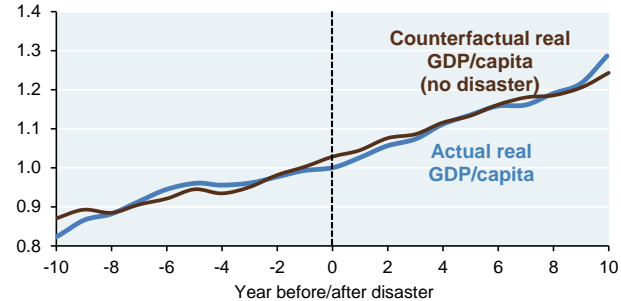

Market and economic discussion

September 14, 2017

Hurricane Harvey

- Impacted area GDP and population 7x and 4x the one impacted by Katrina
- Losses from Harvey estimated at 0.4% of US GDP, could be 3x-4x higher
- Harvey destroyed half a million cars, 40,000 homes and 25,000 jobs.
- History of natural disasters: most economic impacts are transitory given rebuilding and reconstruction

Limited economic impact from natural disasters
Real GDP/capita in countries w/ nat. disasters, 1970-2008



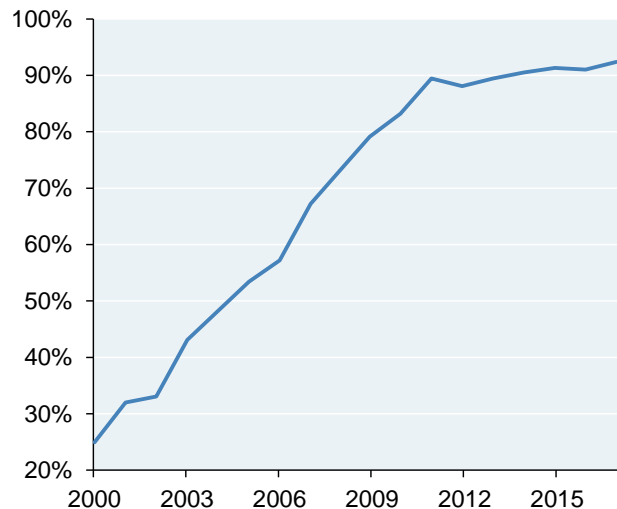
Source: "Catastrophic natural disasters and economic growth", InterAmerican Development Bank, June 2010. Data = disasters above 90th percentile.

- In the wake of the 1995 Kobe earthquake in Japan (6,400 fatalities and cost = 2.5% of Japanese GDP), media reports suggested it could take Kobe a decade to recover
 - Within 18 months, Kobe manufacturing activity was at 98% of pre-disaster trend, imports recovered, exports back at 85% of capacity and 79% of shops reopened
- **This is not uncommon.** Countries with higher income, higher educational attainment, greater openness, more complete financial systems, better developed supply chains and decentralized governments experience fewer losses after natural disasters

North Korea

China-North Korea trade

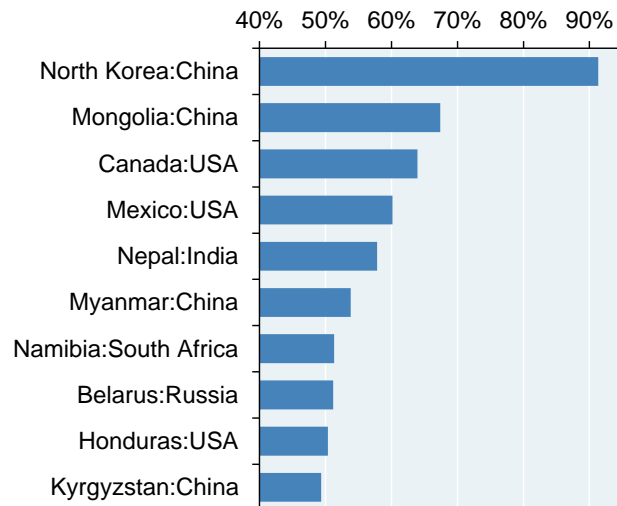
% of total North Korean trade



Source: US Korea Institute at Johns Hopkins SAIS. 2016.

10 highest trade concentrations in the world

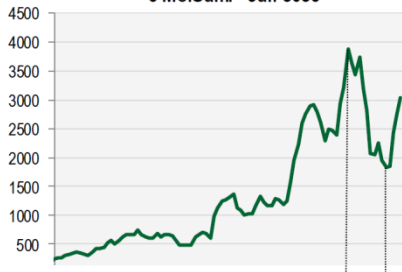
Bilateral Country A:Country B trade as a % of total Country A trade



Source: IMF Direction of Trade Statistics, Johns Hopkins SAIS, JPMAM, 2014.

