



The Global Backdrop

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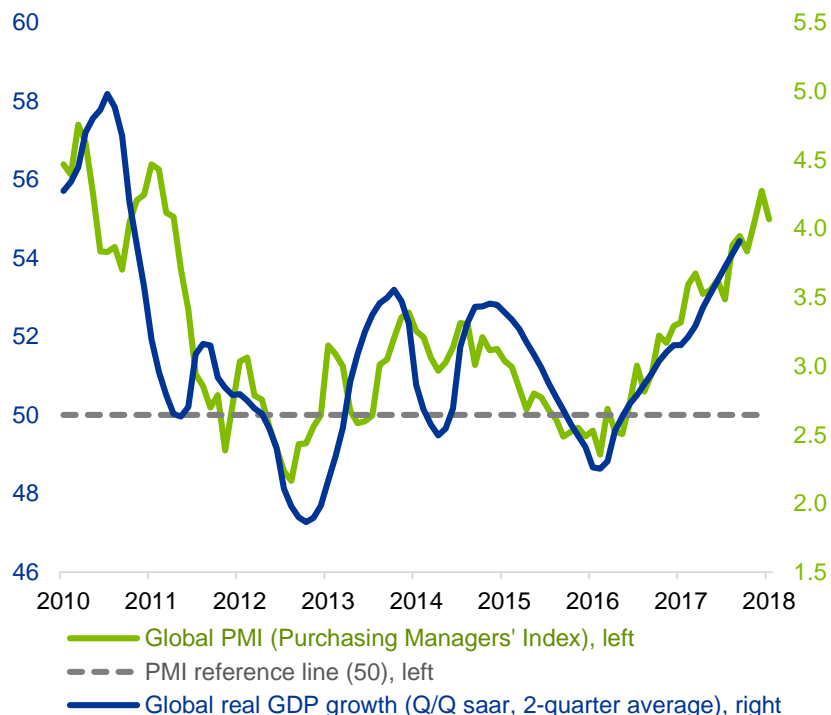
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Strong Global Growth and Momentum:

- Robust global growth in place
- Above trend growth in Euro area, US, and Japan
- U.S. cutting taxes & investment rising

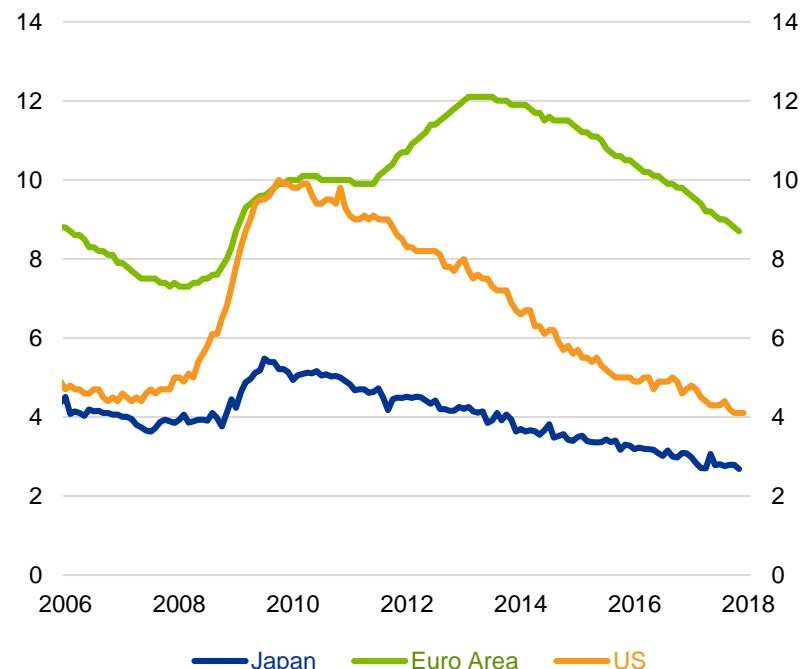
- Unemployment rates moving lower in Euro area, US, and Japan
- Global slack being taken up

Global PMI vs. Global Growth (%)



Source: Global real Gross Domestic Product (GDP) growth from JPMorgan; Global Purchasing Managers' Index (PMI) is a regression-weighted average of PMIs for individual countries from IHS Markit and Institute for Supply Management (data as of January 2018).

