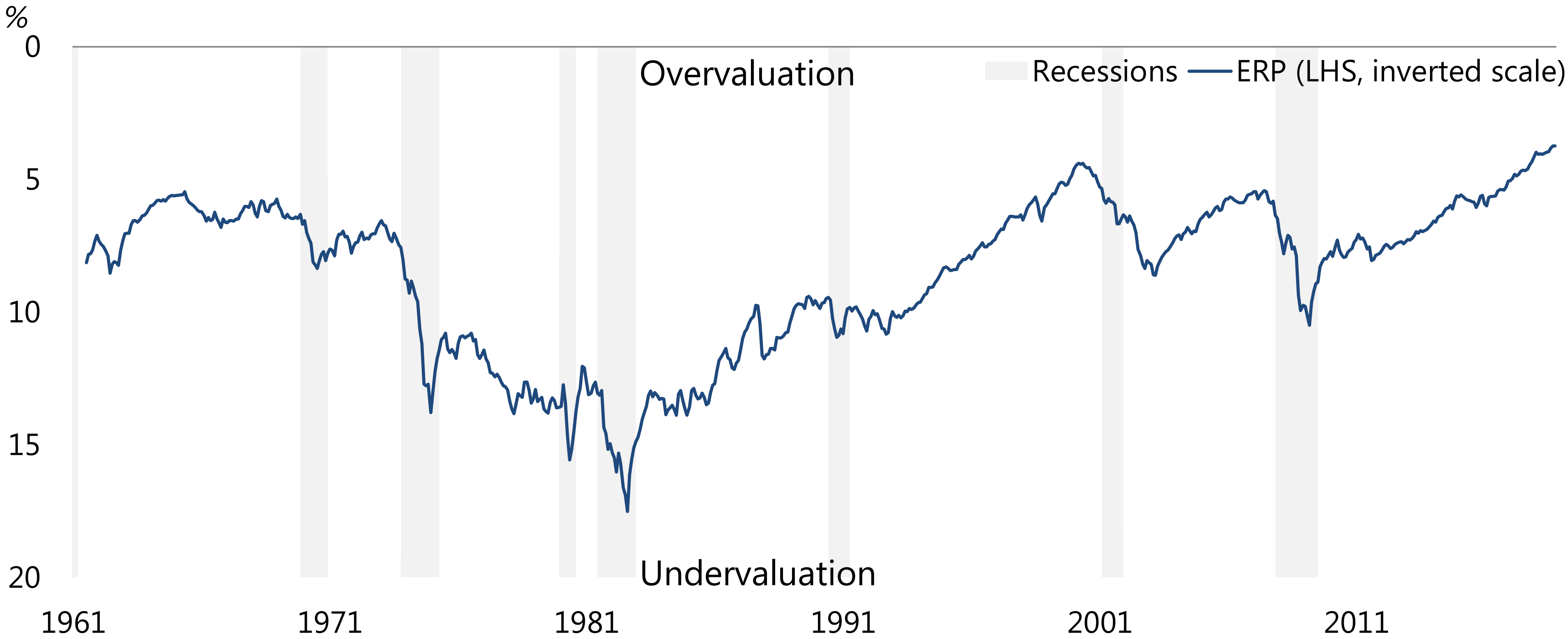
US equity valuation: dividend yield minus 10y UST yield

Dividend/price minus 10y yield; %



Equity valuation: the equity risk premium (stock's expected return in excess of risk-free rate), at 3.7% is lowest on record, or a 100th %-ile of overvaluation

US equity valuation: equity risk premium (ERP) 1/



1/ ERP is the compensation required to hold a stock beyond expected earnings and real interest rates. It is constructed by adding a long-term average of real GDP growth to the earnings yield (inverse of CAPE ratio) and subtracting the nominal 10-year risk-adjusted bond yield (10y yield minus term premium) deflated by the 20-year average of CPI inflation as a proxy for long-run expected inflation. Source: Goldman Sachs

Equity valuation: US stocks are expensive by most metrics versus history. The median degree of overvaluation across 8 metrics is north of the 80th percentile

S&P 500 valuation metrics: snapshot

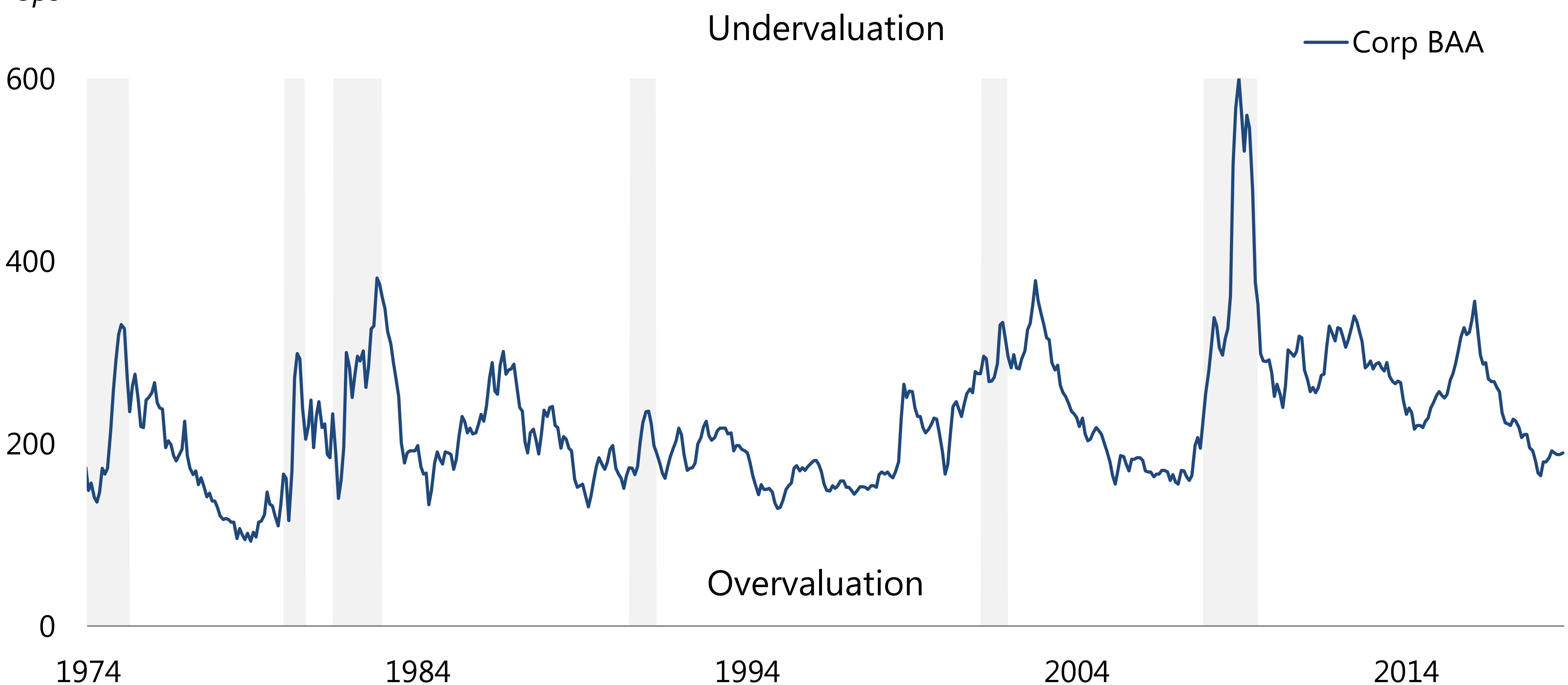
Valuation metric	Current	Long term average	Historical percentile
EV / sales (EV= enterprise value)	2.3	1.3	94
Total return CAPE	35.9	20.3	97
Price / Book	3.3	2.4	87
Forward P/E	16.9	15.1	76
Free cash flow yield	4.3	4.0	56
-(DY - 10y yield) (DY= dividend yield)	-1.4	-0.2	56
-(EY - 10y yield) (EY= earnings yield)	2.7	1.7	68
ERP (= equity risk premium)	3.7	8.5	100
Median metric			81

Source: Goldman Sachs and Tudor calculations

Credit valuation: corporate spreads are low by historical standards. Moody's Baa spread, at around 190bp is in the 64th percentile of overvaluation