Summer 2017 news headlines

'Brazil and Corruption'
Bloomberg News Stories
6 Mo.Sum. Jul: 3036



China's regime policies set it apart

As if the risks stemming from North Korea's weapons programme were not big enough in themselves, the crisis over the peninsula has taken on wider ramifications: US-China relations are being affected. This follows the failure to make substantive progress at trade talks in Washington last month and strong messages from Beijing this week of growing disillusion with the president and China's desire to assert its own military power. That leaves Trump increasingly isolated as he

Italy is the biggest political risk in Europe: Analyst

Luke Graham | @LukeWGraham
Friday, 19 May 2017 | 10:21 AM ET



2 August 2017

Korea circle grows more vicious

Key judgments

- Donald Trump's approach to North Korea is widening the gap between the US and China
- As the president becomes more isolated, choices narrow
- Xi Jinping is playing a broader power game

Markets Face Three Big Geopolitical Risks This Week

By Eric Lam and Isobel Finkel
June 5, 2017, 2:04 AM EDT. Updated on June 5, 2017, 11:01 AM EDT

→ Persian Gulf troubles coincide with U.K. vote and Comey event

Qatar crisis: Armed conflict and protracted dispute are growing more likely, analysts say

- The dispute between Qatar and its neighbors is now entering its fifth week.
- Qatar has rejected a harsh list of demands from Saudi Arabia and other countries, which will likely prolong the crisis, analysts say.
- Some Middle East watchers believe the risk of armed conflict is growing.

Tom DiChristopher | @tdichristopher
Friday, 30 Jun 2017 | 1:24 PM ET



Brexit + Add to myFT

Sleepwalking towards a chaotic Brexit

The likelihood that there will be no deal is now even higher than before the election

“Martin Wolf



CNN politics

Live TV

6 months in, Trump's presidency is teetering on the brink of disaster

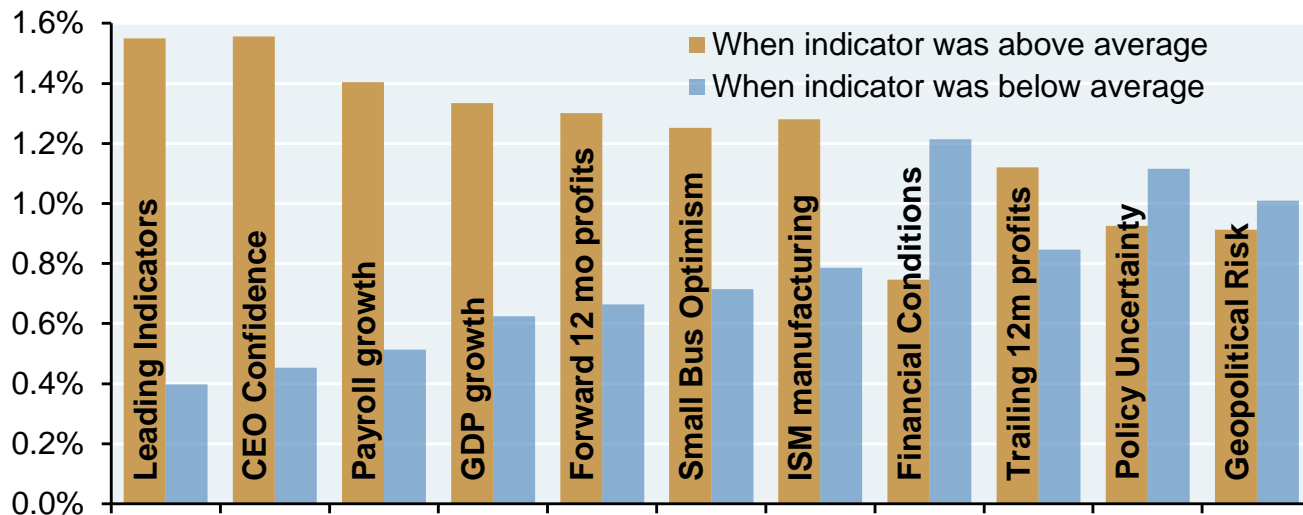
Analysis by Chris Cillizza, CNN Editor-at-large

Updated 9:23 PM EDT, Tue July 18, 2017

What matters most

What should investors pay attention to? Jobs, confidence & profits

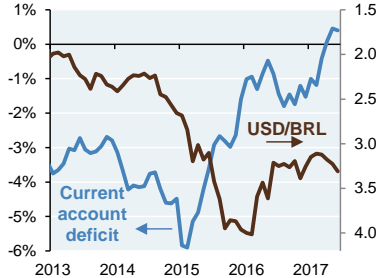
Average monthly S&P 500 returns, Jan 1985 - Aug 2017



Source: JPMAM, Conference Board, BLS, BEA, NFIB, ISM, Chicago Fed, S&P, Boston College, Stanford University.

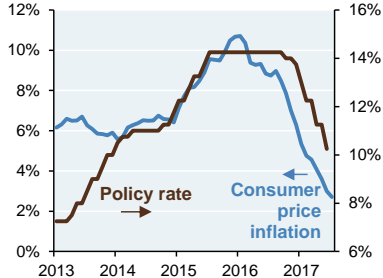
The example of Brazil

Brazil current account deficit
% of GDP



Source: BCB, Haver, Bloomberg. June 2017.