Falling Unemployment Rate (%)



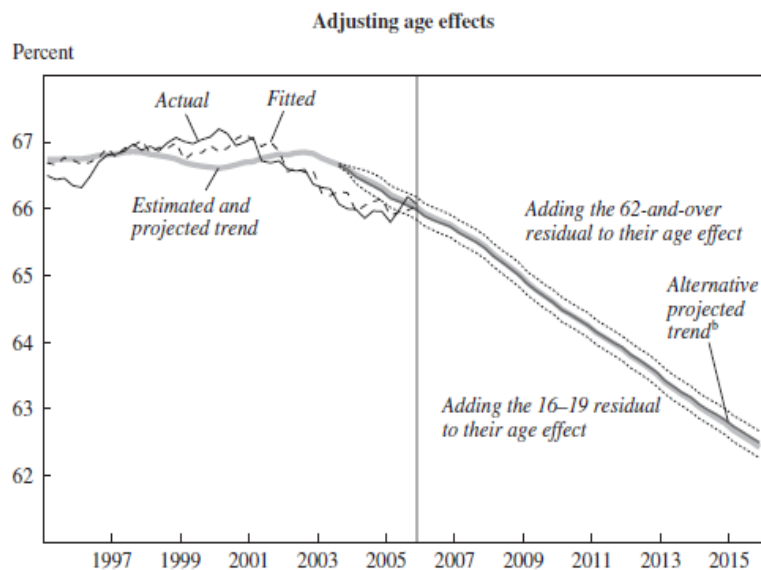
Source: Euro Area-19 data from Eurostat; U.S. data from the U.S. Bureau of Labor Statistics (BLS); and Japan data from the Labor Force Survey from Ministry of Internal Affairs & Communication. Data as of November and December 2017.

Population aging, lower potential output growth & low R-star

- Aging populations, depreciation, saving behavior and risk contributed to deceleration in potential output growth and lower equilibrium neutral rates

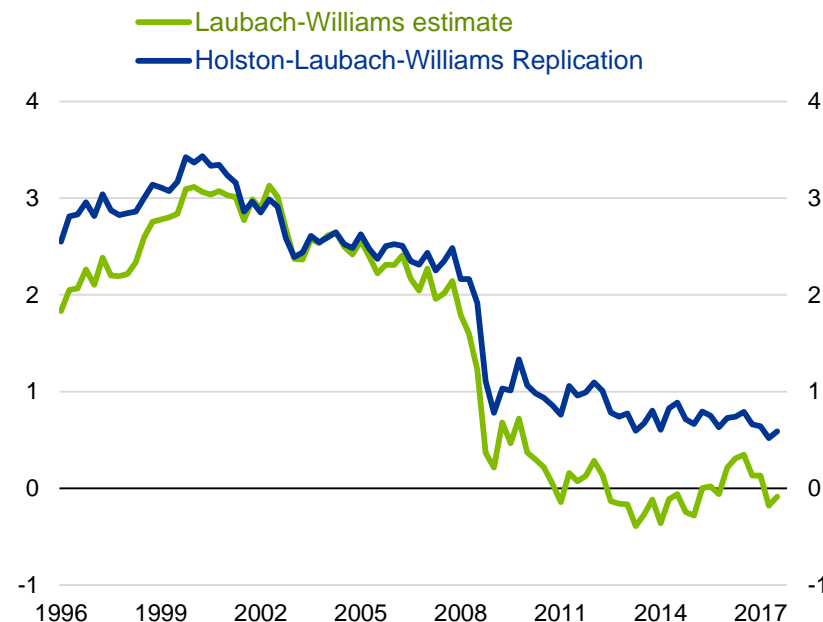
- Many of these depressing forces emerged before the crisis, but then confronted policymakers with the zero lower bound

Figure 12. Alternative Simulations of Labor Force Participation Rate Trends, 1995–2015^a



Source: Aaronson, Fallick, Figura, Pingle & Wascher, “The Recent Decline in the Labor Force Participation Rate and Its Implications for Potential Labor Supply,” Brookings Papers on Economic Activity, Spring 2006

R-star (%)



