

# CalPERS Trust Level Review

## Economic and Market Overview




Period Ending December 31, 2017

Ted Eliopoulos, Chief Investment Officer  
Matt Flynn, Interim Chief Operating Investment Officer  
Eric Baggesen, Managing Investment Director  
John Rothfield, Investment Director

Investment Committee

February 12, 2018

## Trending ...

 <b>Positive</b>	 <b>Same Trend</b>	 <b>Negative</b>
<p><b>- (Modest) US GDP growth acceleration</b> 2.5% during 2017 vs 1.8% in 2016 and 2.0% in 2016</p> <p><b>- Capex ... actual and intentions</b> Business investment has accelerated and intentions suggest some forward momentum.</p> <p><b>- Hiring and comp intentions</b> Most surveys show very strong plans to hire and to pay higher comp.</p> <p><b>- US corporate earnings and sales</b> Very strong 'second wind' for US corporate sector starting mid 2017.</p> <p><b>- Mining investment</b> As energy prices rebounded, mining investment added 0.3% to GDP during 2017 vs -0.1% during 2016</p> <p><b>-Manufacturing</b> So far manufacturers have increased use of existing capacity but new plant build may be a future story.</p> <p><b>- Global trade and PMIs</b> Strong upswing since Spring 2016 and now IMF has carried it through its '18 and '19 world projections.</p>	<p><b>- US leverage</b> 8 1/2 years into the expansion, non financial debt is still exactly 250%/GDP</p> <p><b>- US housing</b> More gradual cycle than past ones - erosion of affordability but still elevated plans to buy.</p> <p><b>- External imbalances</b> US deficit (2+%/GDP faces) surpluses in Japan (4%+), Euro Area (3%+), and China (1%+)</p> <p><b>- Chinese growth</b> 2017 quarters ran 6.9, 6.9, 6.8, 6.8</p>	<p><b>- Tight labor</b> Labor market indicators show that there are not many healthy, skilled and short term unemployed left.</p> <p><b>- Low personal savings rate</b> At &lt; 2.4%, is as low as the late 00s, at a time when valuations are high.</p> <p><b>- Monetary accommodation unwind</b> QE unwind might be 'conditional', but we don't know if it can easily be turned back on.</p> <p><b>- \$ policy dilution and wider trade gap</b> Tariffs and trade deals don't address the savings shortfall that requires US' reliance on foreign capital</p> <p><b>- What tax reform can achieve</b> GOP policies may not deliver what's priced into the stock market/ financial conditions.</p> <p><b>- Geopolitical</b> To date markets have blown through geopolitical events = complacency.</p>

## US business cycle – most indicators still mid to late cycle

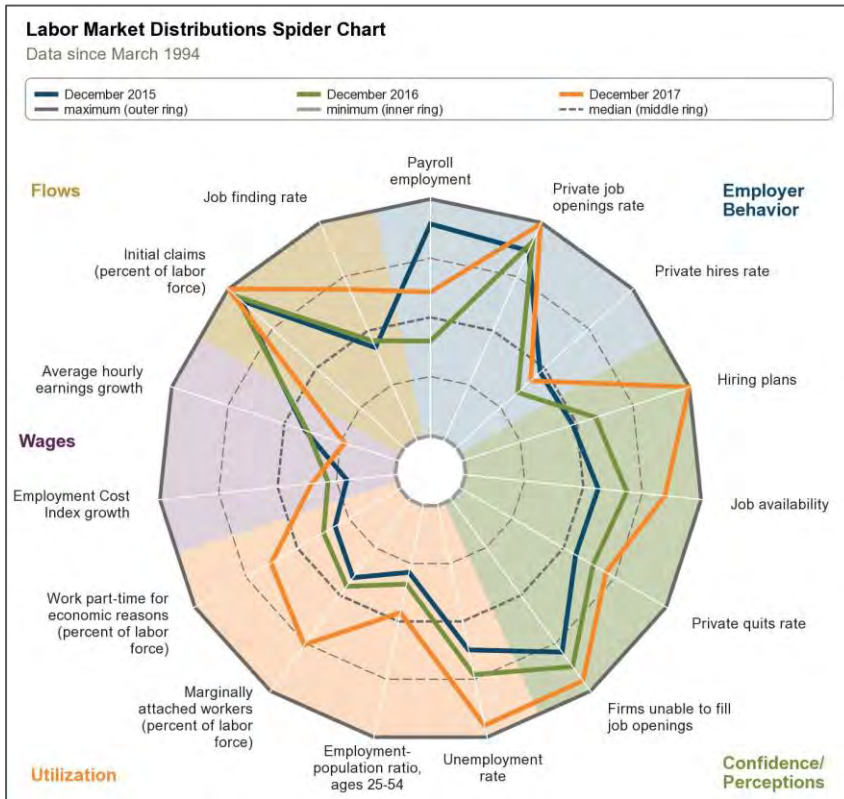
Labor Market	Early	Late	%
Want A Job per Job Offer			99%
Unemployment Rate			95%
Jobs Growth 12mo			42%
KC Fed Labor Market Conditions			6%
Emp/Pop ex aging			70%
Activity	Early	Late	%
National Activity Index			23%
Private Savings Ratio			89%
Consumer confidence			78%
Real Personal Disp. Income			42%
10yr UST vs 3mo LIBOR			56%
Quarterly	Early	Late	%
Profit share			19%
Current Account/GDP			35%
Leverage YoY			12%
Net Worth/DI			100%
Housing affordability			52%

### What to watch:

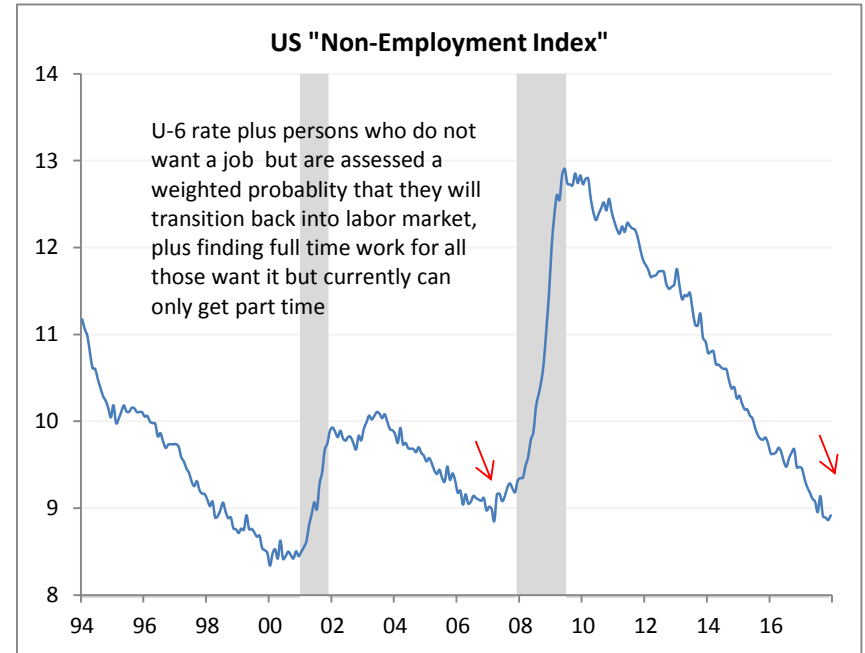
Labor Force Participation

Productivity

# Labor market indicators are mostly later cycle

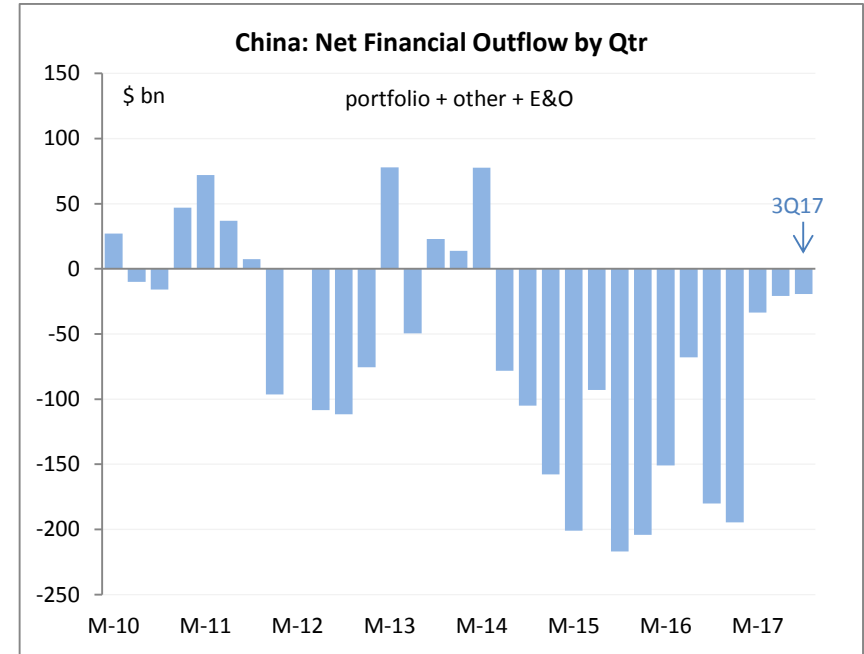
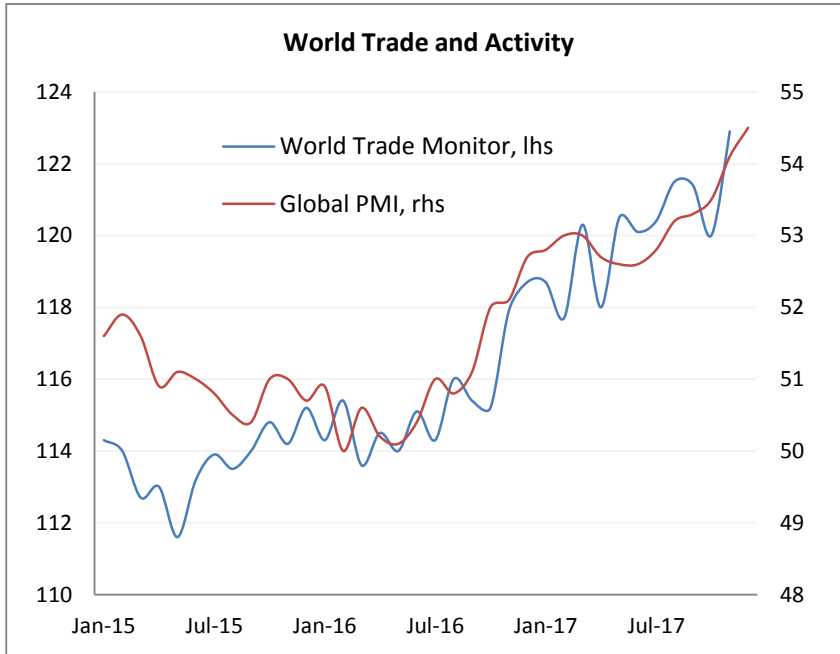


Few areas still have upside in the jobs market ... outside of wages



One measure of how much is left in the labor market.

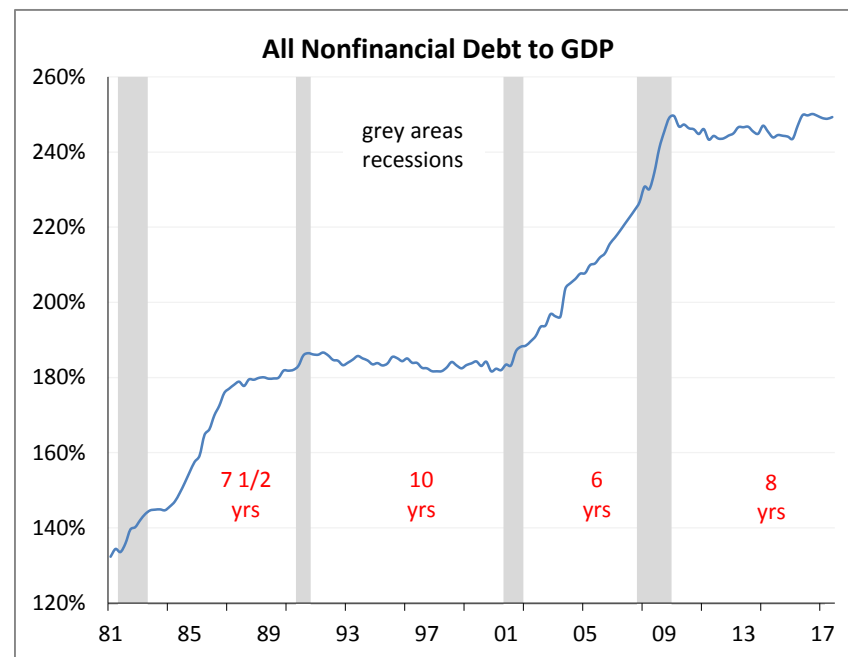
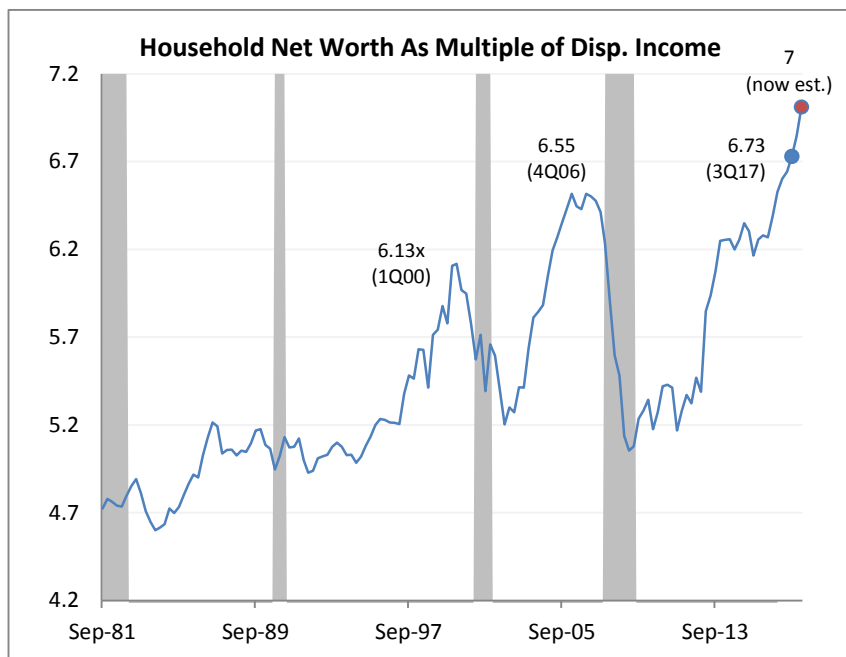
# Supportive global