Brazil inflation and policy rate
Y/Y % change



Source: OECD, Haver. July 2017.

Brazil: business and consumer confidence, Index, Jan. 2013 = 100



Source: Fundação Getúlio Vargas, Confederação Nacional da Indústria. July 2017.

Brazil: employment growth
Y/Y % change of 3-month moving average



Source: Instituto Brasileiro de Geografia e Estatística. June 2017.

Industrial metals prices
Price index, Jan. 2013 = 100



Source: Bloomberg. September 1, 2017.

Brazil equity markets
MSCI Brazil Index, 2013 = 100

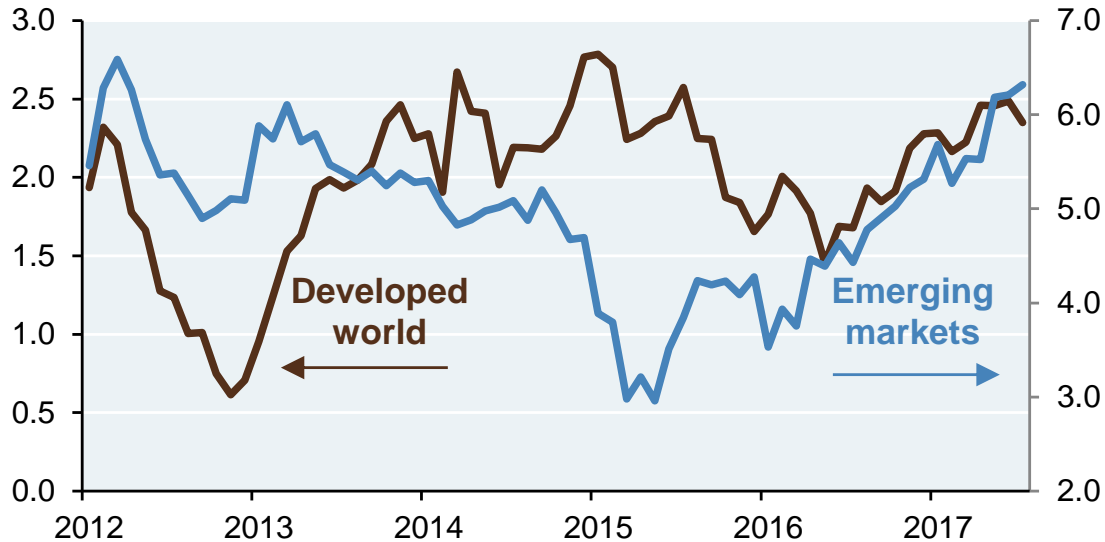


Source: Bloomberg. September 1, 2017.

Global economy improving

High-frequency GDP growth estimates

Contemporaneous growth, m/m % change annualized

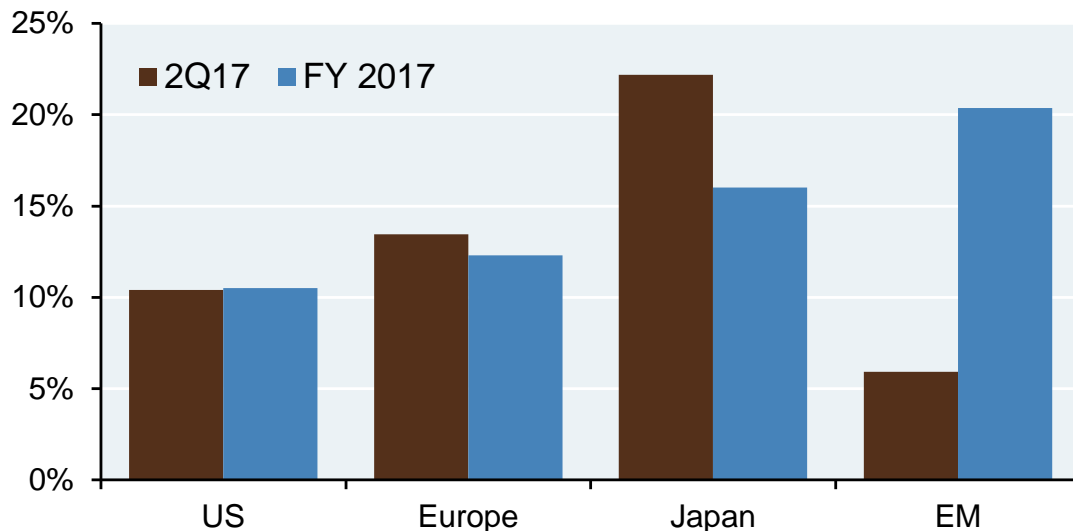


Source: Goldman Sachs Global Investment Research. July 2017.