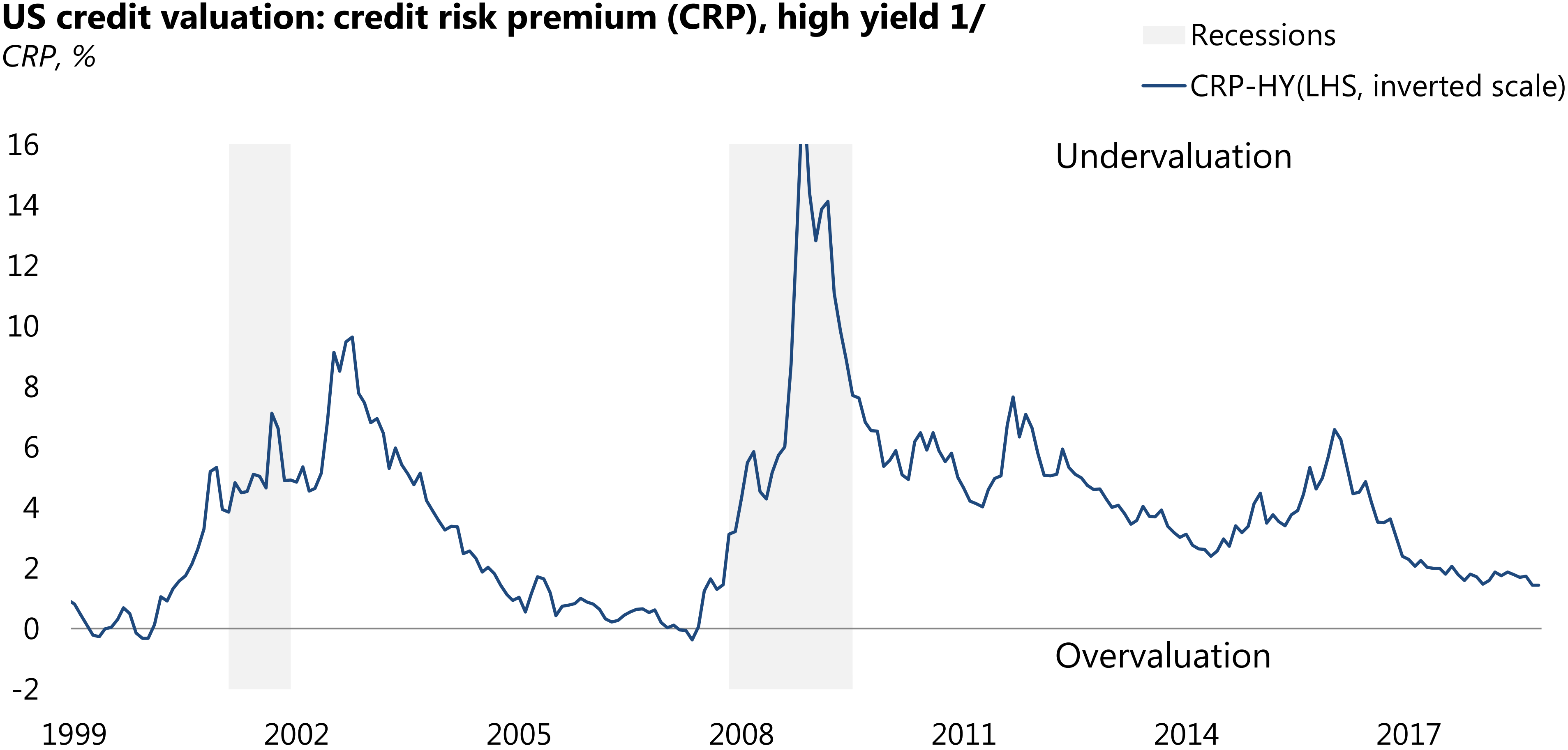
US credit valuation: corporate spreads

bps



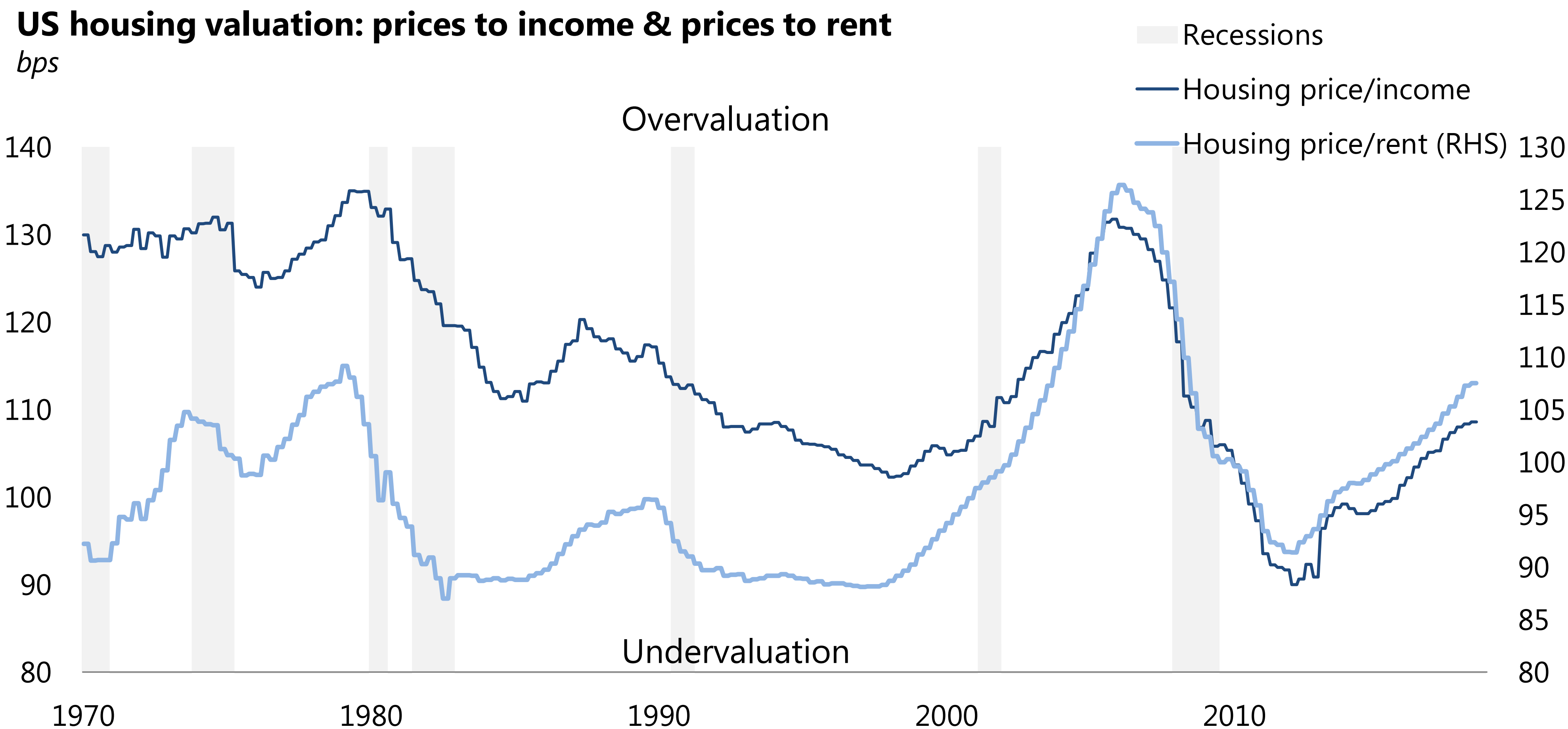
Credit valuation—the High-Yield risk premium (the return in excess of that required to cover estimated expected loss) is in the 72nd %-ile of overvaluation

US credit valuation: credit risk premium (CRP), high yield 1/
CRP, %



1/ CRP = return in excess of the compensation expected loss over the life of the bond; expected losses are projected by changes in unemployment. Source: Goldman Sachs

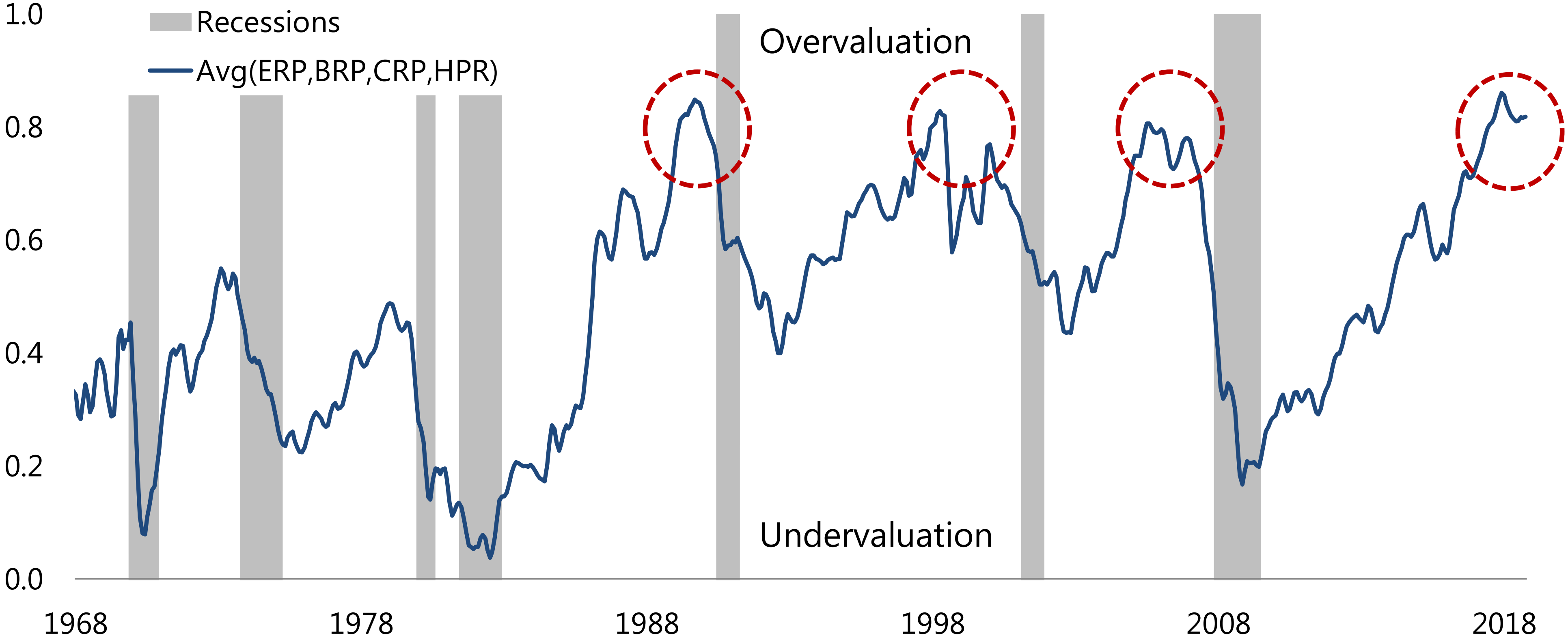
Housing valuation: housing prices are not as elevated as before the GFC. Prices/income: 42nd %ile of overvaluation. Prices/rent: 87th %ile of overvaluation