Momentum sustained since Spring 2016

Financial leakages from China have stalled

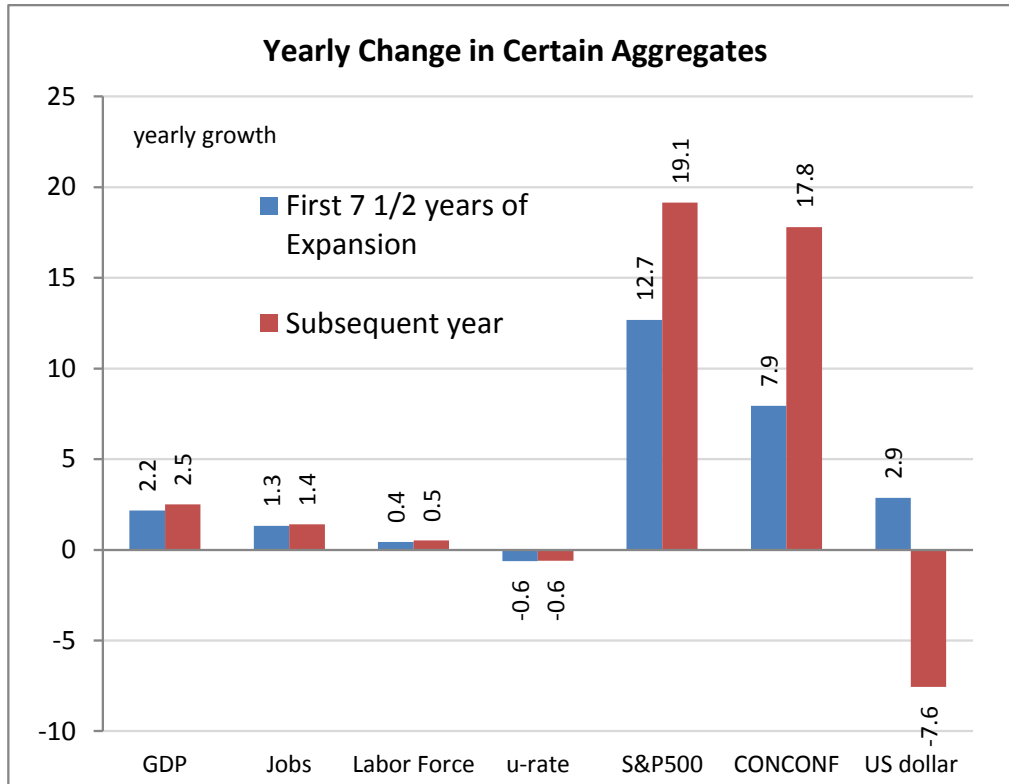
## Valuations (high) and leverage (steady)



There are some factors justifying higher valuations

Leverage is unchanged as a multiple of GDP since this expansion began

## Tax reform: Will 'success' align with markets?

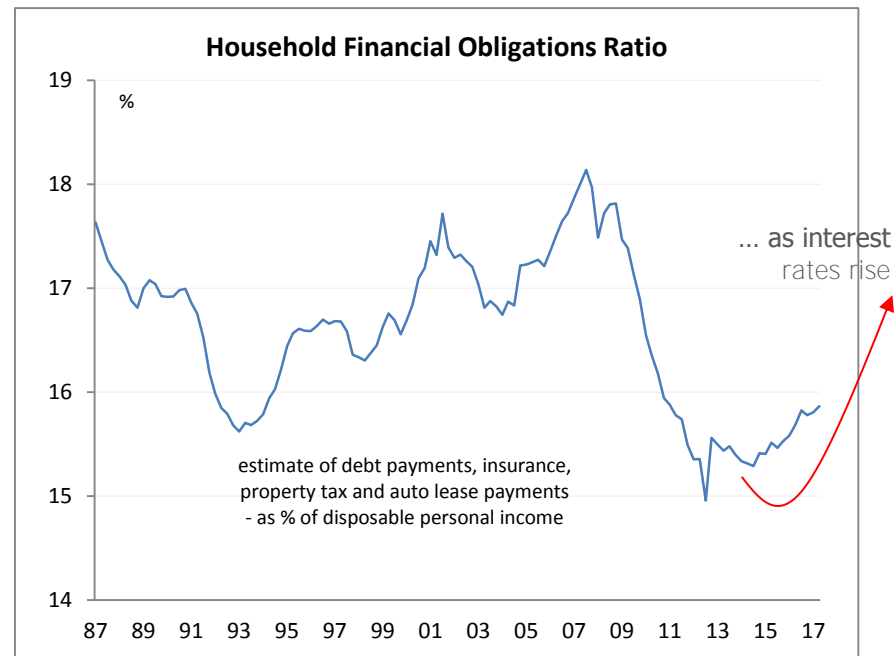
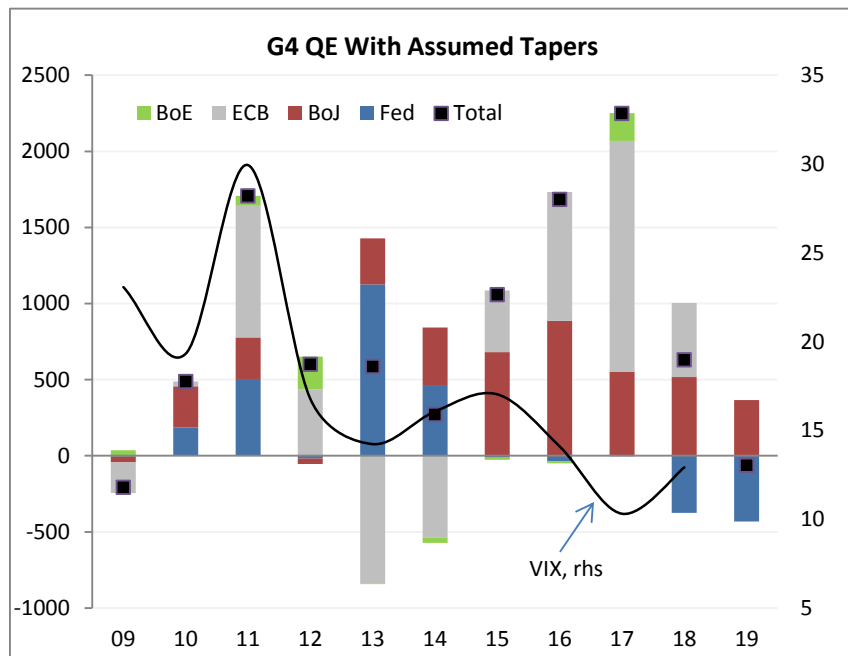


Markets have moved ahead of the economic outcomes, yet ...

- **Corporate** behavior typically responds to capacity usage and sales, rather than tax changes.
- **Personal** income tax cuts would be more effective if targeted to households with higher consumption propensity.
  - Worry about distributional impacts b/n States too;
  - Debated impact of past tax changes (60s, 80s, 90s, 00s);
  - Less impactful so far into an economic expansion.

See 'Special Topics' section

# Tax Reform: Monetary policy may dampen stimulatory effects



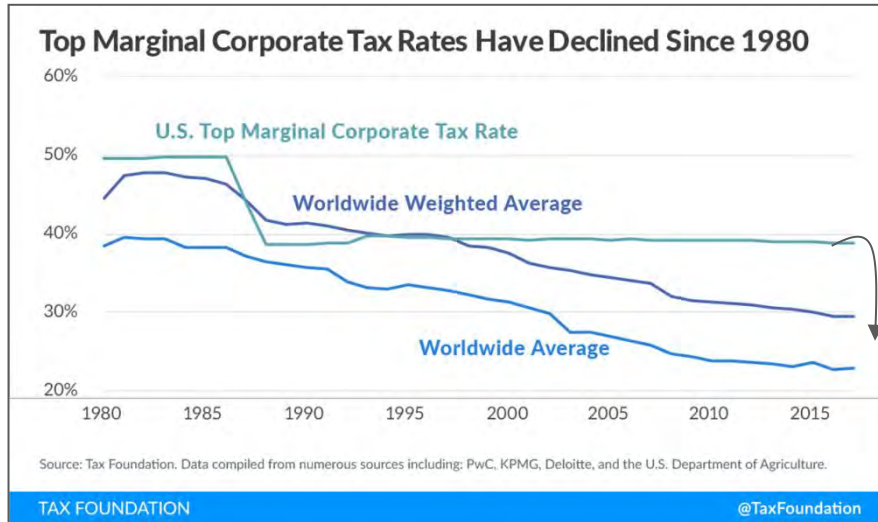


## Scenarios

DOWNSIDE (30%)	CENTRAL (45%)	UPSIDE (25%)
"Valuation and policy risks"	"Run Along At Growth Ceiling"	"Positive Synchronicity"
Policy mistakes and vol spike during monetary accommodation unwinds.	Secular factors continue, and there is a low tax package impact on labour force and productivity.	US reforms (surprisingly) unlock more productivity, labor force, hh formation.
Late cycle US stimulus increases inflation, rates and debt servicing.	Growth ceiling means winners and losers.	Global growth acceleration proceeds in spite of stronger currencies.
Risk that 'virtuous' cycle of balance sheet repair and spending unwinds.	Potential for some improvement in low end household formation.	Globally, infrastructure accelerates, tech continues to grow quickly.
US pivot to protectionism threatens global upswing and deficit financing.	Inflation tepid in spite of late cycle labor market.	Recent signs of bottoming in emerging markets morph into a virtuous cycle.
	Well signaled (and flexible) removal of stimulus here and abroad.	