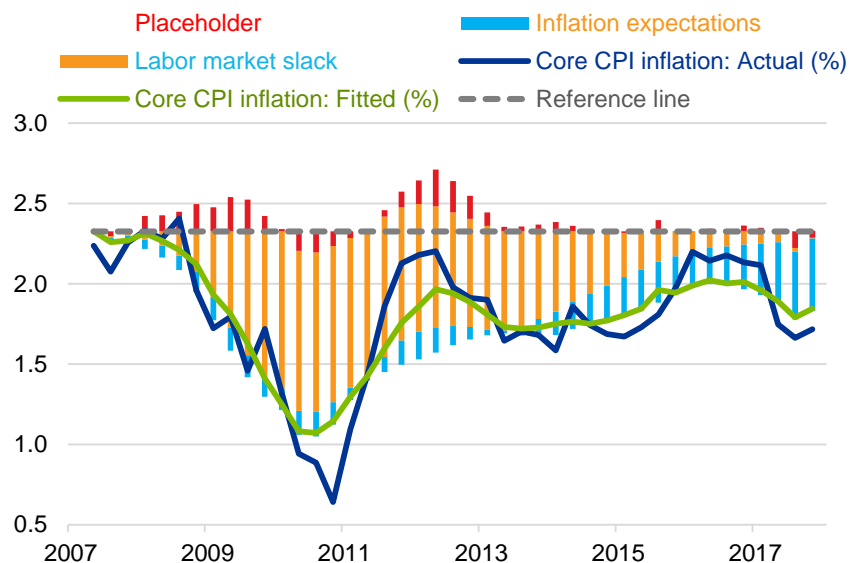
Note: R-star and trend growth are estimated using a model based on the framework developed by Holston, Laubach and Williams (2016). R-star is modelled as the sum of the trend growth and a residual factor capturing factors such a global excess savings.

Source: Holston, Laubach, Williams (2016), Federal Reserve Bank, U.S. Bureau of Economic Analysis, BlackRock Investment Institute. Data as if Q3 2017

Inflation expectations have moved lower

- Decomposing the shortfall of core CPI inflation from target, inflation expectations appear to be playing a role

Decomposing the shortfall of core CPI inflation (%)



Notes: This chart shows the actual annual change of U.S. core Consumer Price Index (core CPI) and estimates of the contributions of various economic drivers making up the implied Phillips curve inflation. The implied Phillips curve estimates are partly based off the August 2013 paper by Robert Gordon, "The Phillips Curve is Alive and Well", National Bureau of Economic Research paper #19390. Instead of modelling inflation expectations via lags we use the measure of inflation expectations similar to the 2010 paper "Modeling Inflation after the Crisis".

Source: BlackRock Investment Institute, Thomson Reuters, U.S. Bureau of Labor Statistics (data as of November 2017).

- Some components of inflation appear particularly sensitive to expectations
- And those expectations have moved down in recent years

Regression output for core-services-excluding-shelter CPI inflation

Dependent variable: Core CPI Services Ex-Shelter

Sample: 1991 to 2017

Variable	Coef.	T-stat
Inflation expect (Umich, lagged 12M)	0.70	15.7
Core CPI Svc ex-Sh inf (12M lag)	0.09	1.8
Core CPI Svc ex-Sh inf (24M lag)	0.21	*
Unemployment gap (24M movav, 6M lag)	-0.16	-9.7
Gasoline prices (y/y)	0.00	2.8
Medical care services inflation	0.06	6.3

R-squared: 0.752

S.E. regression: 0.46

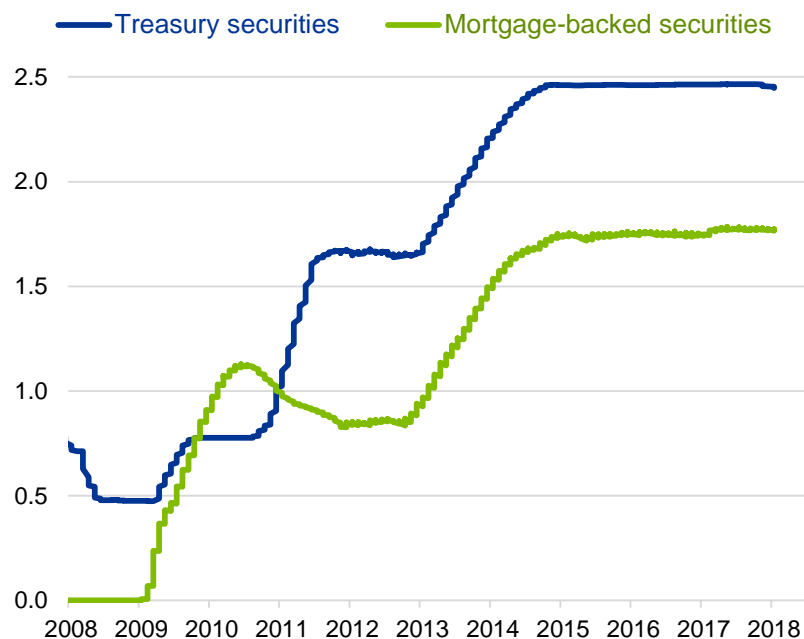
Note: Coefficients for inflation expectations and lagged core-services-excluding shelter-inflation variables are constrained to add up to 1. The regression sample is April 1991 to December 2017. The measure for inflation expectations is from University of Michigan Survey Center. Unemployment rate and Consumer Price Index data are from U.S. Bureau of Labor Statistics.