US cross-asset valuation (stocks, bonds, credit, housing): large, synchronized degree of overvaluation (above 80th percentile), as seen before past recessions

US asset valuation: equity, bond, credit, and housing 1/

percentile on rolling 10y z-scores of stock, bond, and credit risk premia and of the price/rent ratio (3mma)



1/ The chart above plots the 3m moving average of the percentile of a 10y rolling z-score of the simple average of four different valuation metrics (10y rolling z-scores) for bonds (term premium), stocks (equity risk premium), credit (credit risk premium) and housing (the house price to rent ratio)

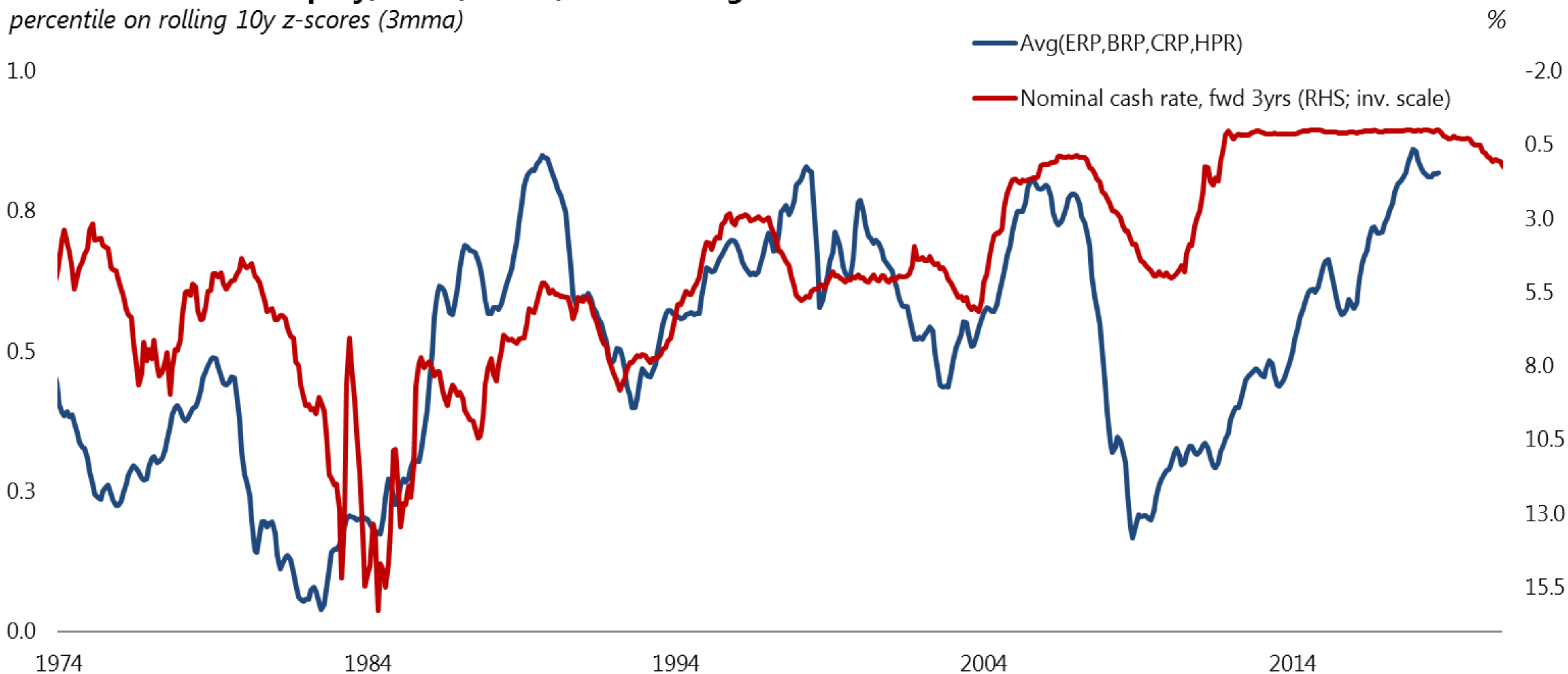
US asset price valuation

- US asset prices display a large, synchronized degree of overvaluation (above 80th percentile), seen only before past recessions
  - <u>Bonds</u> are extremely overvalued (above 80th percentile of overvaluation)
  - <u>Stocks</u> are extremely overvalued (above 80th percentile of overvaluation)
  - <u>Credit (HY)</u> is very overvalued (around 70th percentile of overvaluation)
  - <u>Housing</u> is somewhat overvalued (around 65th percentile of overvaluation)
- As asset prices tend to mean-revert, a large overvaluation is likely to result, sooner or later, in a correction in asset prices
- But, markets have shown ability to sustain overvaluation for long periods of time (the average length of overvaluation spells for the stock market is 36 months vs. 20 months in the current cycle)—eventually making the adjustment to fair values more disorderly

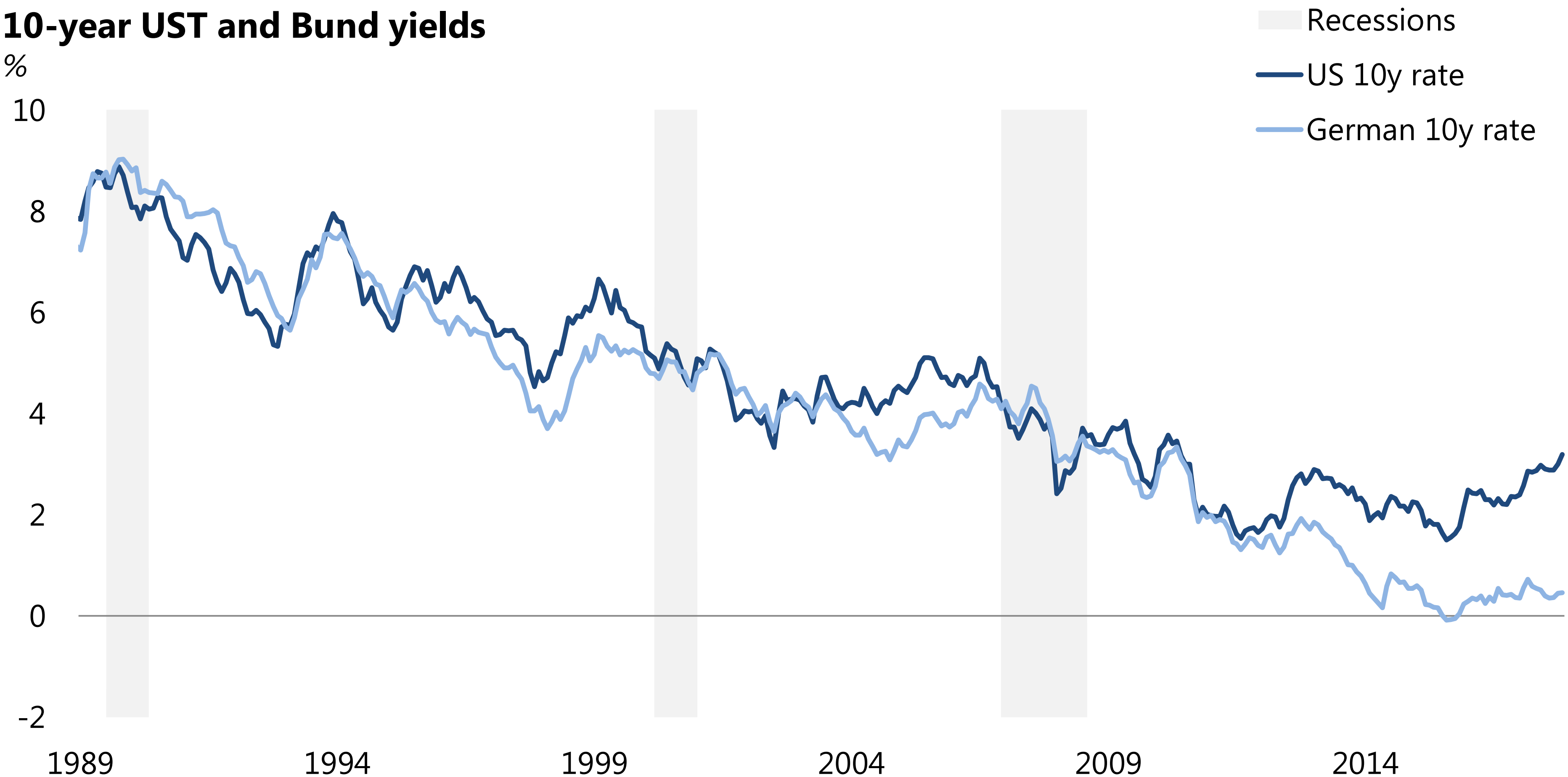
Monetary policy and asset price cycles

Asset price (valuation) cycles tend to follow monetary policy cycles by 3+ years—we are 2 years into the beginning of the Dec 2016 tightening cycle and overvaluation should soon begin to revert