# Impact of US Tax Reform: Advertised benefits not guaranteed

# US corporate tax – incremental investment and hiring determined by the effective rate

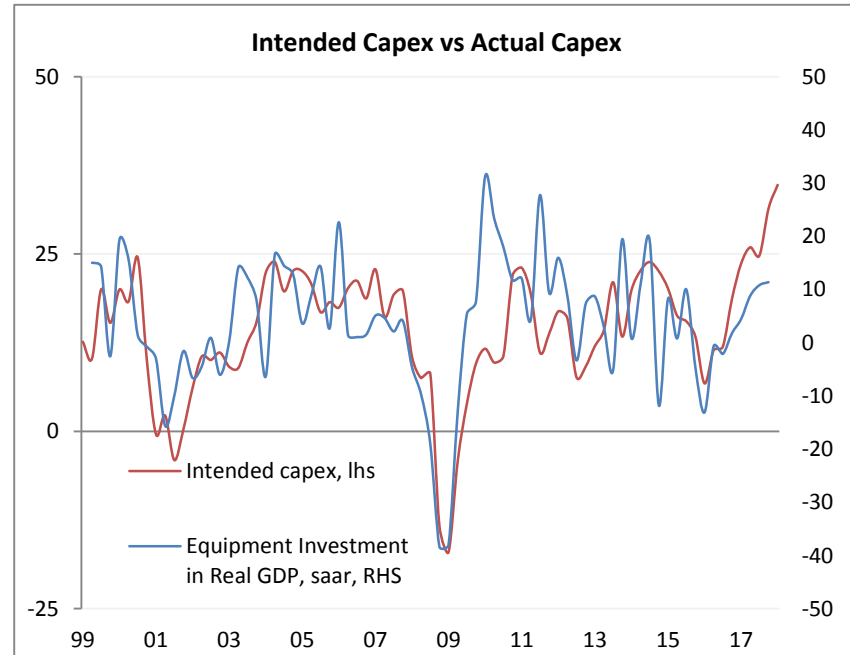
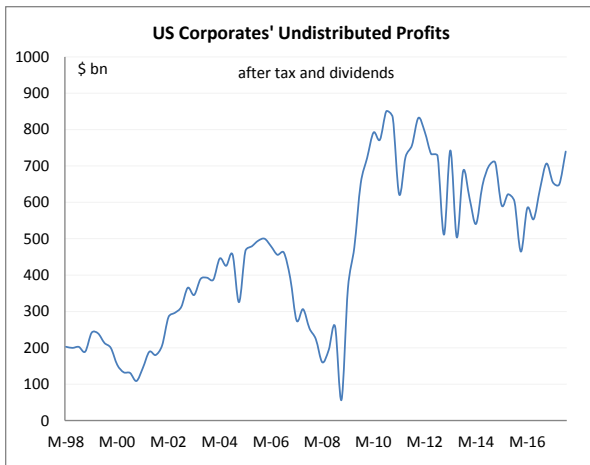
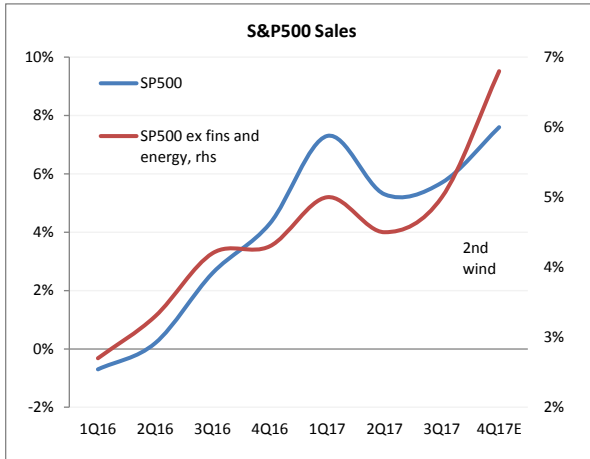


Source: Tax Foundation "Corporate Income Tax Rates around the World, September 2017"

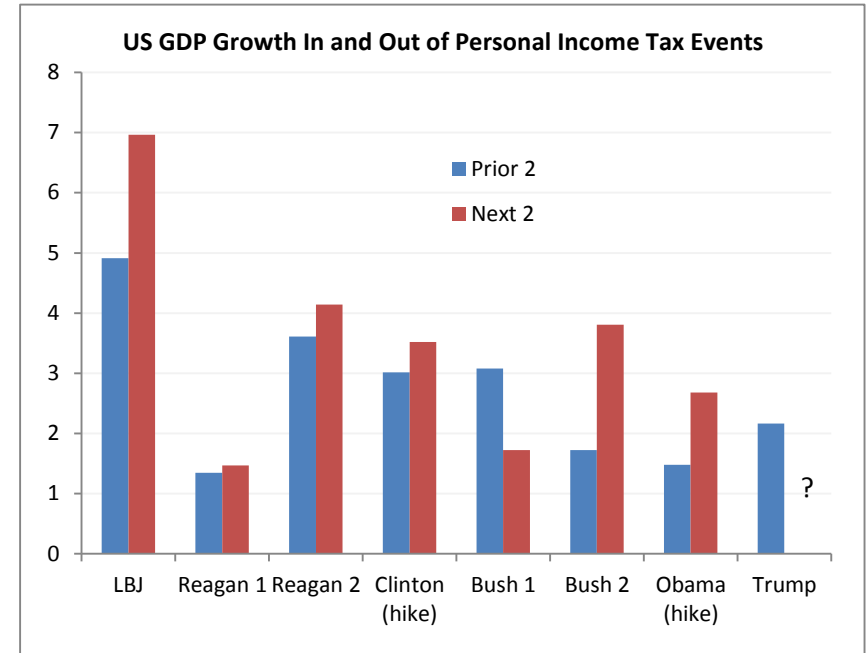
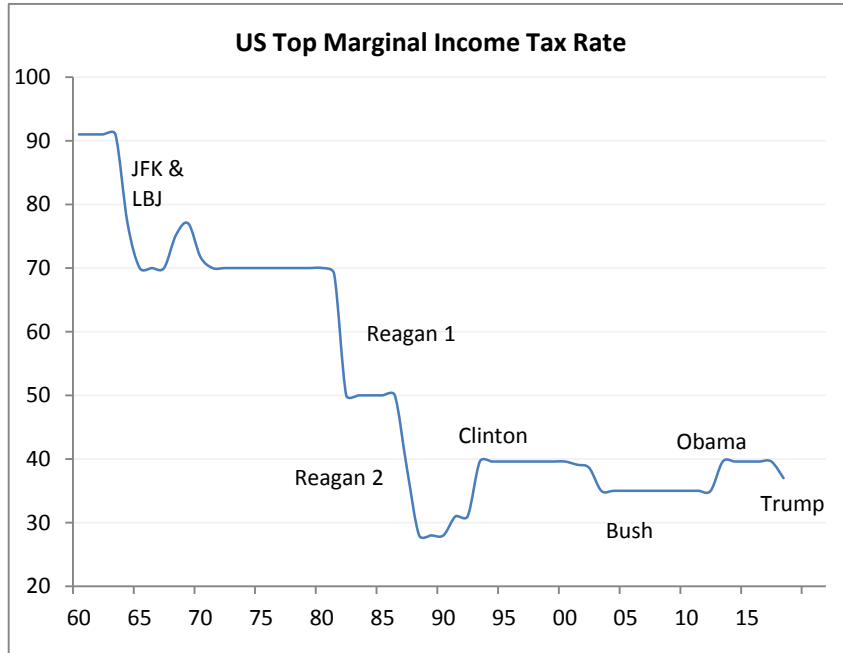
Top Statutory		Average		Effective	
US	39.1	Argentina	37.3	Argentina	22.6
Japan	37.0	Indonesia	36.4	US	18.6
Argentina	35.0	US	29.0	Japan	18.0
S.Africa	34.6	Japan	27.9	Brazil	17.0
Brazil	34.0	Italy	26.8	UK	15.7
India	32.5	India	25.6	Germany	15.5
Italy	31.4	S.Africa	23.5	India	15.0
Germany	30.2	Brazil	22.3	Mexico	11.9
Australia	30.0	Russia	21.3	Indonesia	11.8
Mexico	30.0	S.Korea	20.4	France	11.2
France	29.7	Mexico	20.3	Australia	10.4
Canada	26.1	France	20.0	China	10.0
China	25.0	Turkey	19.5	Canada	8.5
Indonesia	25.0	China	19.1	Saudi	8.4
S.Korea	24.2	Australia	17.0	S.Africa	6.2
UK	24.0	Canada	16.2	Turkey	5.1
Russia	20.0	Germany	14.5	Russia	4.4
Saudi	20.0	UK	10.1	S.Korea	4.1
Turkey	20.0			Italy	-23.5

Source: CBO "International Comparisons of Corporate Income Tax Rates", March 2017

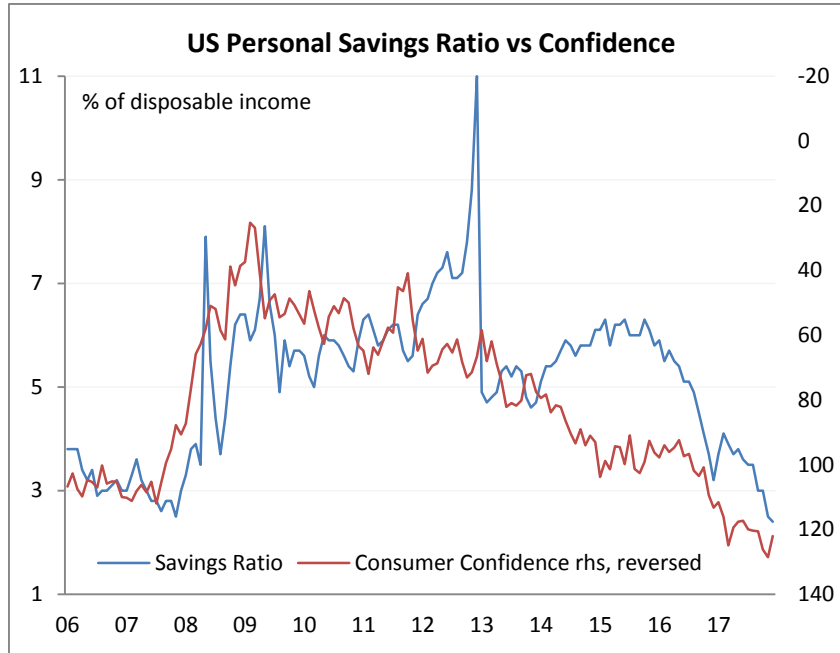
# US corporate tax – macro already favorable for hiring and investment



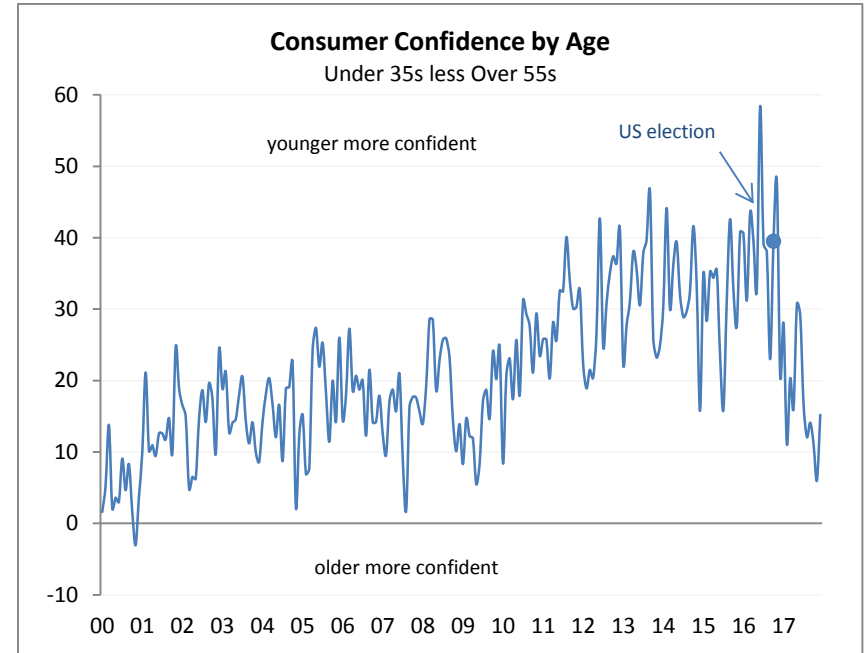
# US personal income tax – no agreement on counterfactuals