Q2: good quarter for global profits

Earnings growth estimates

Expected y/y % change



Source: IBES, Factset, JP Morgan, Morgan Stanley. August 2017. Indices used: S&P500, Stoxx600, MSCI Japan, MSCI EM.

S&P 500

- earnings growth of ~11% y/y (+3.9% earnings surprise)
- revenue growth of 5.2% (+0.4% surprise)
- net income margin expansion of 38bp (+27bp surprise)
- Q1/Q2 two fastest quarters since 2011

So far this year, global equity market rally is based on earnings rather than P/E expansion

MSCI All-country world

Index, 12/31/2016 = 100



Source: MSCI, Datastream, Bloomberg. July 2017.

MSCI All-country world

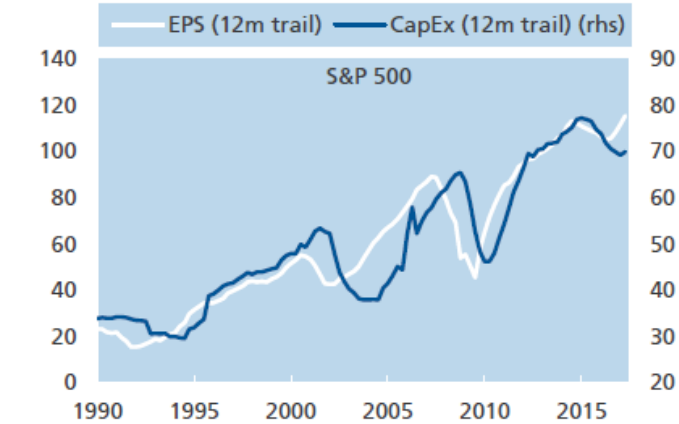
Price-to-12 month forward earnings



Source: MSCI, Datastream. July 2017.

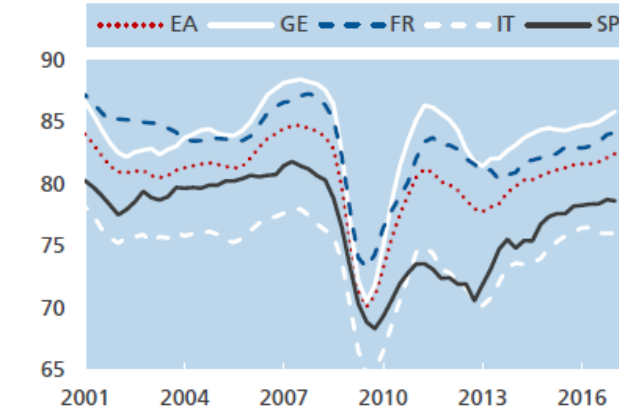
Looking forward: more capex in the US and perhaps in Europe as well

Capex tends to follow the profit cycle



Source: Bloomberg

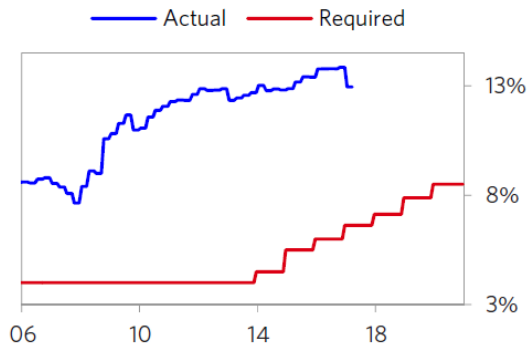
Capacity utilisation increasing in the euro area



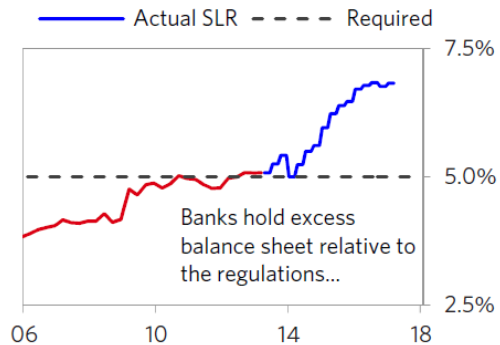
Source: European Commission

Banking system risks?

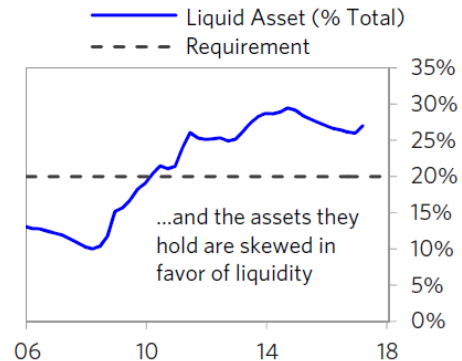
Risk-Weighted Capital Ratio



Gross Leverage (SLR Ratio)



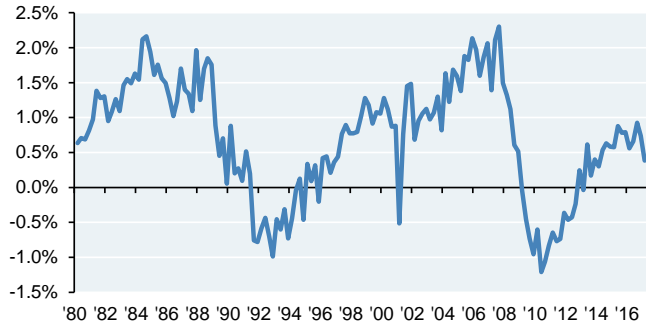
Liquid Asset Ratio



Commercial real estate risks?