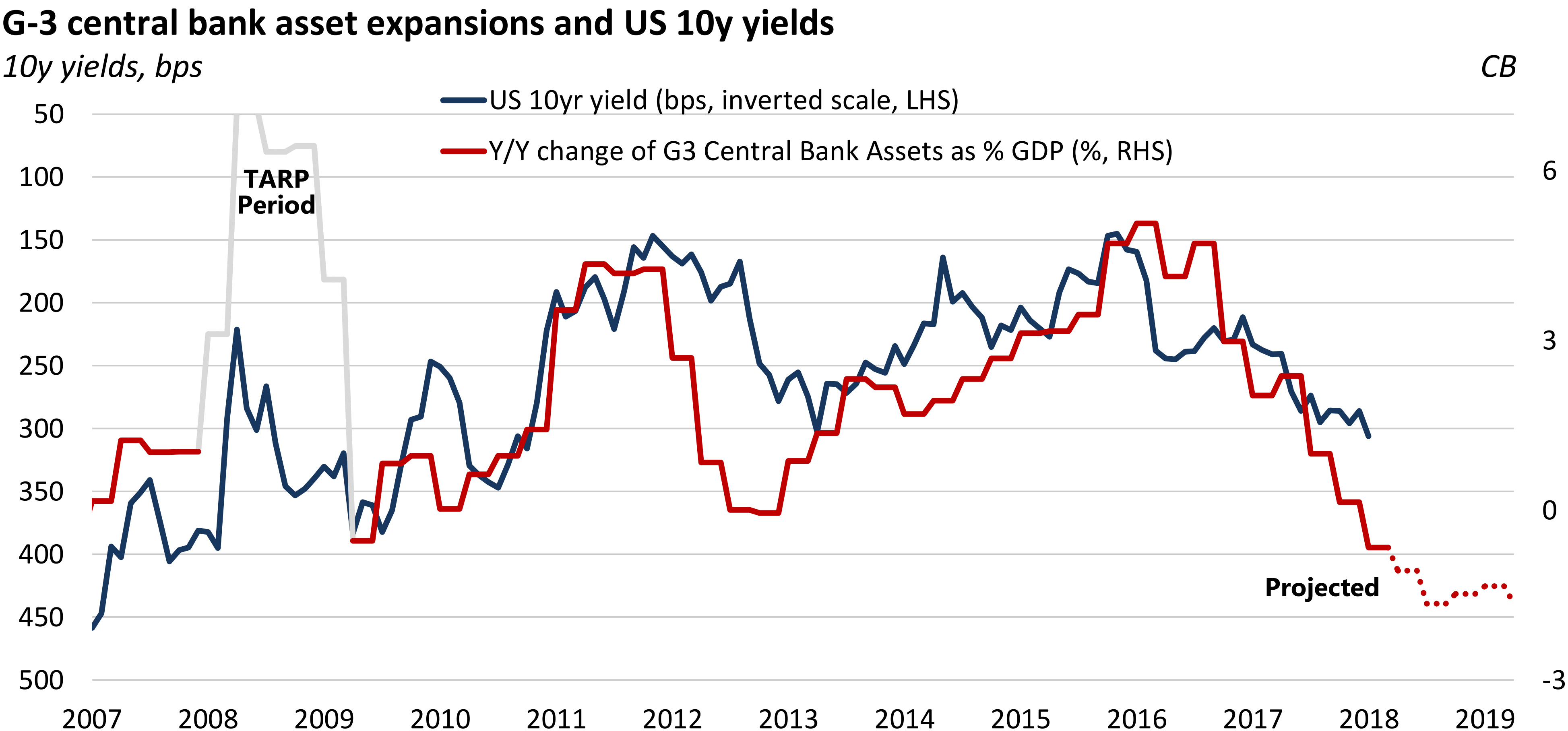
Chart
US asset valuation: equity, bond, credit, and housing
percentile on rolling 10y z-scores (3mma)



In this monetary policy cycle, UST yields have been very compressed (e.g., beyond that explained by US growth) because of global QE



But QE is ending, shrinking global central bank b/s, a powerful driver that will lift global rates: UST 10y rates back to 4.5% ?



Because of CB tightening, rising rates may be at the point where the bond-equity return correlation goes positive, exacerbating any market sell off triggered by higher rates

US bond and equity return correlation

36m rolling correlation of monthly equity & 10y bond returns

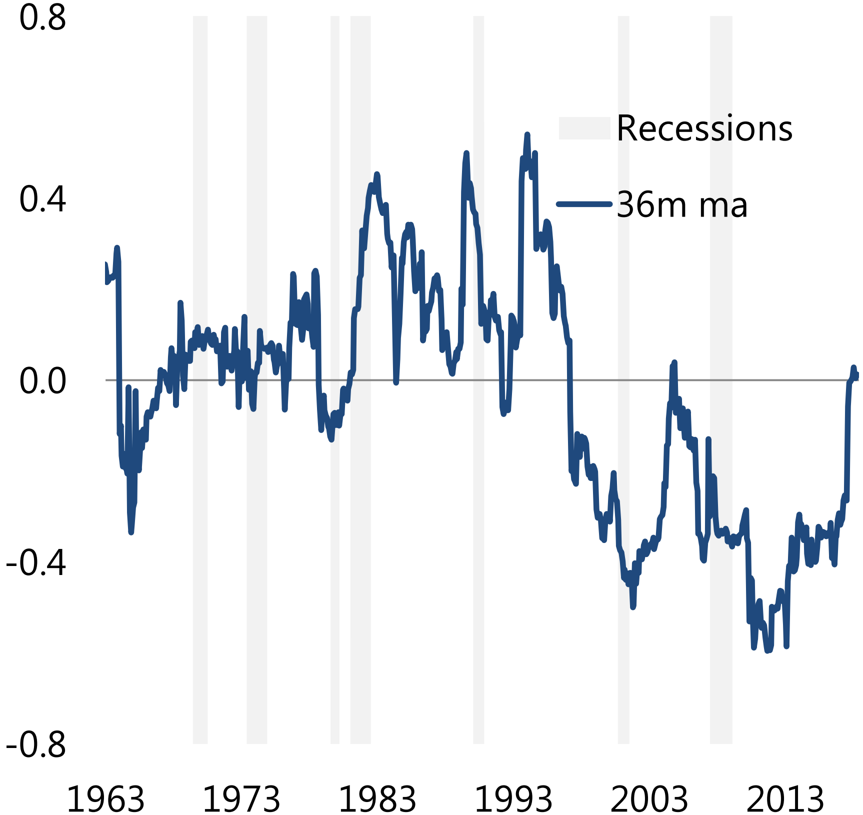
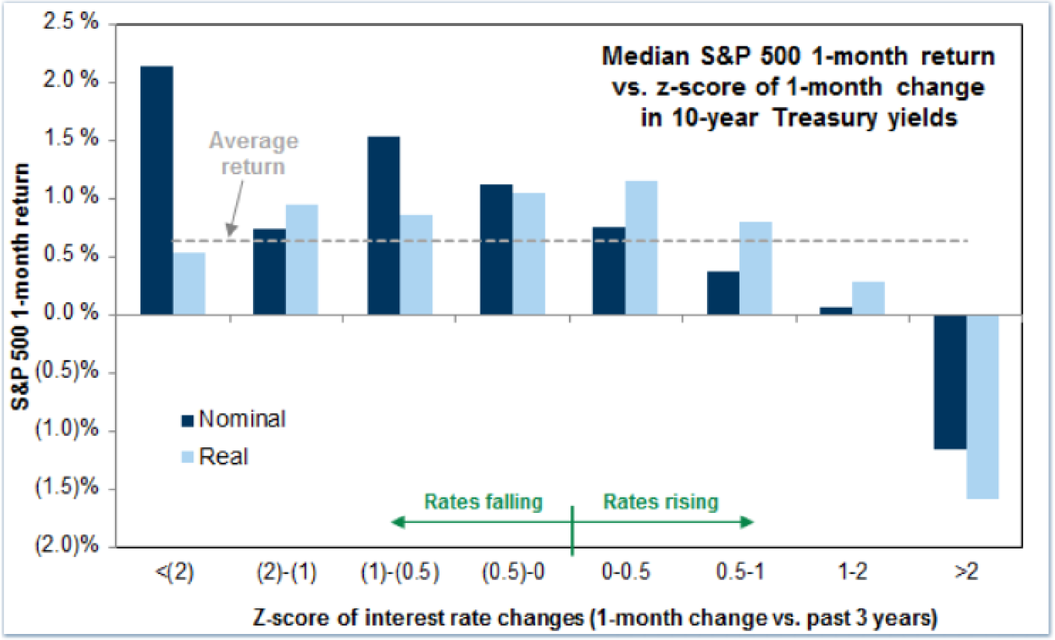