# US personal income tax – factors that reduce impact

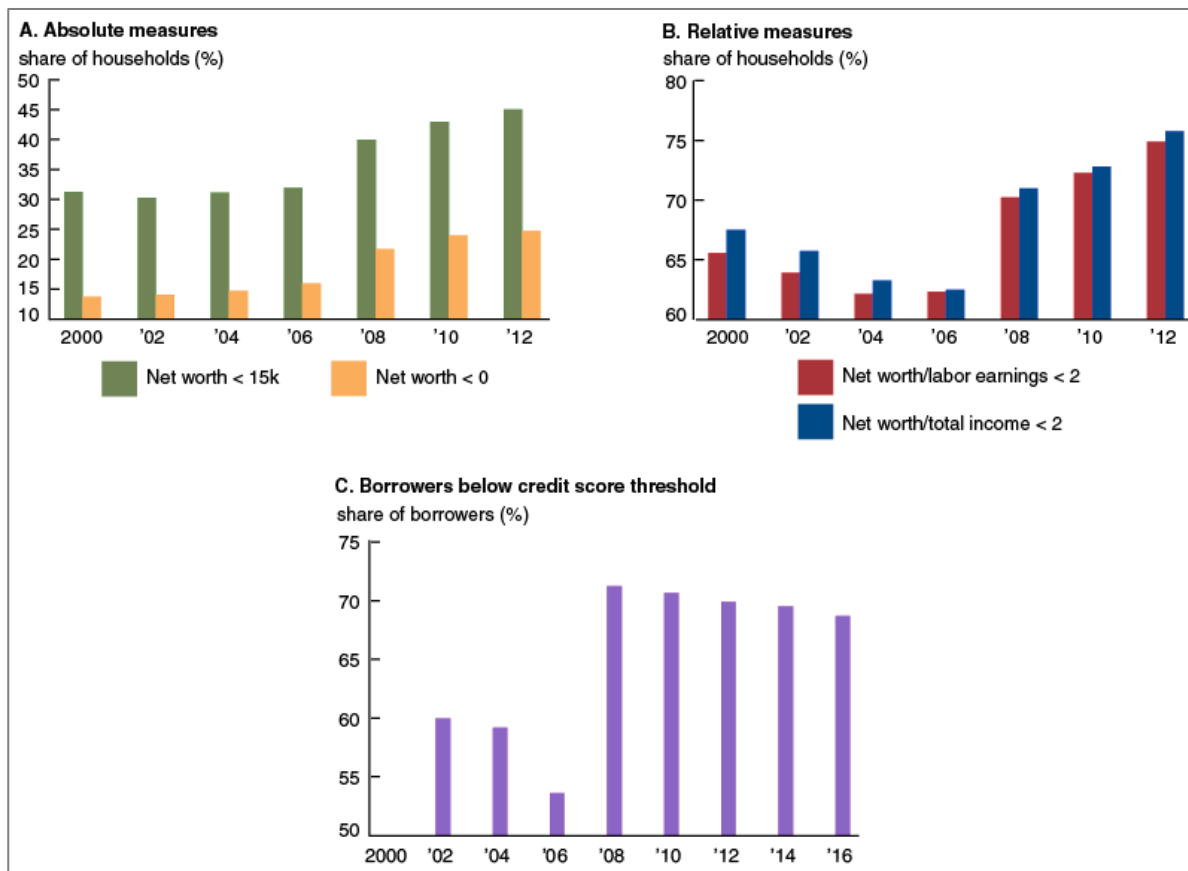


Savings ratio is already low



It's older (and wealthier) persons are already feeling most confident

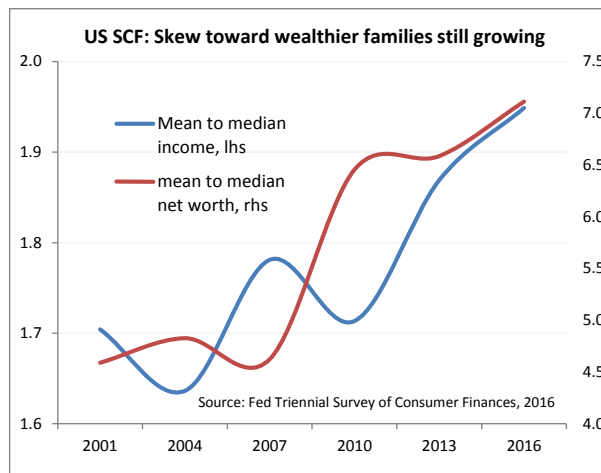
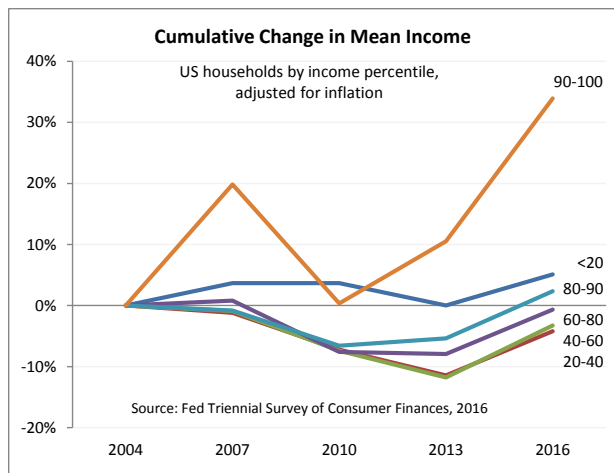
# Households: Inequality constraints have slowed recovery



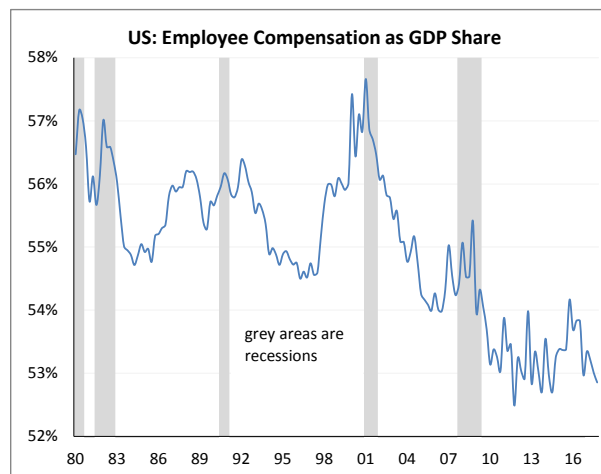
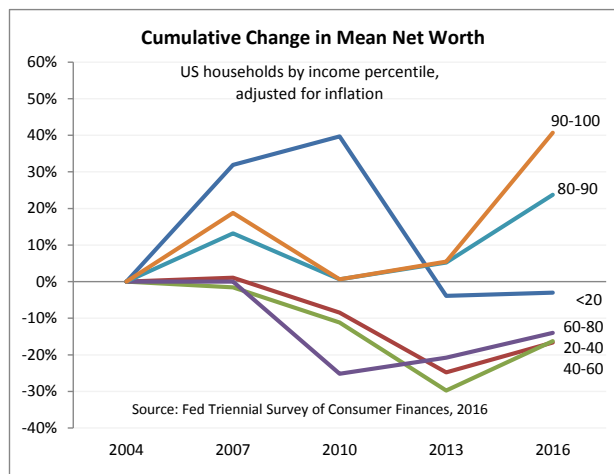
“Deterioration in the ability of households to borrow appears to not have recovered as of 2012, thus possibly contributing to the slow recovery that we have observed.”

Source: Chicago Fed Letter: “Inequality and recessions”, January 2018

# Households: Skew toward wealthier families still growing



Relative gains by high end cohorts continued through 2016 survey

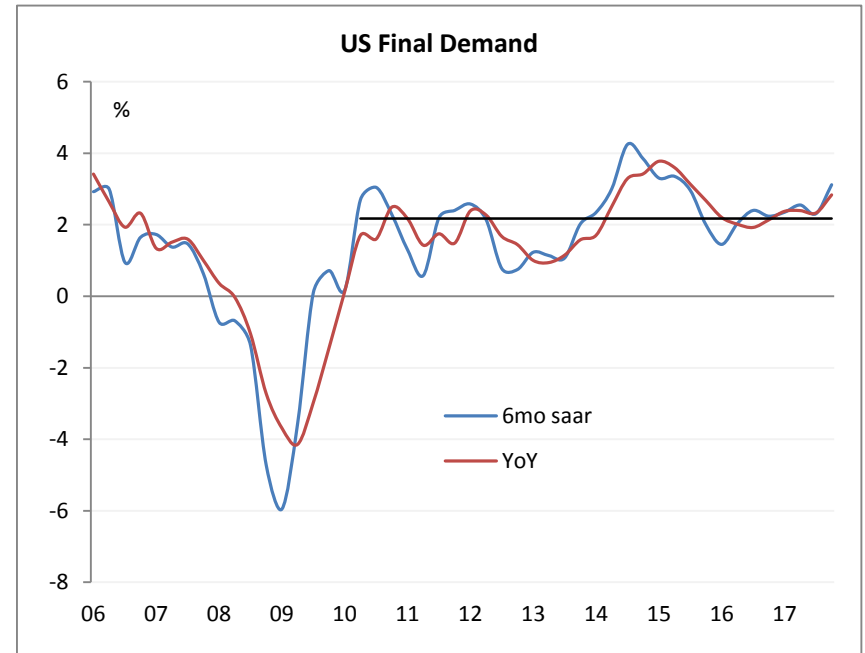
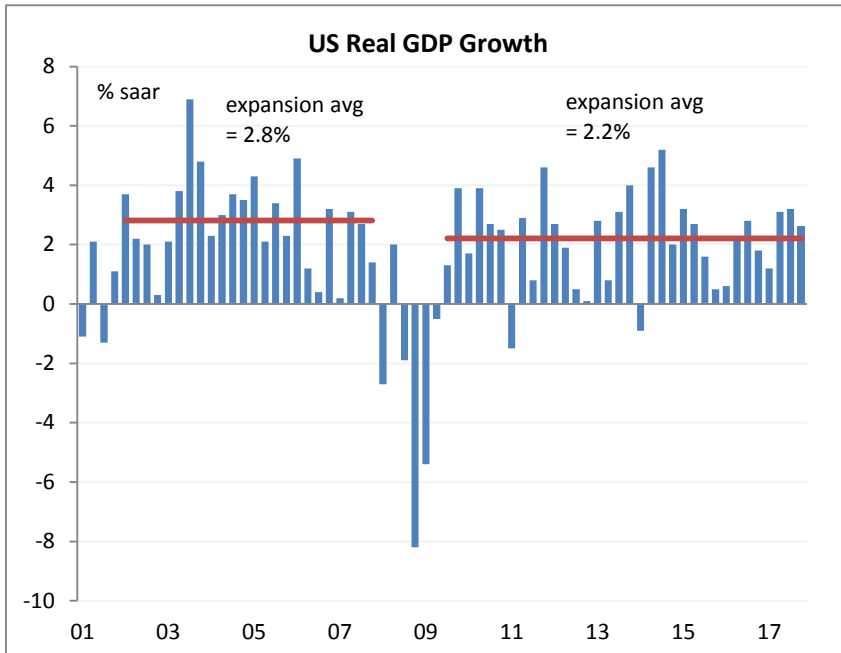


Employee Comp Share of GDP near lows.

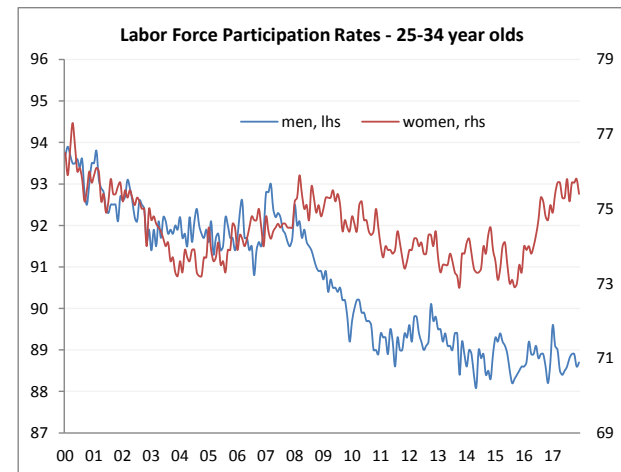
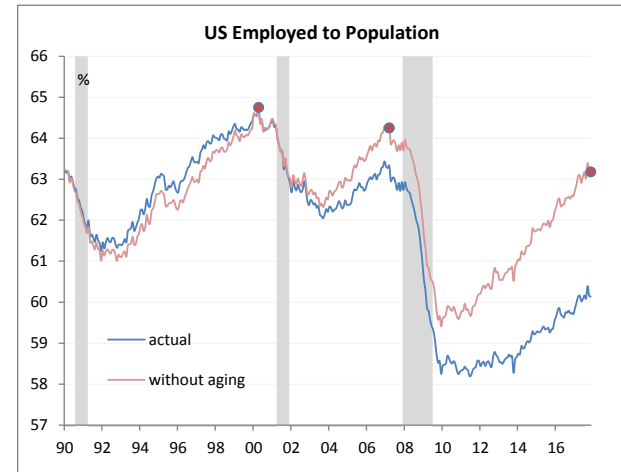


# Appendix: Additional Charts

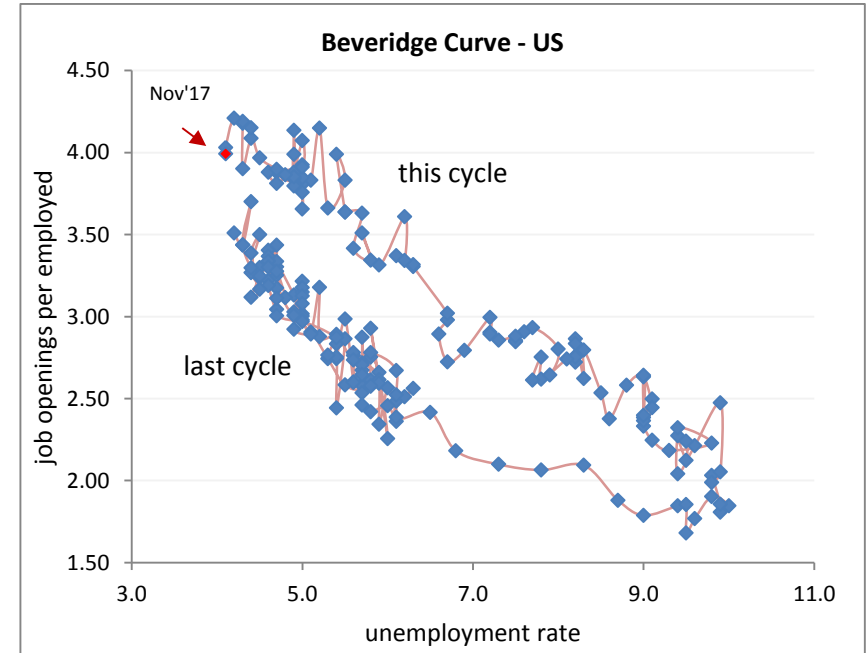
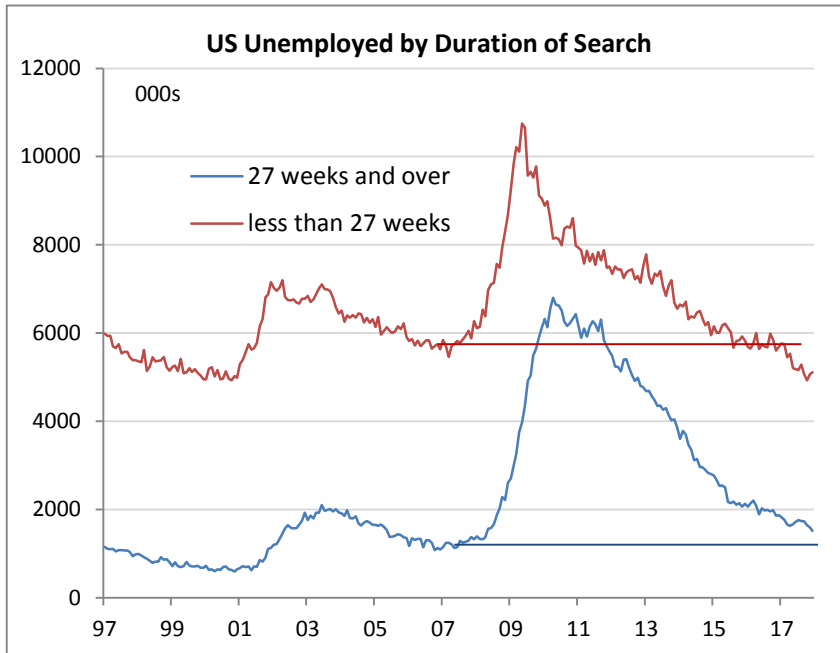
# US activity has picked up from the wobbles of '14-'16