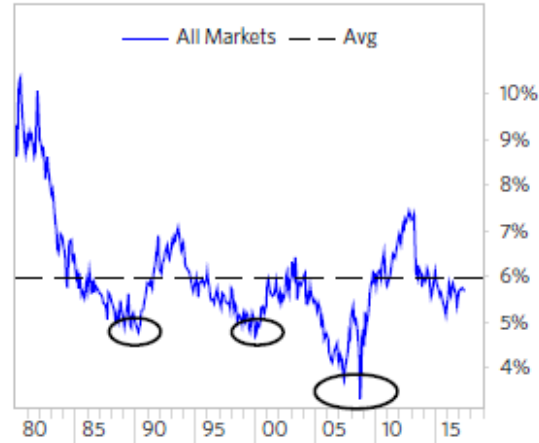
CRE borrowing/GDP

Commercial real estate borrowing well below prior peaks
% of GDP



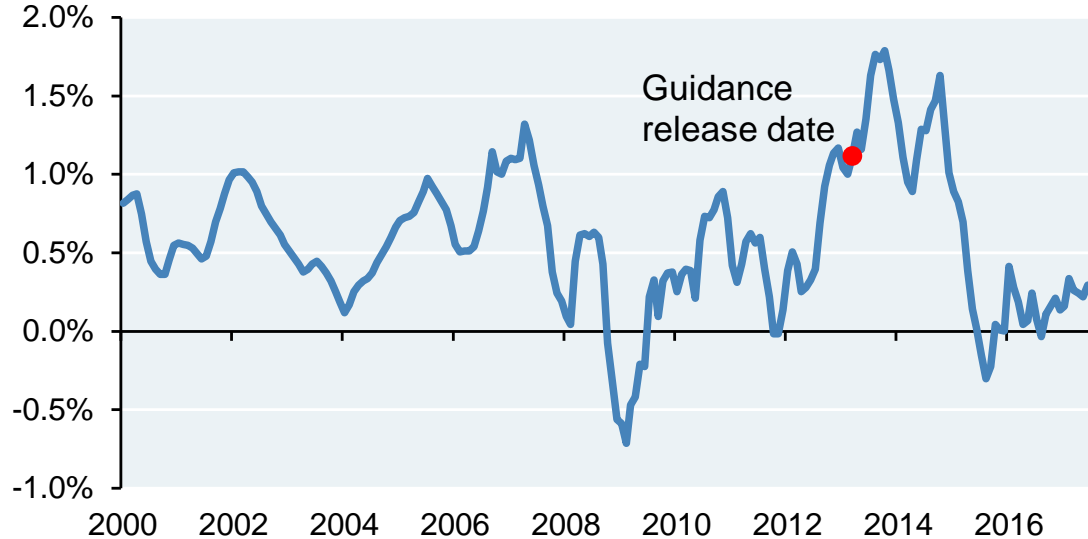
Source: Federal Reserve Board, BEA. Q1 2017.

Cap Rates vs Real Yields



Leveraged loans and High yield risks?

Fed/OCC/FDIC guidelines resulted in slower leveraged loan and high yield issuance, net issuance % of GDP