Exhibit 3: S&P 500 typically cannot digest rapid increases in bond yields

as of September 30, 2018; z-score versus trailing 3 years since 1965

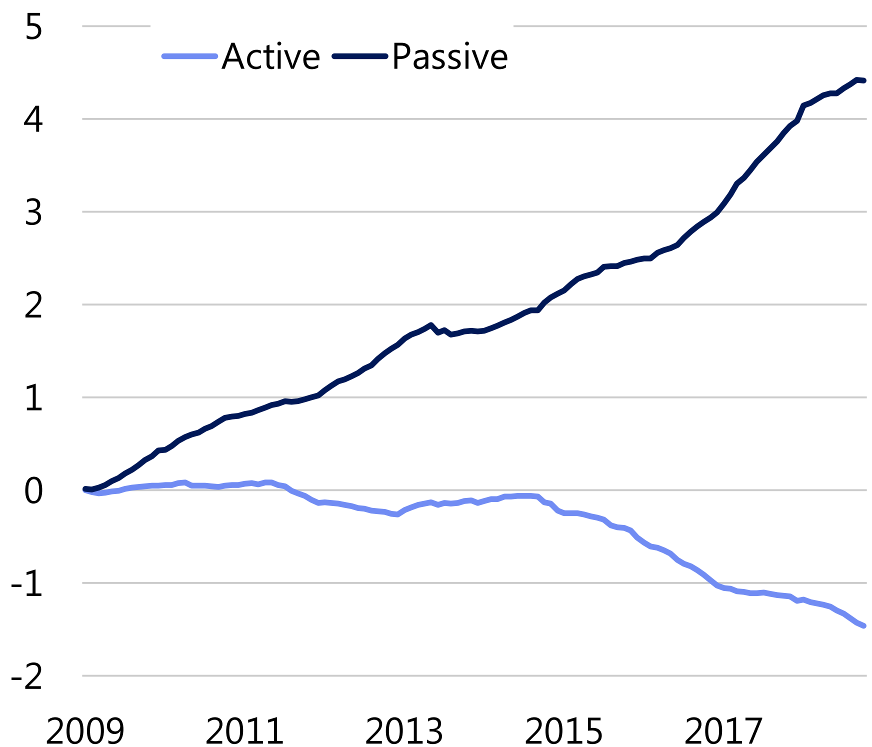


Source: FRB, FactSet, Goldman Sachs Global Investment Research

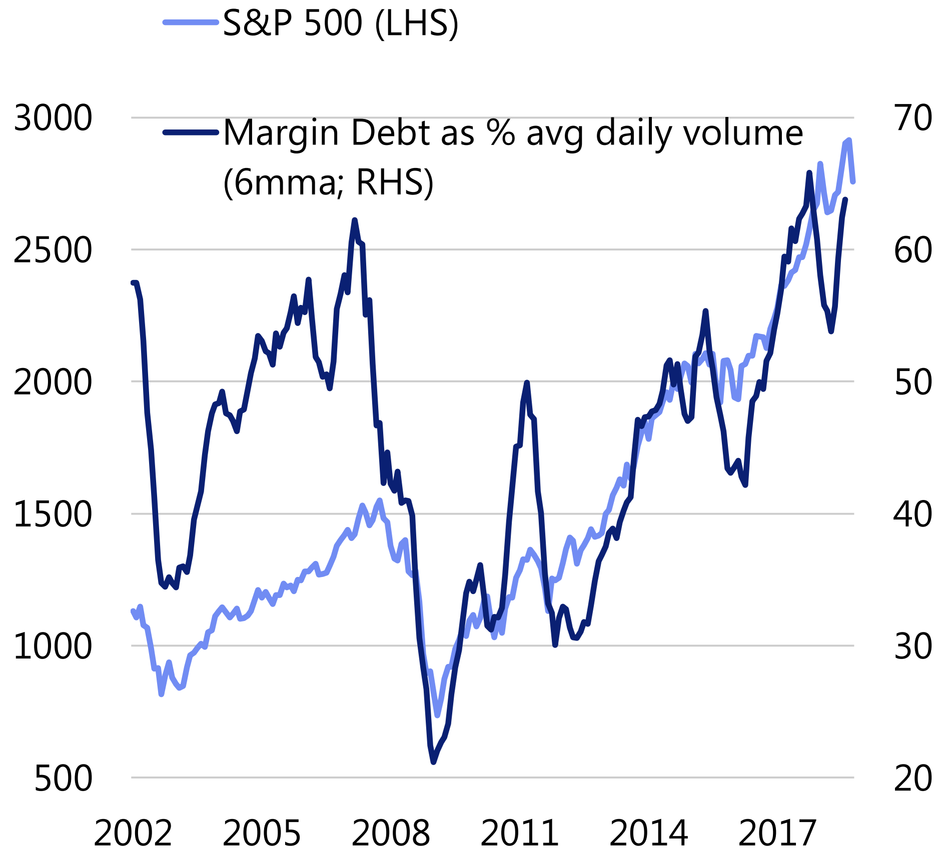
A positive bond-equity return correlation also lowers the diversification benefit of ever-growing passive-allocation strategies (herding) and of levered stock market bets, exacerbating any market sell off triggered by higher rates

Inflows into passive and active strategies

USD tr; net cumul. mutual and exchange traded funds by type of strategy



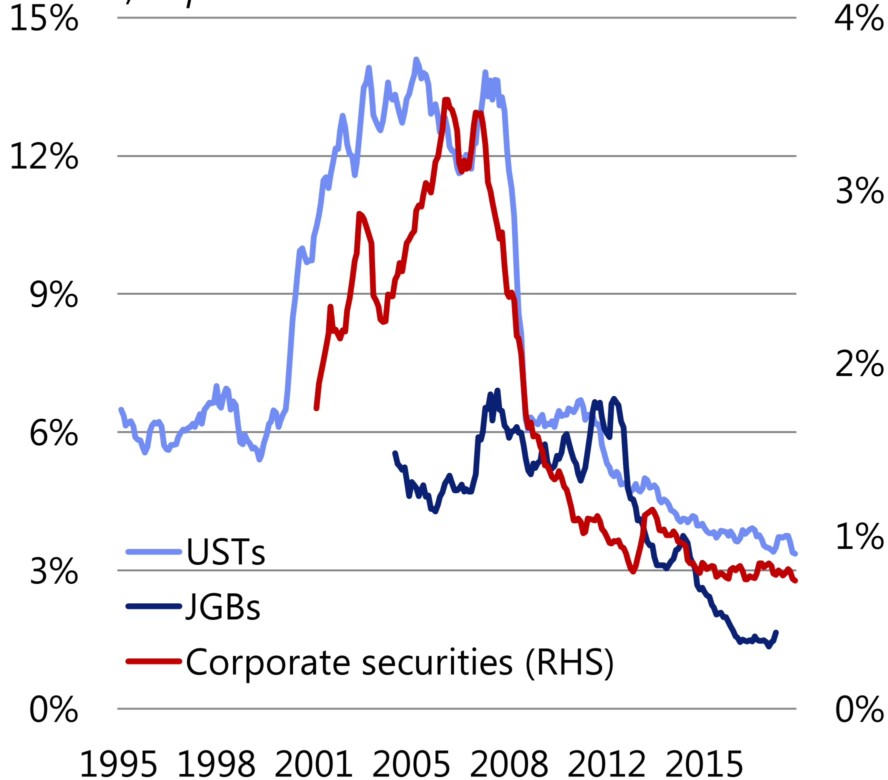
Margin debt vs stock prices



Lower liquidity and cash buffers can also aggravate any market sell off, as investors jam at the exit door

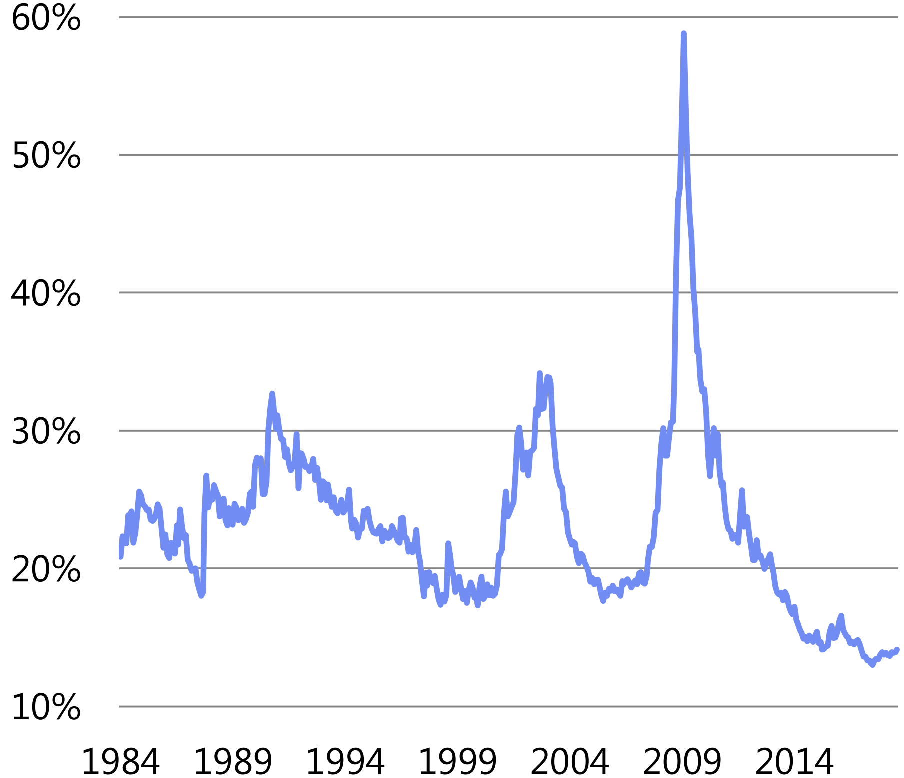
Market liquidity

LHS: Value of market turnover/value of outstand. bon
RHS: Corporate security transactions over their stock
6mma, in percent