# For jobs market, sourcing workers is an issue ...



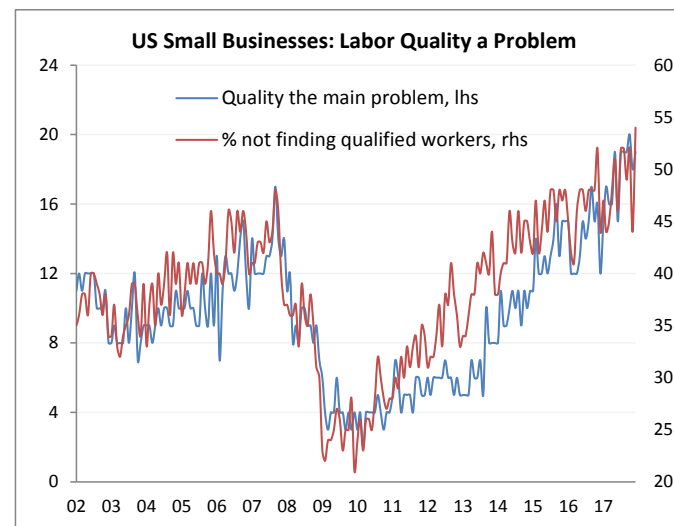
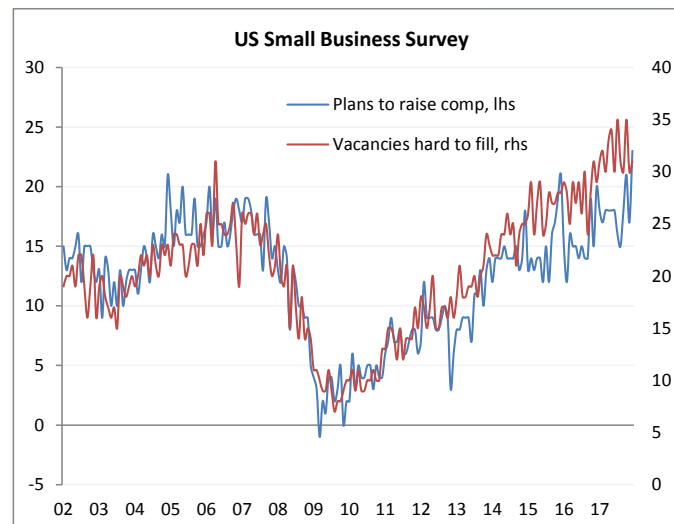
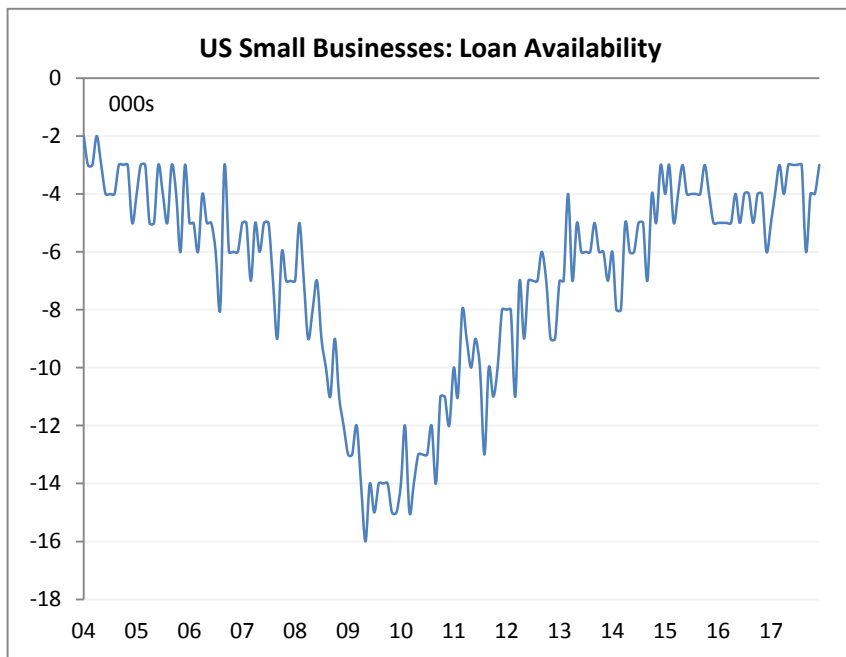
... more so with the requisite skills



Savings ratio is already low

In last cycle, this level of openings would have resulted in much lower u-rate already

# Finding suitable labor is the key issue for small businesses

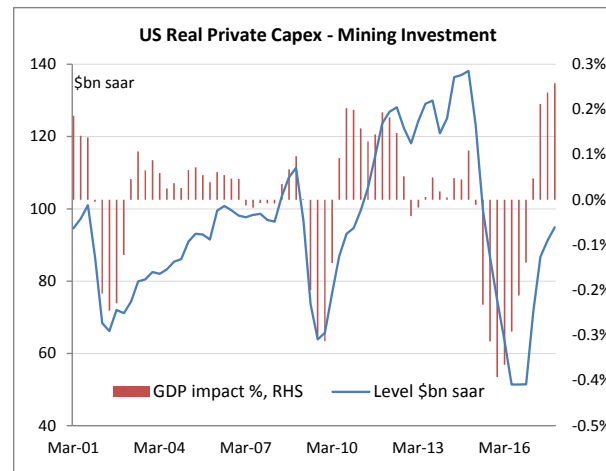
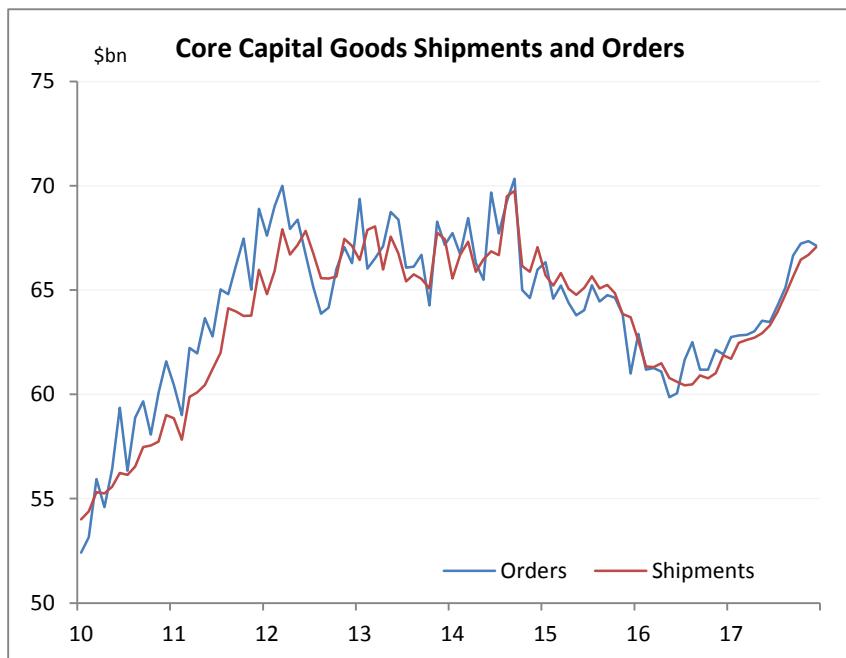


Loan availability is fine ... good worker availability is not.

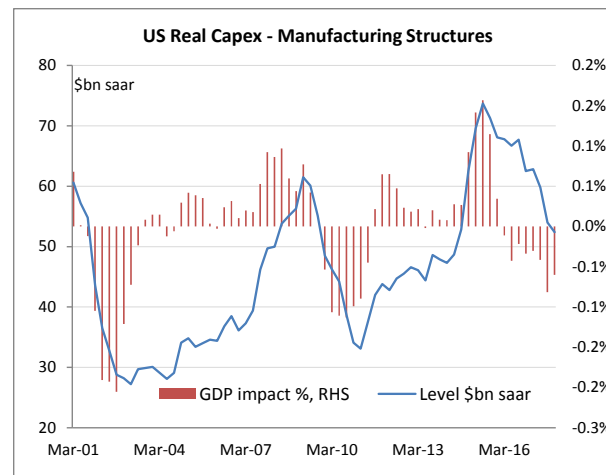
## Consumer – very strong finish to last year

Consumer Spending, Yr to ...			Dec qtr
	Dec'16	Dec'17	(saar)
Goods	3.7%	5.0%	10.3%
Autos	9.7%	2.4%	18.2%
Household	2.2%	6.9%	11.1%
TVs etc	-2.1%	3.6%	7.2%
Computers etc	6.3%	10.4%	14.5%
Sporting	-5.0%	4.8%	3.1%
Fuel	9.5%	6.7%	50.8%
Groceries	1.6%	4.5%	7.5%
Services	5.1%	4.4%	4.9%
Healthcare	5.7%	4.0%	5.1%
Housing	5.0%	4.6%	4.6%
Rest, hotels	2.4%	4.2%	4.1%
Financial	6.7%	10.0%	10.4%
Cell phone	2.8%	0.3%	5.4%
Air travel	5.0%	-0.8%	-2.2%
PCE	4.7%	4.6%	6.7%

# Business capex - improving



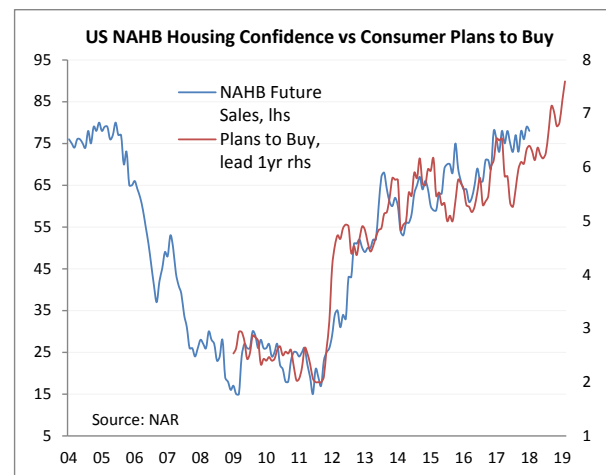
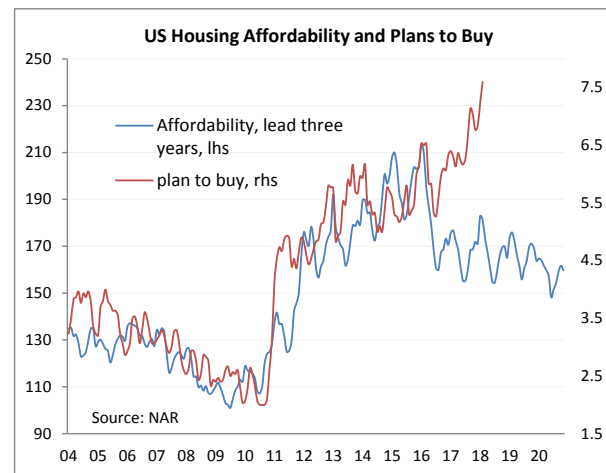
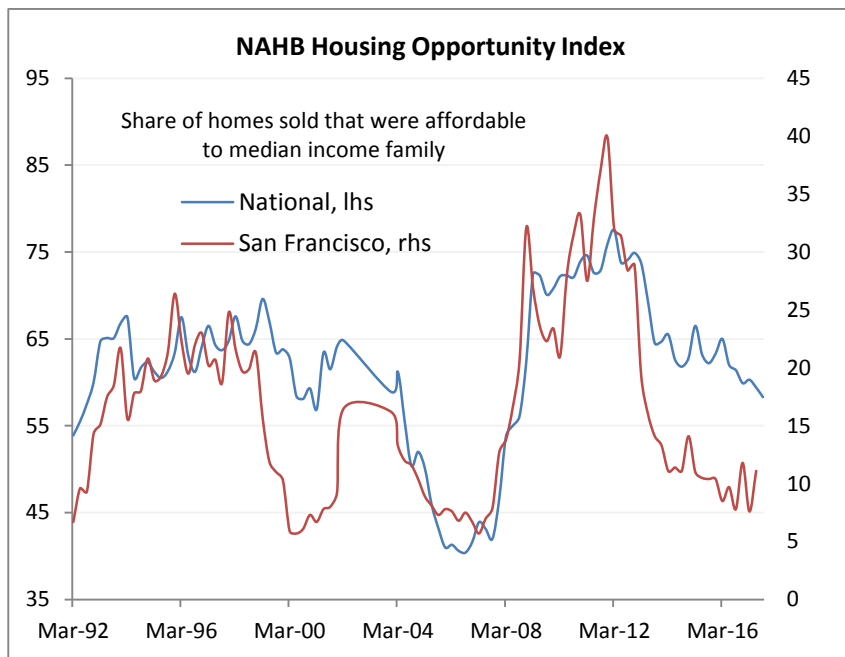
Mining investment swing added 0.3% to US 2017 GDP, vs -0.1% in 2016