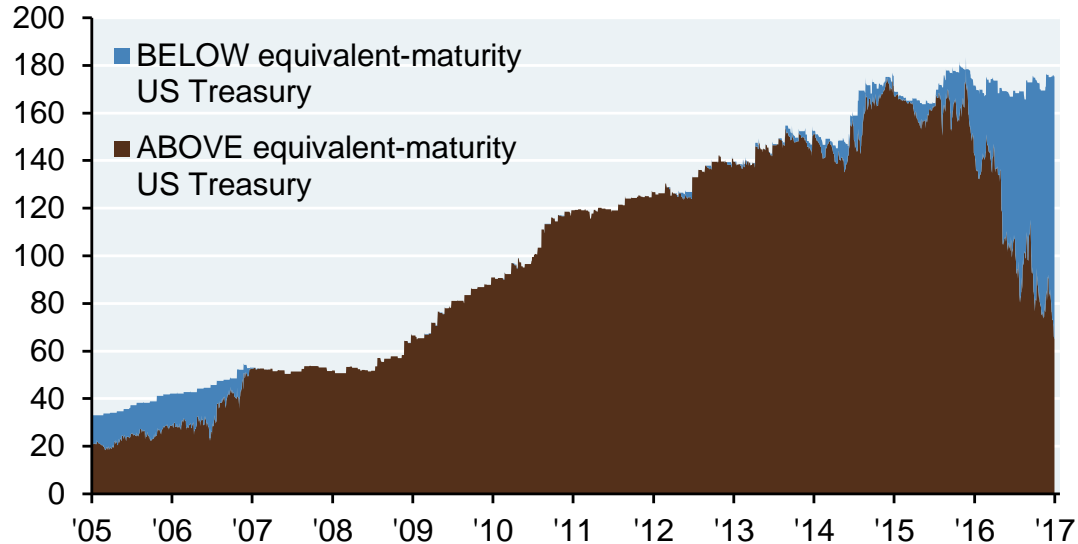


Guidance regarding deals with more than 6x debt/EBITDA

Source: Bridgewater Associates. August 2017.

Asset pricing

Growing amount of Italian BB's yielding less than US Treasuries, Face value, EUR billions

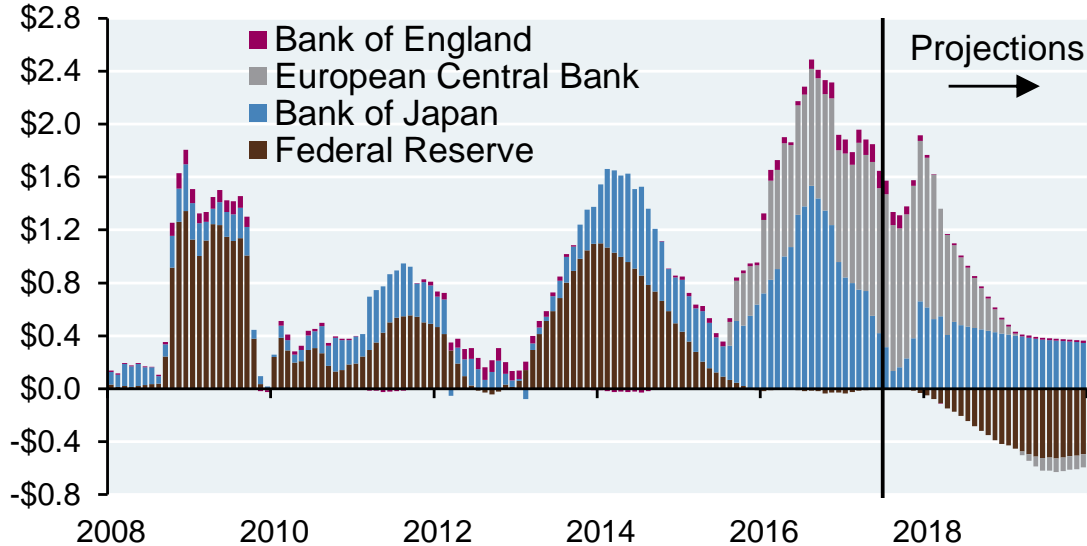


Source: Bank of America Merrill Lynch. August 10, 2017.

Next area of market concern, and more valid one: what do the central banks do with their balance sheets?

G-4 central bank assets

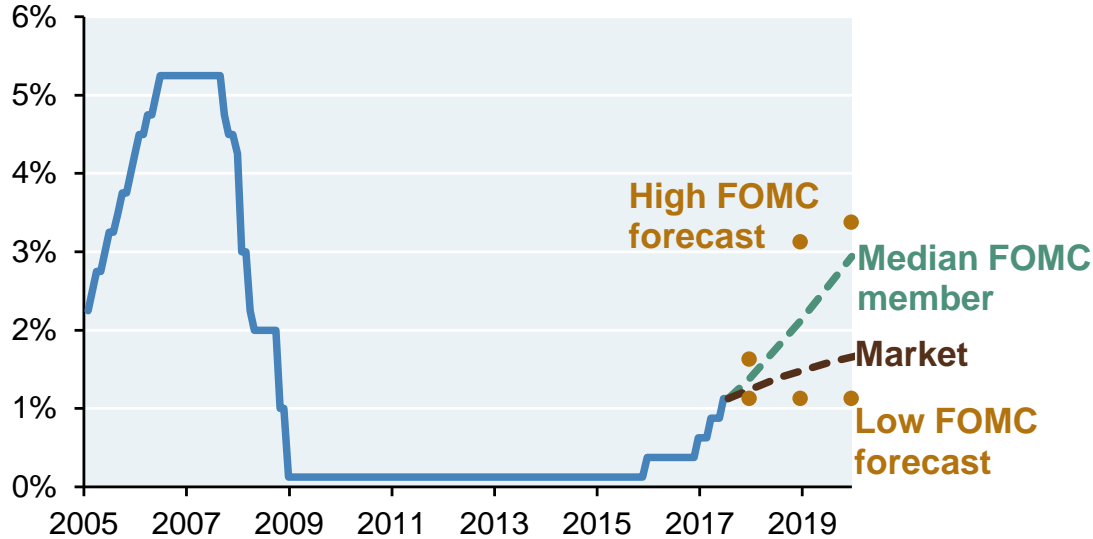
US\$ trillions, 12 month change



Source: National central banks, J.P. Morgan. July 2017.