US Mutual Fund Cash Holdings and Money Market Fund AUM

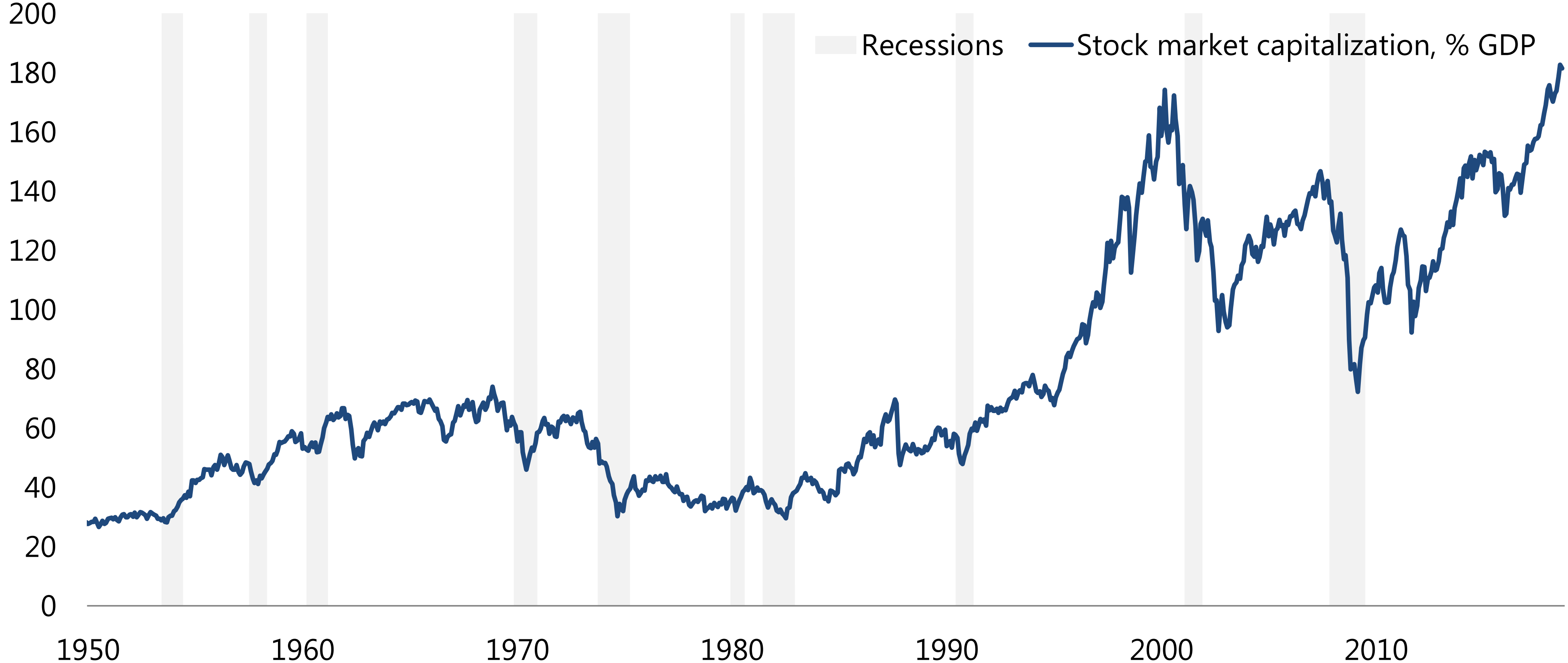
% of Market Cap



A large stock market decline is now more harmful (wealth effect) than any past time as market capitalization in percent of GDP is highest on record and the US equity market remains largely (85%) domestically owned

US equity valuation: stock market capitalization

NYSE and NASDAQ capitalization in % of GDP



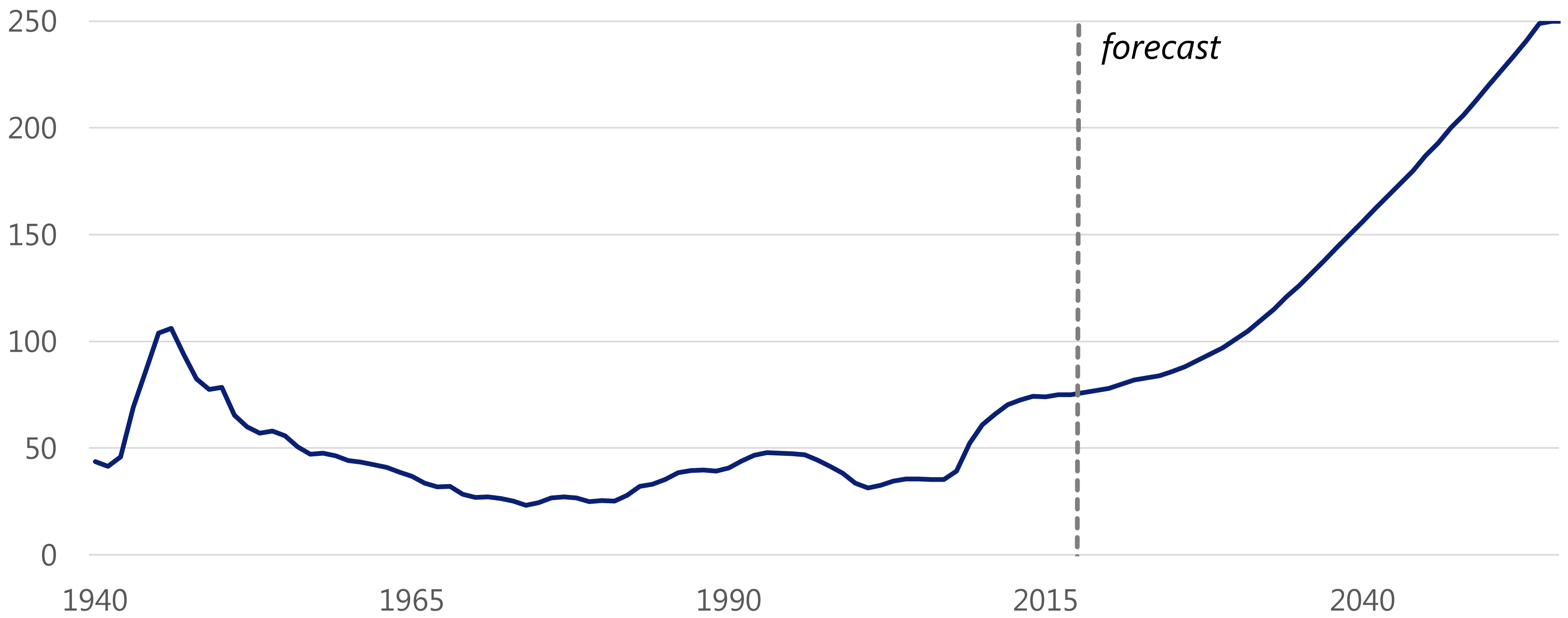
Source: World Federation of Exchanges, Haver and Tudor

Financial leverage cycles

Where is leverage concentrated? We will come to regret current fiscal irresponsibility given the coming (after 2025) massive entitlement crisis. Higher issuance, lower CB purchases will push up market-clearing yields

US government debt projections

% of GDP; CBO's alternative scenario

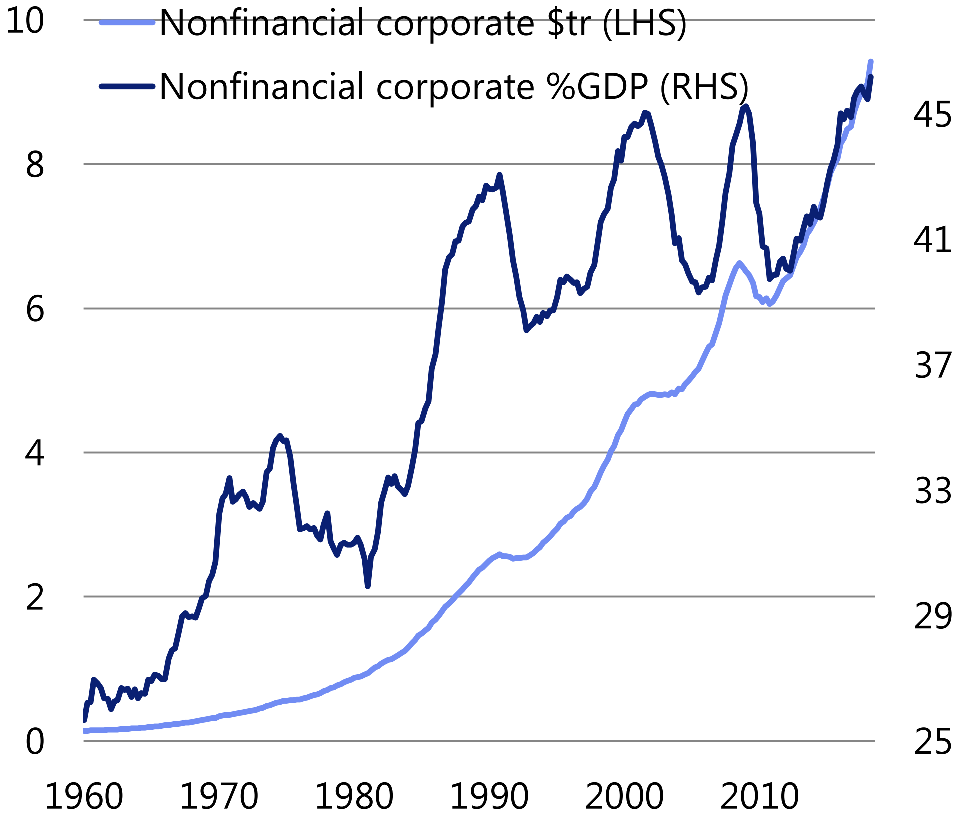


A legitimate question is whether too low interest rates have induced higher gov't borrowing