To date, upswing in manufacturing is in capacity utilization, not new capacity

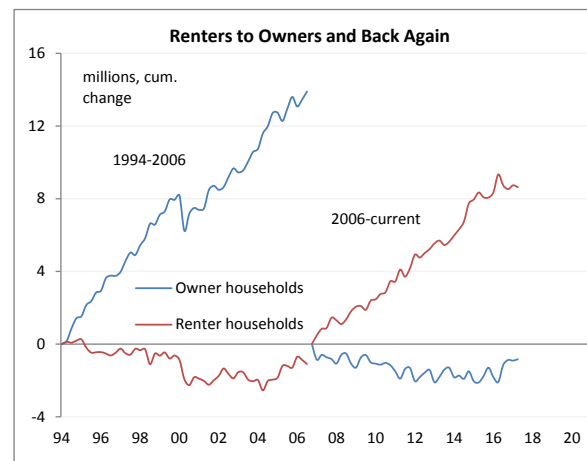
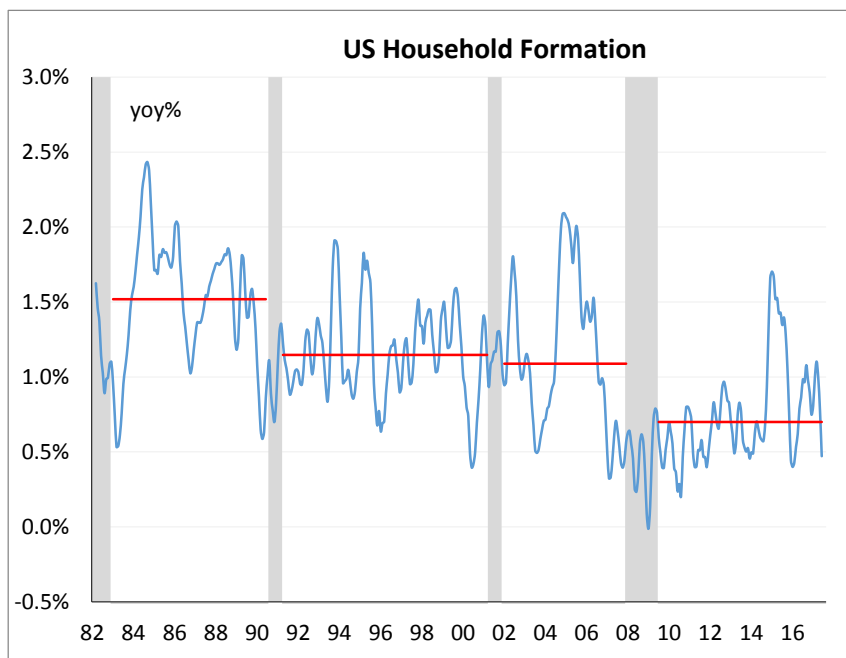
Steady upswing predated GOP ascension

# Housing – affordability normalizes but plans to buy rocketing

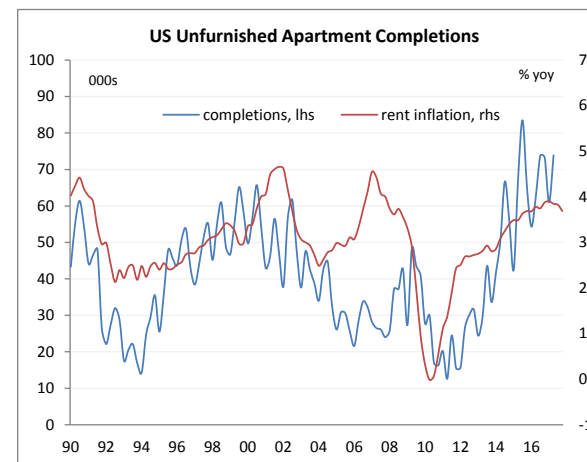




# Housing – further upside despite demographic headwinds



Owner households only starting to awaken



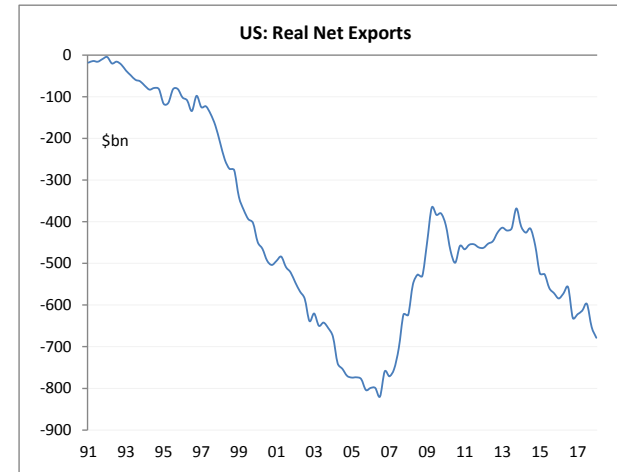
Strong completions responding to fast rents growth

# Foreign Trade – a risk

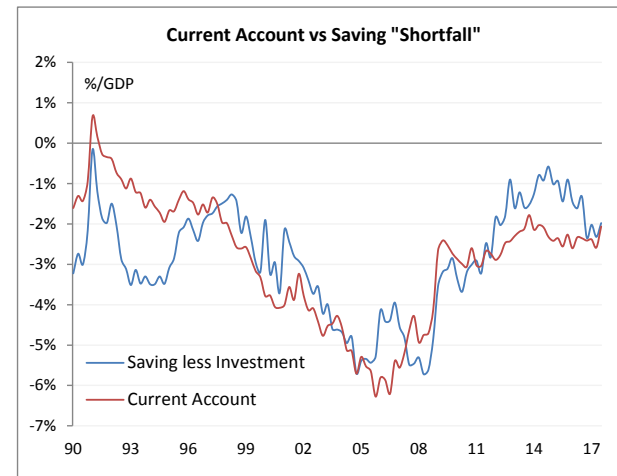
US Balance of Trade in Goods and Services with:

\$bn	Total	Canada	Mexico	Japan	Korea	China	Germany	UK	Other EU	OPEC
2001	-362	-48	-26	-55	-12	-81	-31	2	-29	-34
2002	-419	-44	-33	-57	-12	-102	-40	-2	-32	-31
2003	-494	-47	-37	-54	-12	-123	-43	-4	-39	-50
2004	-610	-61	-42	-61	-18	-162	-50	-1	-45	-70
2005	-714	-72	-45	-67	-13	-201	-54	-2	-52	-90
2006	-762	-61	-59	-76	-10	-234	-55	2	-52	-100
2007	-705	-53	-69	-72	-9	-257	-51	11	-40	-119
2008	-709	-61	-59	-60	-7	-263	-50	9	-18	-169
2009	-384	-3	-42	-28	-5	-220	-32	10	-1	-52
2010	-495	-6	-58	-43	-4	-261	-38	9	-16	-86
2011	-549	-11	-57	-45	-5	-279	-53	15	-20	-113
2012	-537	-5	-54	-58	-8	-295	-66	12	-23	-83
2013	-462	-4	-47	-59	-9	-295	-73	5	-16	-49
2014	-490	-11	-51	-54	-15	-315	-80	11	-25	-29
2015	-500	4	-58	-55	-19	-334	-77	12	-37	30
2016	-505	8	-63	-57	-18	-309	-67	15	-41	18
2017*	-552	3	-70	-56	-11	-331	-69	14	-44	9

\* three quarters at an annual rate



In underlying terms the US trade gap is getting wider ... and a drag on growth



Ultimately it reflects the savings-investment gap nationally

Trade deals or tariffs unlikely to narrow the US trade deficit

## Global - IMF raises World outlook

**Table 1. Overview of the World Economic Outlook Projections**

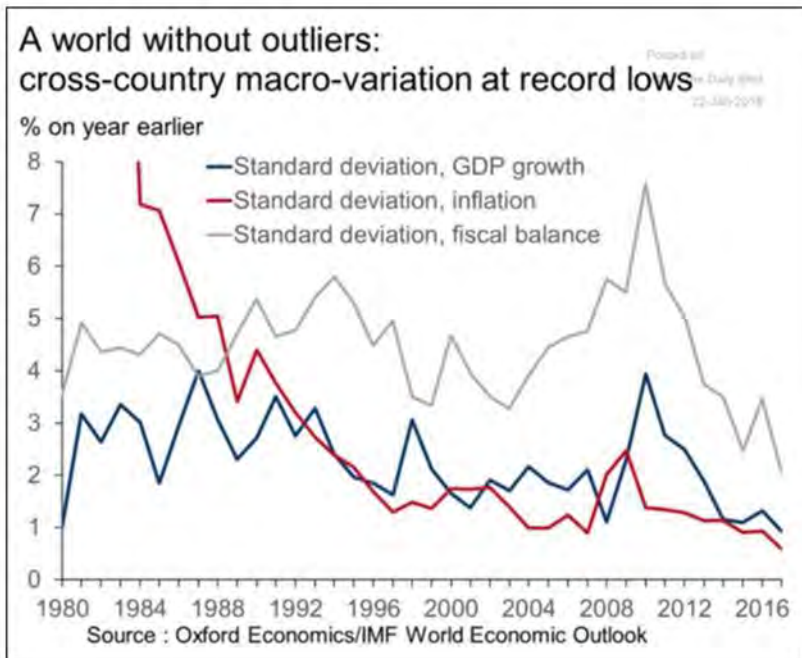
(Percent change unless noted otherwise)

	Year over Year						
	2016	Estimate		Projections		Difference from October 2017 WEO Projections 1/	
		2017	2018	2019	2018	2019	
<b>World Output</b>	<b>3.2</b>	<b>3.7</b>	<b>3.9</b>	<b>3.9</b>	<b>0.2</b>	<b>0.2</b>	
<b>Advanced Economies</b>	<b>1.7</b>	<b>2.3</b>	<b>2.3</b>	<b>2.2</b>	<b>0.3</b>	<b>0.4</b>	
United States	1.5	2.3	2.7	2.5	0.4	0.6	
Euro Area	1.8	2.4	2.2	2.0	0.3	0.3	
Germany	1.9	2.5	2.3	2.0	0.5	0.5	
France	1.2	1.8	1.9	1.9	0.1	0.0	
Italy	0.9	1.6	1.4	1.1	0.3	0.2	
Spain	3.3	3.1	2.4	2.1	-0.1	0.1	
Japan	0.9	1.8	1.2	0.9	0.5	0.1	
United Kingdom	1.9	1.7	1.5	1.5	0.0	-0.1	
Canada	1.4	3.0	2.3	2.0	0.2	0.3	
Other Advanced Economies 3/	2.3	2.7	2.6	2.6	0.1	0.1	
<b>Emerging Market and Developing Economies</b>	<b>4.4</b>	<b>4.7</b>	<b>4.9</b>	<b>5.0</b>	<b>0.0</b>	<b>0.0</b>	
Commonwealth of Independent States	0.4	2.2	2.2	2.1	0.1	0.0	
Russia	-0.2	1.8	1.7	1.5	0.1	0.0	
Excluding Russia	1.9	3.1	3.4	3.5	0.1	0.0	
Emerging and Developing Asia	6.4	6.5	6.5	6.6	0.0	0.1	
China	6.7	6.8	6.6	6.4	0.1	0.1	
India 4/	7.1	6.7	7.4	7.8	0.0	0.0	
ASEAN-5 5/	4.9	5.3	5.3	5.3	0.1	0.0	
Emerging and Developing Europe	3.2	5.2	4.0	3.8	0.5	0.5	
Latin America and the Caribbean	-0.7	1.3	1.9	2.6	0.0	0.2	
Brazil	-3.5	1.1	1.9	2.1	0.4	0.1	
Mexico	2.9	2.0	2.3	3.0	0.4	0.7	
Middle East, North Africa, Afghanistan, and Pakistan	4.9	2.5	3.6	3.5	0.1	0.0	
Saudi Arabia	1.7	-0.7	1.6	2.2	0.5	0.6	