What the Fed is thinking

Market currently expecting a slower rate hike cycle than the median FOMC member, Fed funds target rate

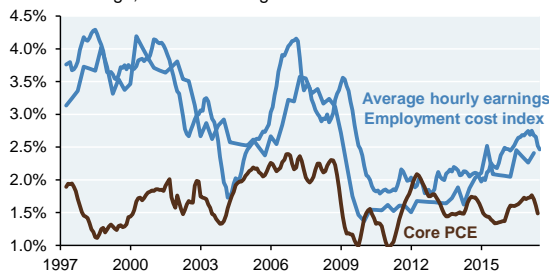


Source: Bloomberg, Federal Reserve, JPMAM. July 31, 2017.

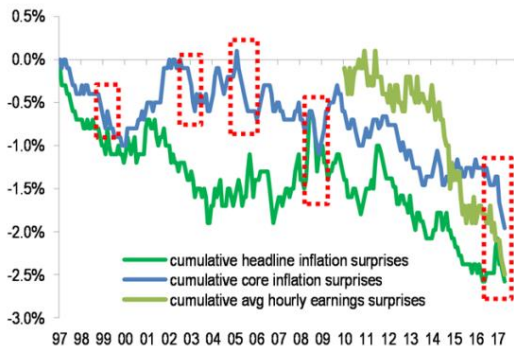
Wage inflation picking up, but nothing alarming yet

Measures of US inflation

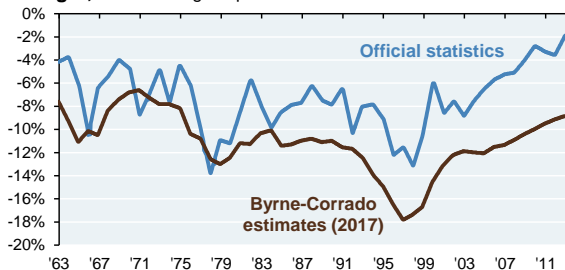
Y/Y % change, 3-month average



Source: BLS, BEA, JPMAM. Note: prior to 2010, average hourly earnings are only for production and nonsupervisory workers. June 2017.



ICT price mismeasurement may be larger than previously thought, Y/Y % change in price



Source: LSR, Byrne and Corrado, "ICT Prices and ICT Services: What do they tell us about Productivity and Technology?". 2017.

Developed world core inflation

Y/Y % change

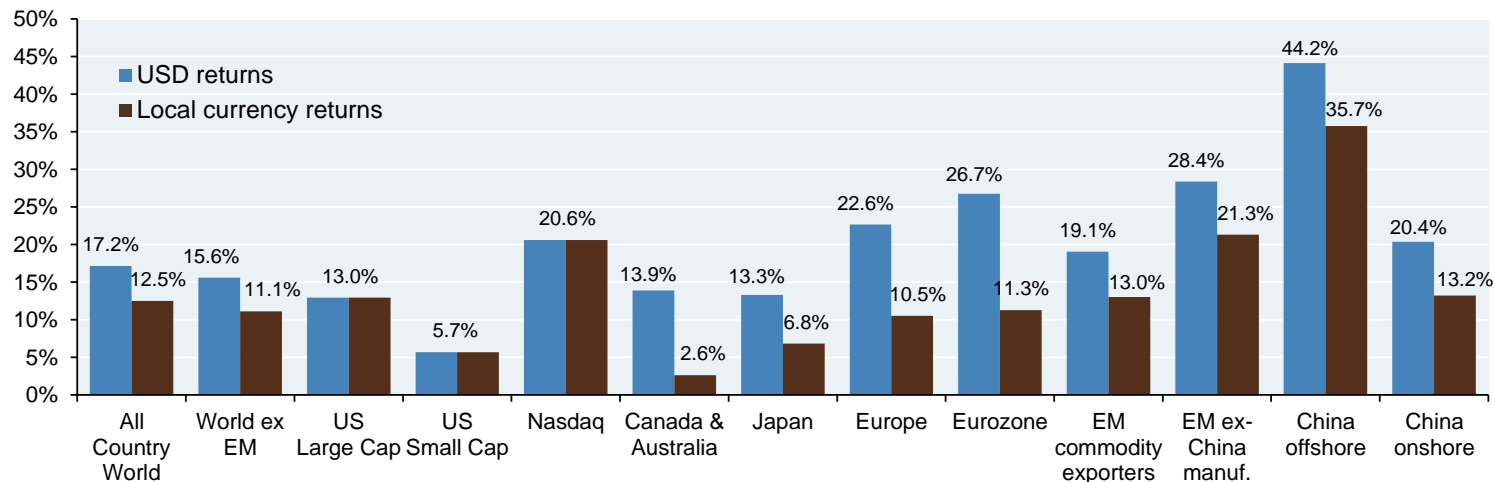


Source: J.P. Morgan, National statistics agencies. July 2017.