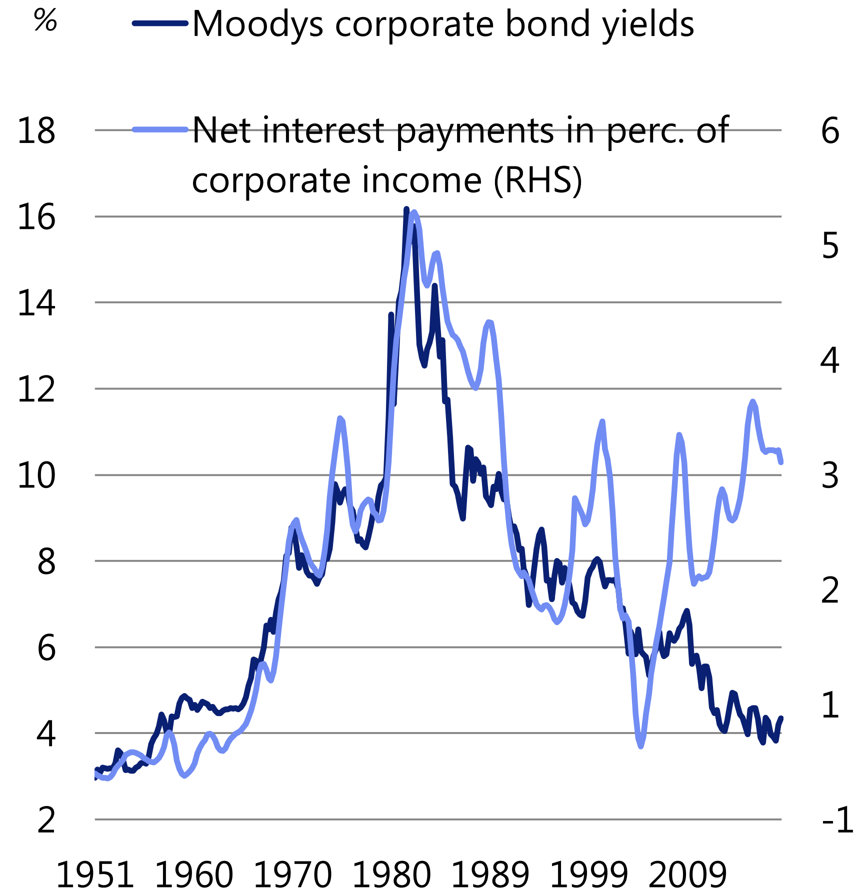
Where is leverage concentrated? Corporates indebtedness is at historic highs. Debt service is rising sharply, despite low rates and spreads

US corporate leverage

Sources: Fed Board and BEA; $ tr.

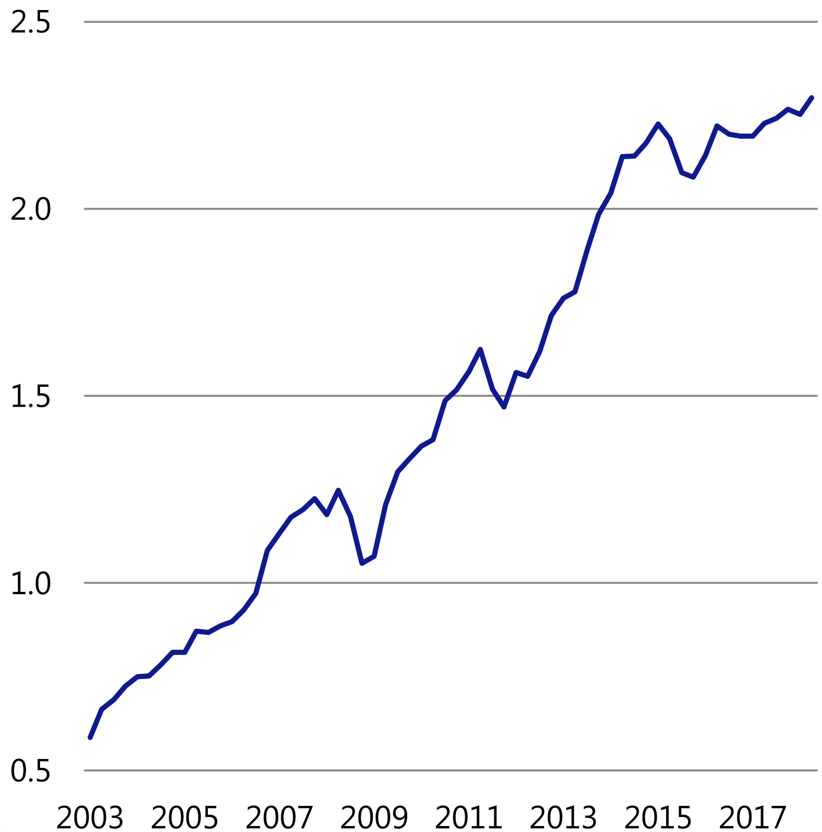


Corporate debt service and yields

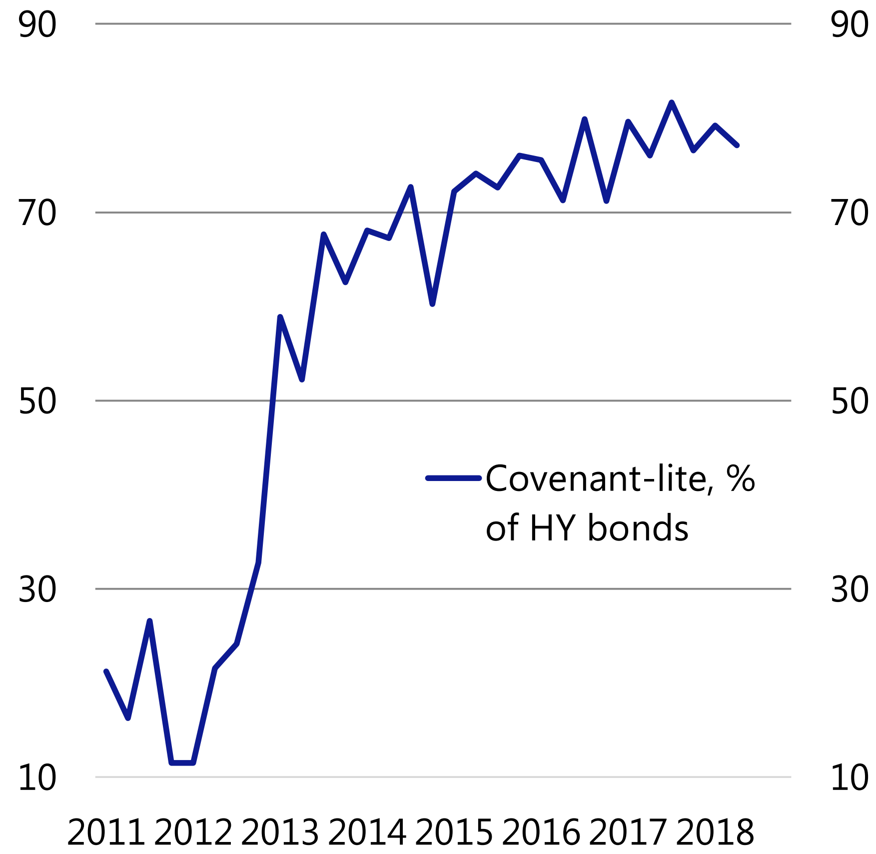


Where is the leverage? Hidden dangerous leverage increases with the maturing of the financial cycle: credit is increasingly channeled to marginal (riskier) borrowers ("subprime"), increasing the economy's interest rate sensitivity

HY bonds and leverage loans to corporates
$ trillion; source: BIS



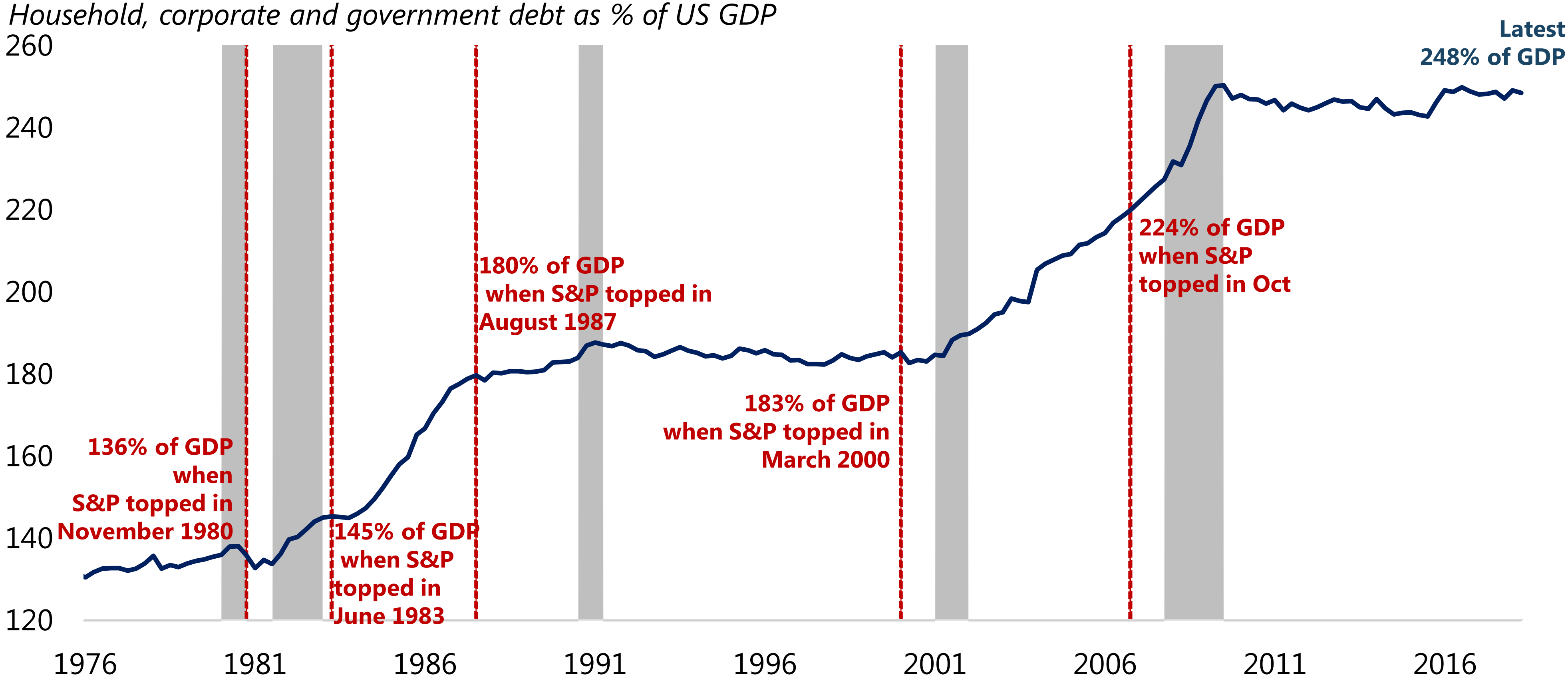
Risky lending
share of covenant-light in total HY bonds, %; source: BIS