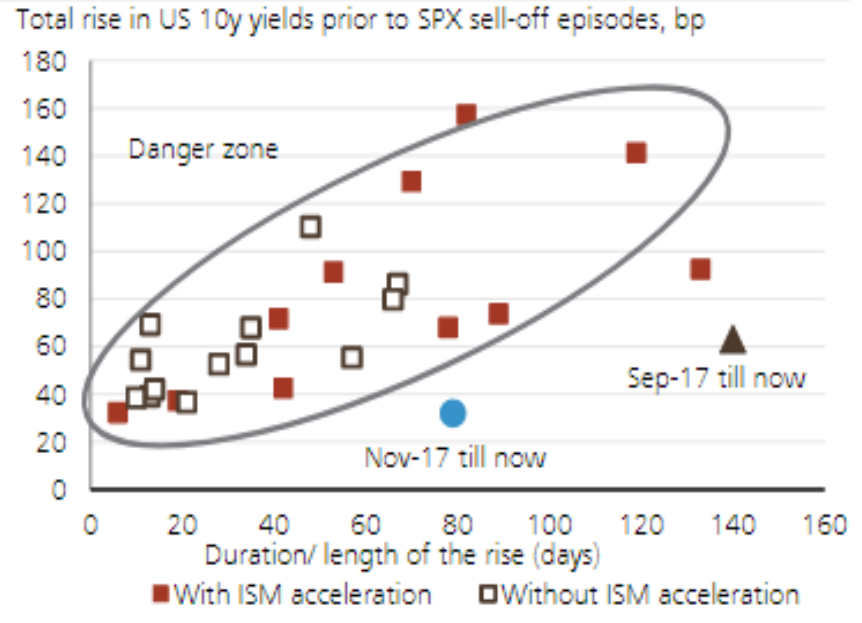
Latest revision (1/18 vs 10/17) reflects increased global growth momentum and the expected impact of the recently approved U.S. tax policy changes.

“On the downside (risks), rich asset valuations and very compressed term premiums raise the possibility of a financial market correction, which could dampen growth and confidence ... a possible trigger is a faster-than-expected increase in advanced economy core inflation.

... but there are risks



Falls in volatility and increases in global economic and asset price movements potentially create risk



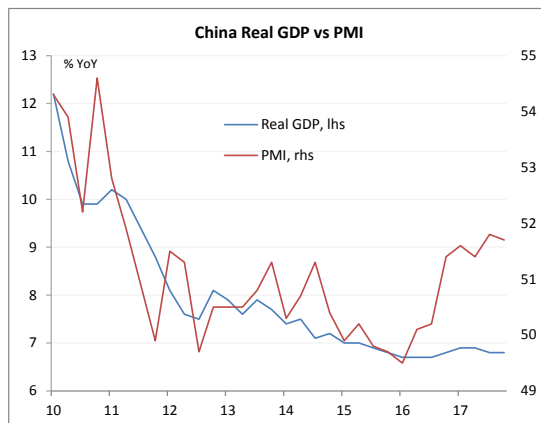
Source: Bloomberg, Haver, UBS

Historically, increases in yields impact other asset classes if they move too far, too fast

# China – stable for now



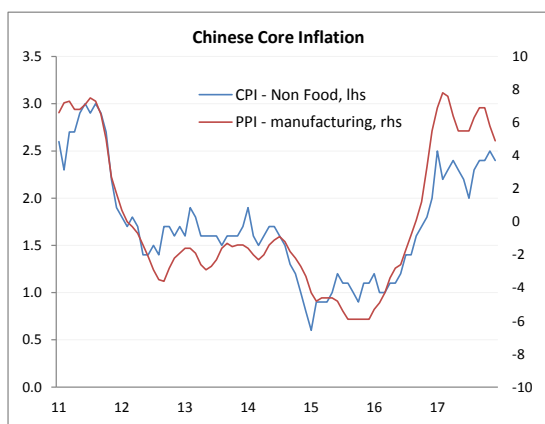
Successful soft landing



Real GDP stable, PMI stronger



Base effects have slowed industrial growth



Higher inflation has produced some tightening

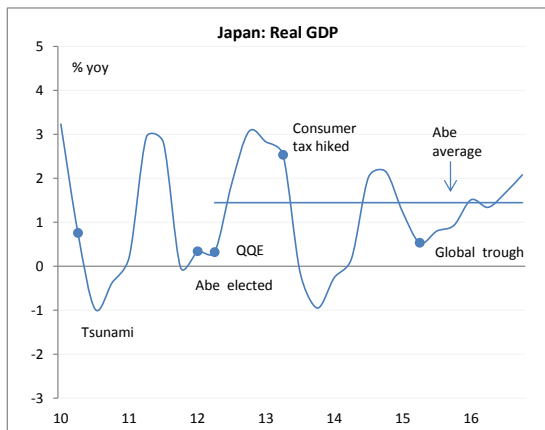


External surplus back to pre super-cycle rate

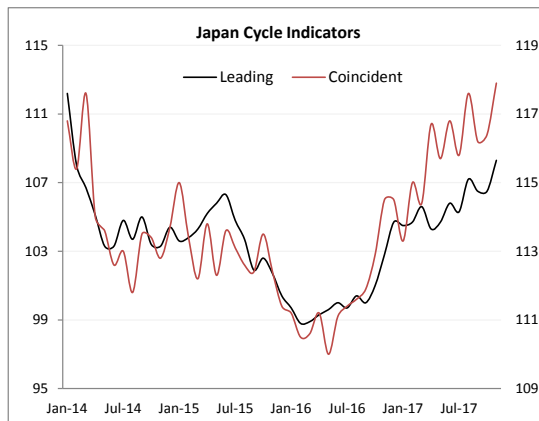


Reserves rebuild helped by softer dollar

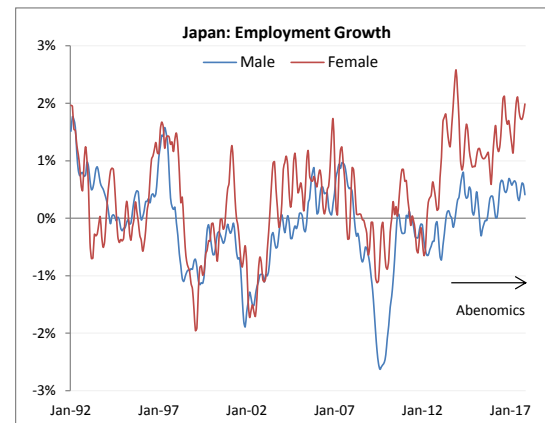
# Japan – central bank will keep policy easy into 2019-20



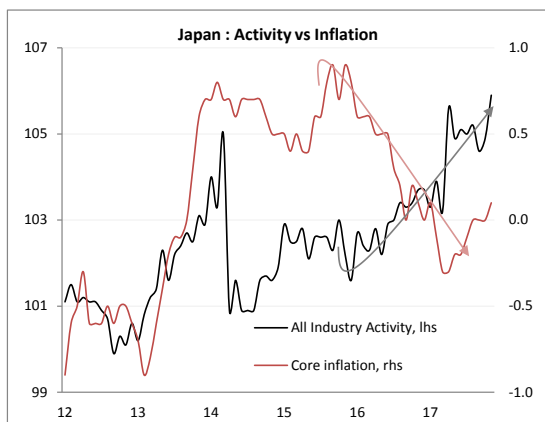
GDP growth has risen above potential



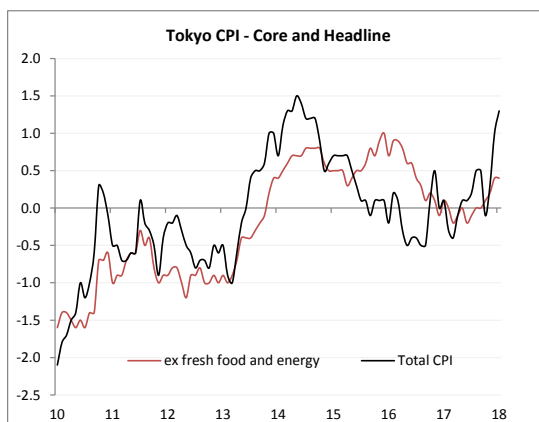
Leading indicators have improved



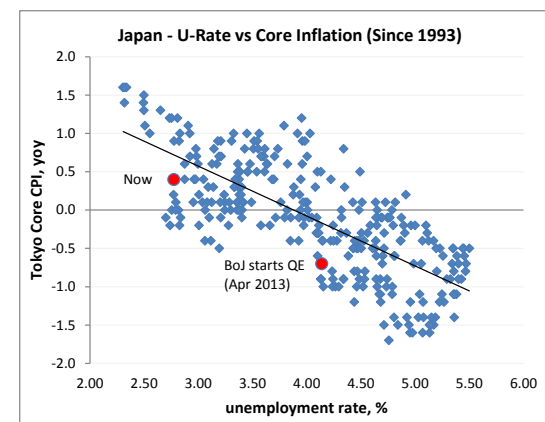
Strong growth in female participation/ jobs



Inflation response has to date been tepid ...