Bottom line: this super-long cycle probably has more to run, although the pace of equity market gains in the developed world is likely to slow

YTD total returns on major equity markets/regions

Percent

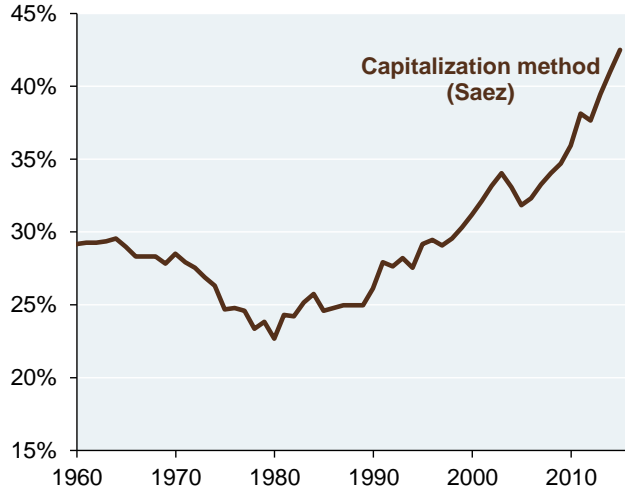


Source: Bloomberg. September 12, 2017.

Revisionist history: another look at US wealth and income inequality

Top 1% wealth share in the US

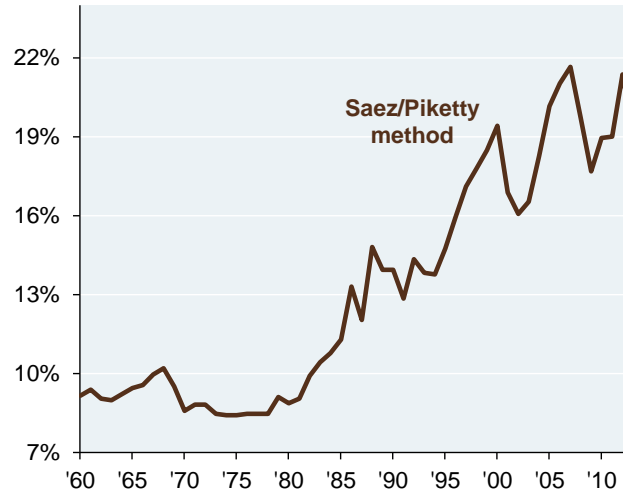
% share of total wealth



Source: "What do we know about evolution of top wealth shares in the United States?", Kopczuk (Columbia, AEA) 2015.

Top 1% income shares in the US

% of total income

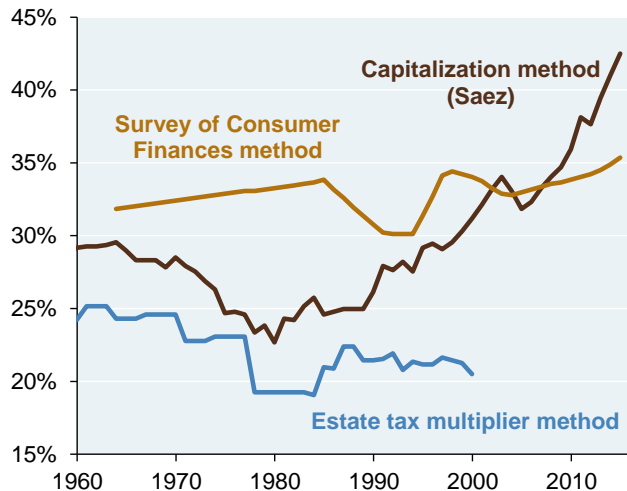


Source: "Using Tax Data to Measure Long-Term Trends in U.S. Income Inequality", Auten and Splinter (Treasury, JCT) 2016.

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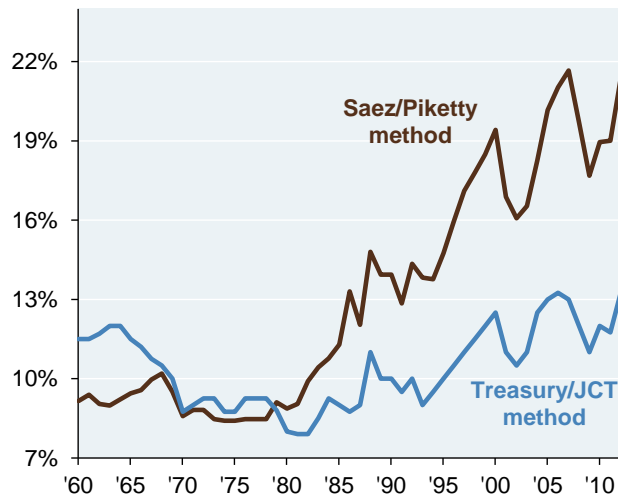
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