High economy-wide leverage (which will be higher after then next market crash/recession) makes each hiking cycle more painful to sustain

US: total debt to GDP, recessions and stock market cycles

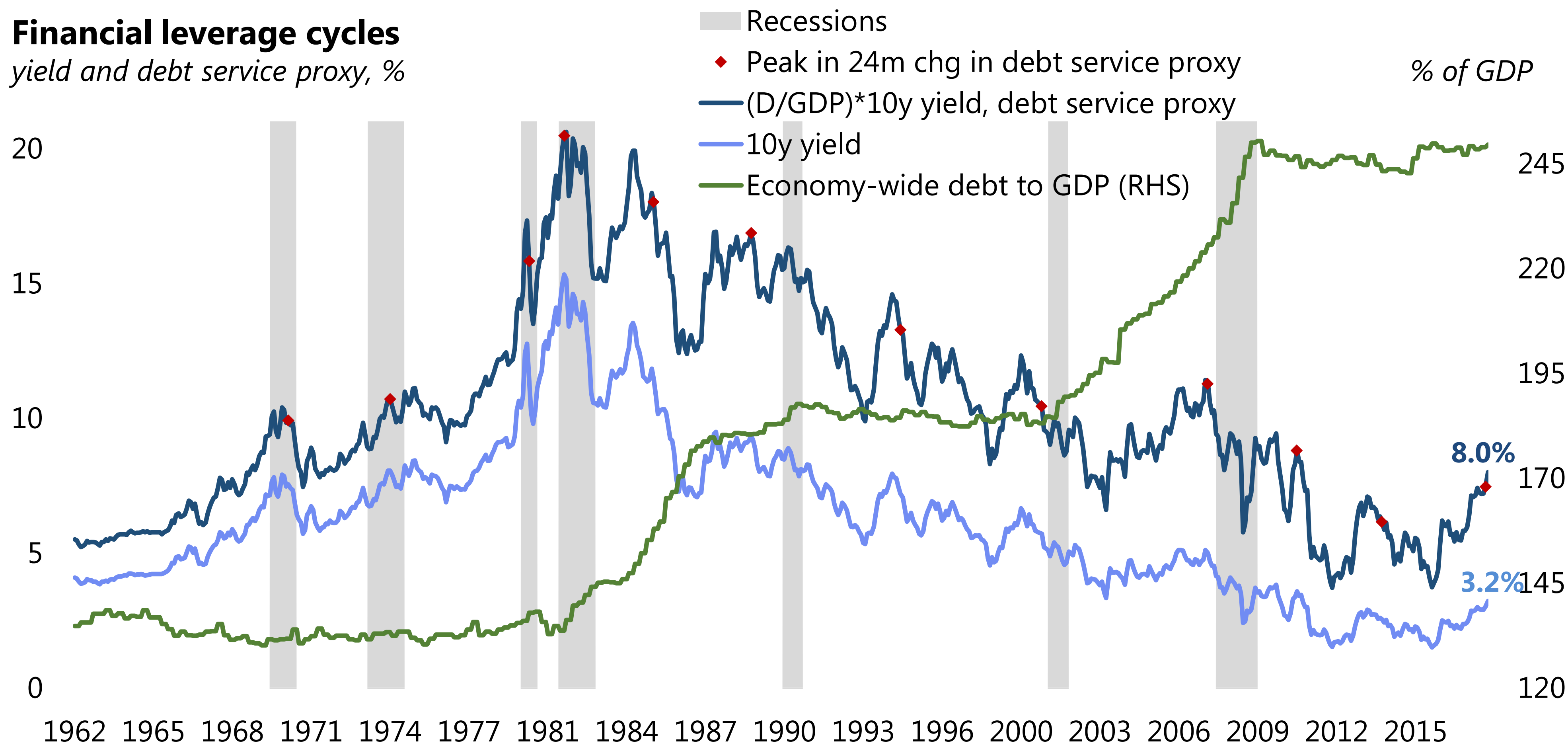
Household, corporate and government debt as % of US GDP



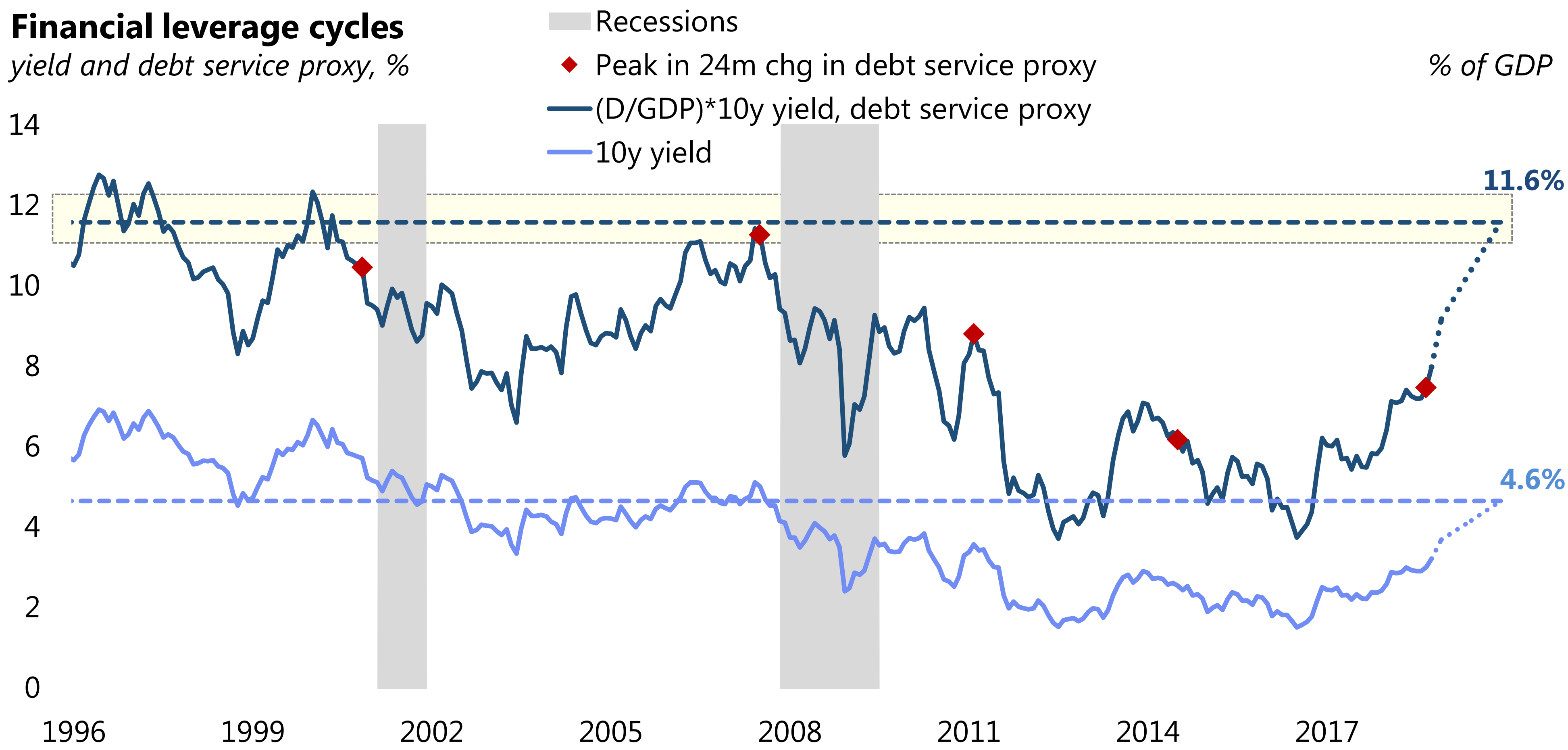
Heavier debt burdens are getting difficult to sustain over time—in the last 4 recessions, it took decreasing levels of interest rates to derail the economy

Financial leverage cycles

yield and debt service proxy, %



In this financial leverage cycle, it will take 10y yields to reach 4.6% to match the peak in (our proxy for) debt service that preceded the last two recessions



The speed at which rates increase matters too. The 24m change (3.5%) in the economy-wide debt service proxy is already above past recession thresholds