Central banks, at different speeds, removing accommodation

- Moving away from unconventional easing
- Faced with the zero lower bound, depressing term premium became part of the tool kit

- Moving away from conventional easing
- Faced with a low neutral rate, how much room remains ?

Fed's security holdings (\$ trillion)



Source: Federal Reserve Board, H.4.1 data release (data as of January 2018).

Federal Funds Effective Rate (%)



Source: Federal Reserve Board, H.15 data release (data as of January 2018).

Optimistic outlook is not without challenges

The good news:

- Inflation outlooks are improving
- In the U.S. growth in capital services has been rising and investment has improved
- Global growth remains strong

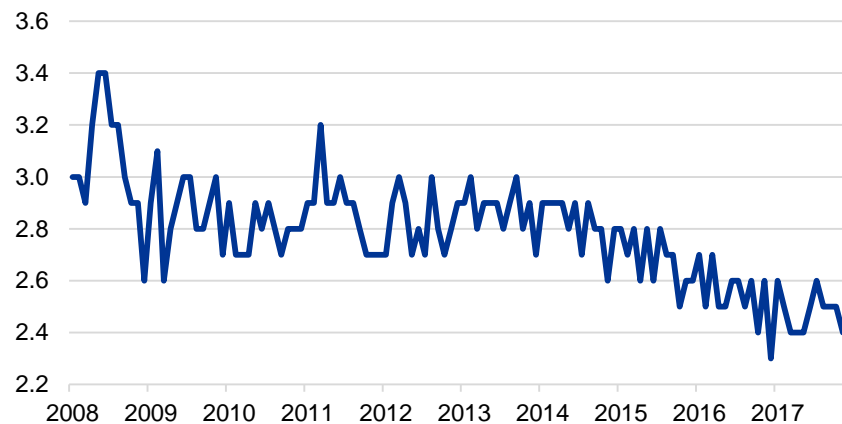
The not so good news:

- High (and rising) sovereign debt levels in countries facing aging populations
- Financial stability concerns remain
- Central banks have not yet demonstrated their ability to reach their inflation targets

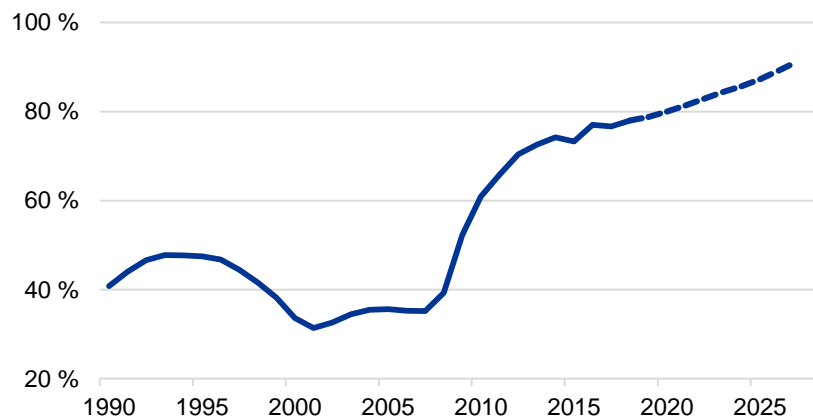
The challenge:

- Communicating exit smoothly
- Anchoring inflation expectations
- Avoiding the next crisis, or preparing to respond to the next downturn

U.S. 5-10 years ahead inflation expectations (%)



Debt held by the public as % of GDP
U.S. CBO's baseline projection



Source: The measure of inflation expectations is from the University of Michigan Survey Center's Survey of Consumers (data as of December 2017); Projection of debt held by the public as a percentage of nominal GDP is Congressional Budget Office (CBO)'s baseline projection released in 2017.

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