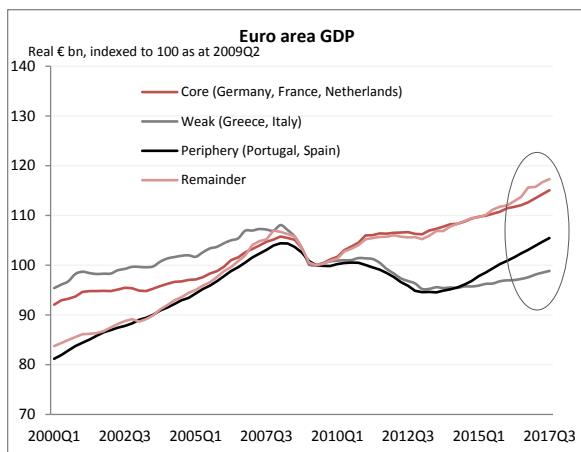


although headline boosted buy fresh food

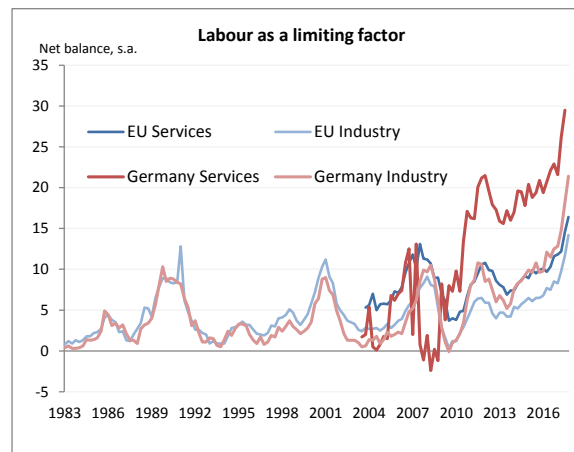


Core rate unlikely to approach 2%

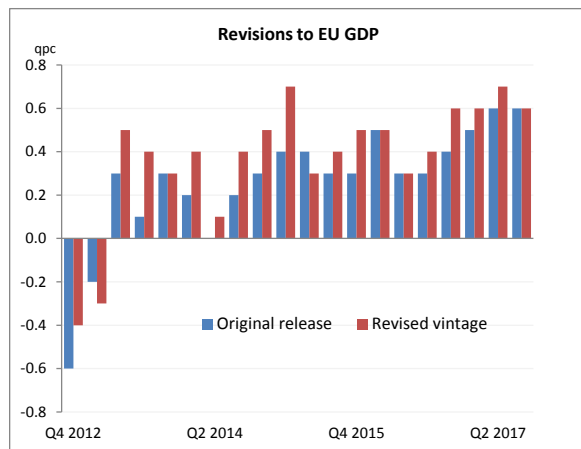
# Euro Area - growth momentum continues



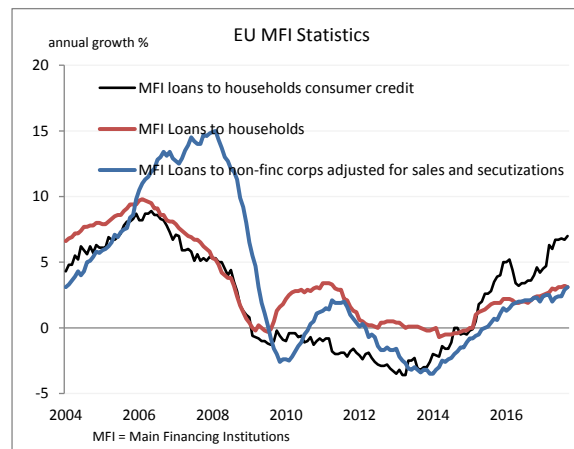
Growth is no longer a peripheries story



France in 2017 and now Germany is the next economy gaining speed



Growth keeps being revised up



NFC loan growth is key for ECB



## Euro Area – risks remain

### Spain

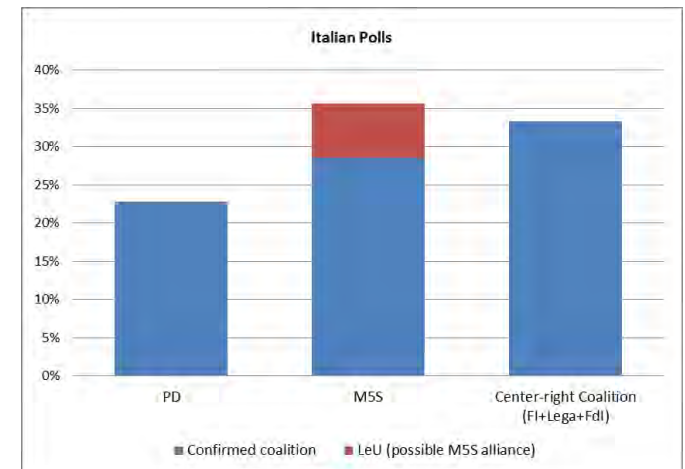
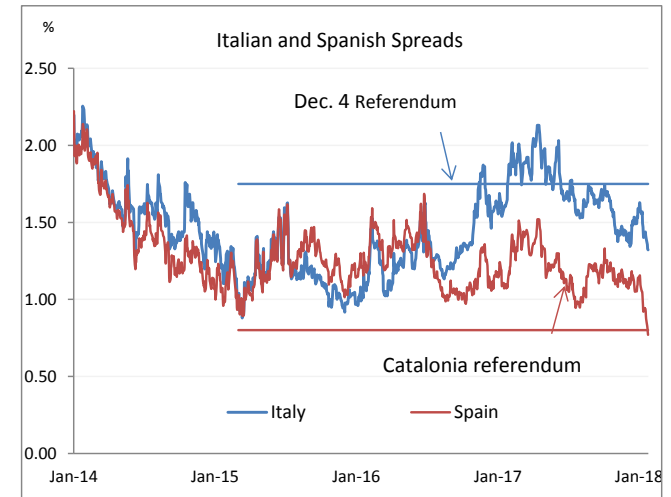
- Pro-secessionists won with a slim majority. Catalan Parliament proposes Puigdemont as Catalan President.
  - Puigdemont is in exile in Belgium;
  - Any candidate is required to physically and personally address the Parliament;
  - The Spanish central government has indicated immediate incarceration upon his return
- Near term mild underperformance due to headline risk.

### Italy

- Election date finalized: March 4
- Untested new electoral system
- Current polls suggest it will be a tight race between M5S and center-right coalition;
- A center-right win will smooth out some extremism but unlikely to take any necessary reforms and may be more fiscally liberal.
- Risk to Italy – yield underperformance.

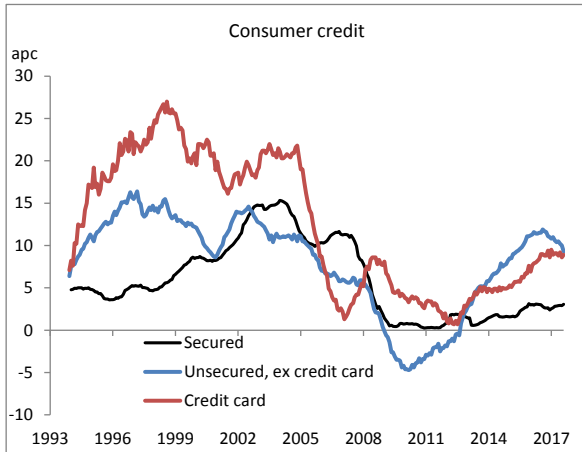
### Germany coalition government negotiations

- Formal talks are underway between CDU and SPD
- Little risk as party differences are not substantial from a markets' perspective
- Current government remains in place until a new one is appointed
- Until (or if) new elections are called, risk to market is low.

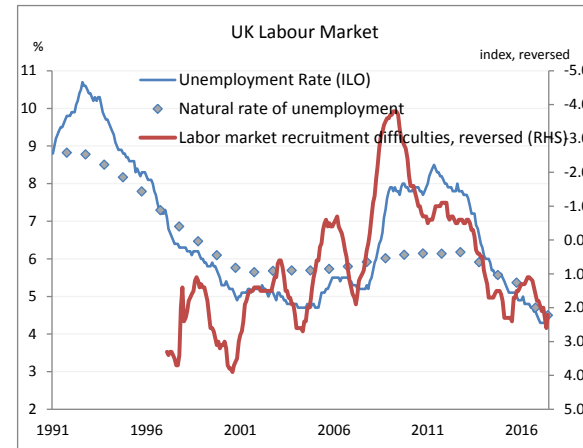




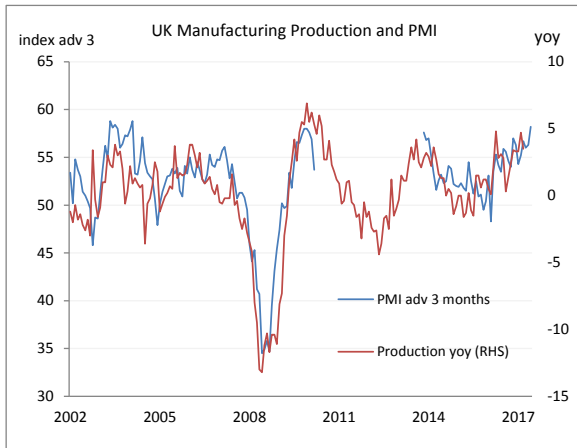
# UK - doing better than expected



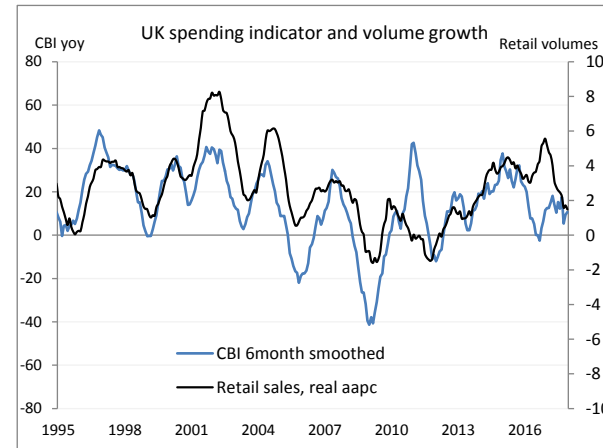
Credit strongest in a decade



Very tight labor market



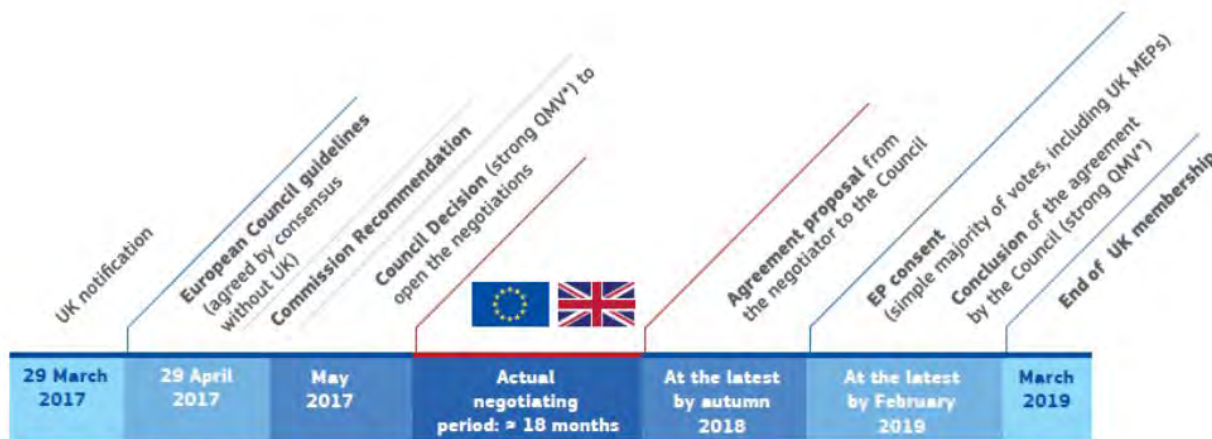
Continued growth, supported by long Brexit transition period and weaker currency



Spending is slowing but remains stronger than expected by Bank of England

# UK Brexit – shaping up something similar to Norwegian model

Chart 1 The EU's Brexit timeline



\* **Strong QMV** = 72% of the 27 Member States, i.e. 20 Member States representing 65 % of the EU 27 population.

Source: EU Commission

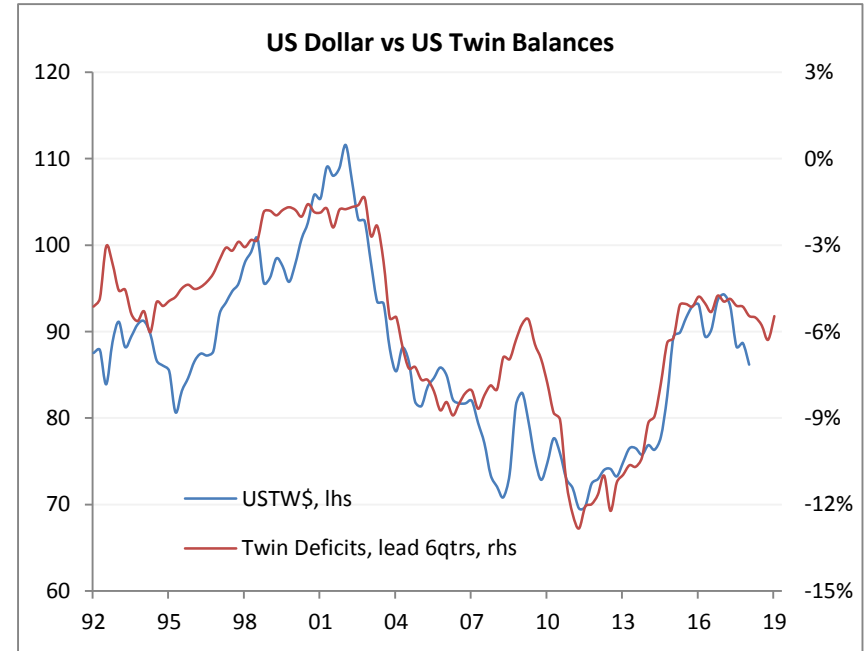
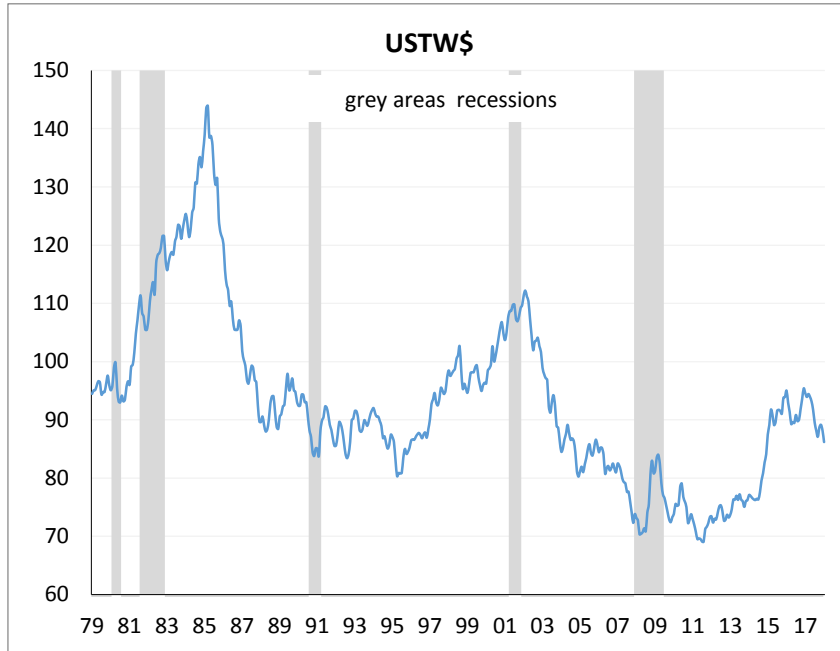
## The end position is looking clearer if negotiations continue – Norwegian-type model

- UK agreed no physical border within Ireland .... Implies no border between mainland Ireland (EU) and the UK;
- UK wants full access to Single market but control over immigration;
- EU wants to retain freedoms for citizens.

Little time to negotiation a trade deal.

EU putting on pressure to put current agreement s (non-trade) into UK legislation.

# US dollar – no guarantee of strength



US deficits can be difficult to fund during an expansion

... especially if twin deficits are rising