Low inflation in advanced economies: causes and challenges for central banks

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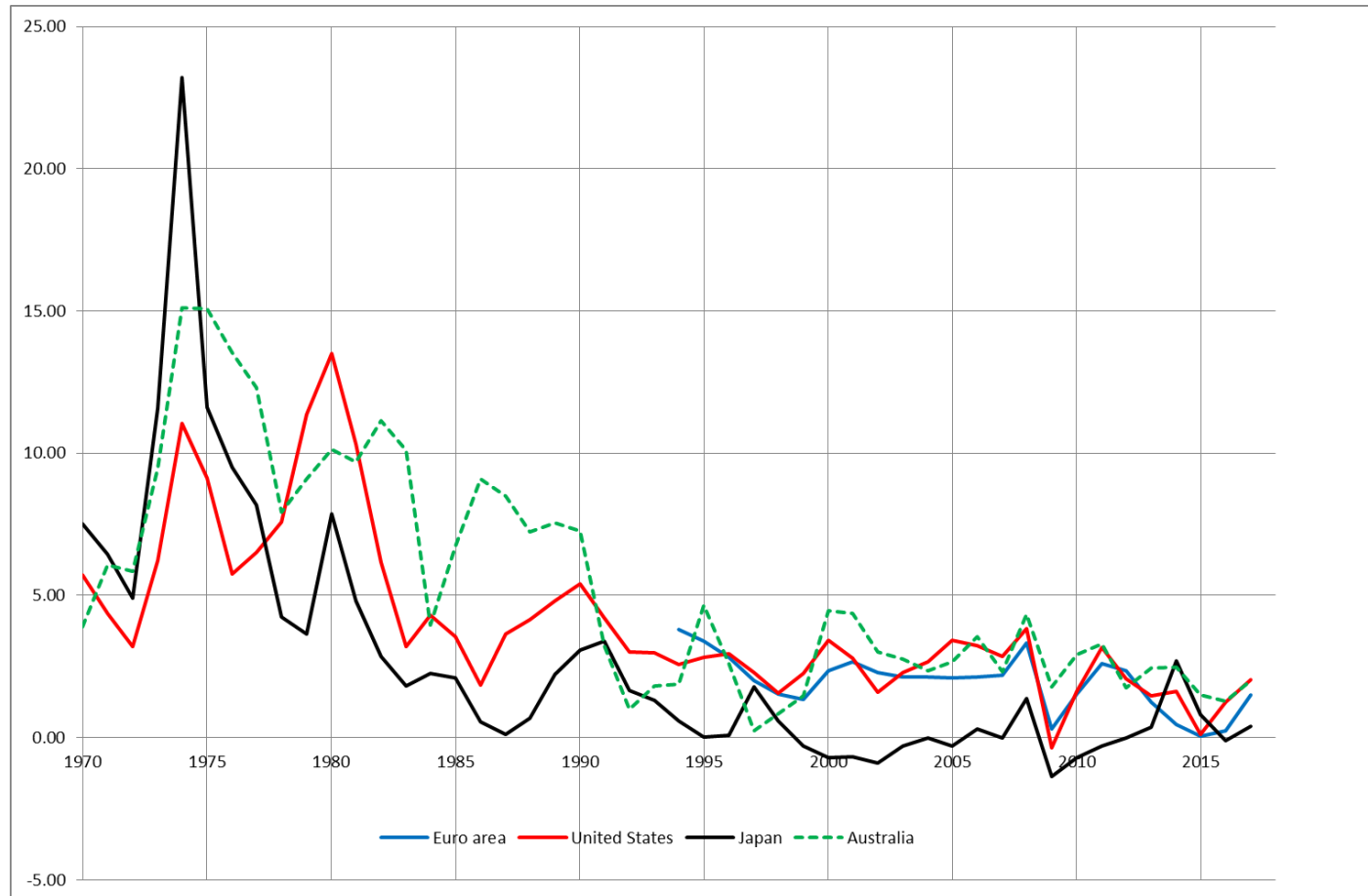
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Inflation in Advanced Economies

Long term perspective

Australia, US, Japan and the euro area

Inflation in percent, annual rate, CPI

Inflation in Advanced Economies

Recent years

Inflation in percent, annual rate, CPI

Inflation track record in recent years: below target

- In most AE central banks inflation target is 2% or so

Country/Zone	Inflation target
US	PCE 2%
Euro area	HICP « below but close to 2% »
Australia	CPI 2 to 3 % range
Japan	CPI 2%

# Inflation track record in recent years: below target

- Why the 'universal' 2% target ?
  2 percent as "Price stability"?

- Measurement errors in the CPI
  Actual inflation may be overestimated
  Concern in the 1990s in the US – Boskin report

- Downward wage rigidity :
  inflation "greases the wheel" of labor market

- The interest rate Zero Lower Bound (more on it later)

Why was inflation so low

- The great recession aka Global Financial Crisis, and euro area sovereign crisis

- Oil prices

- Exchange rate (not a 'global' explanation however), globalisation

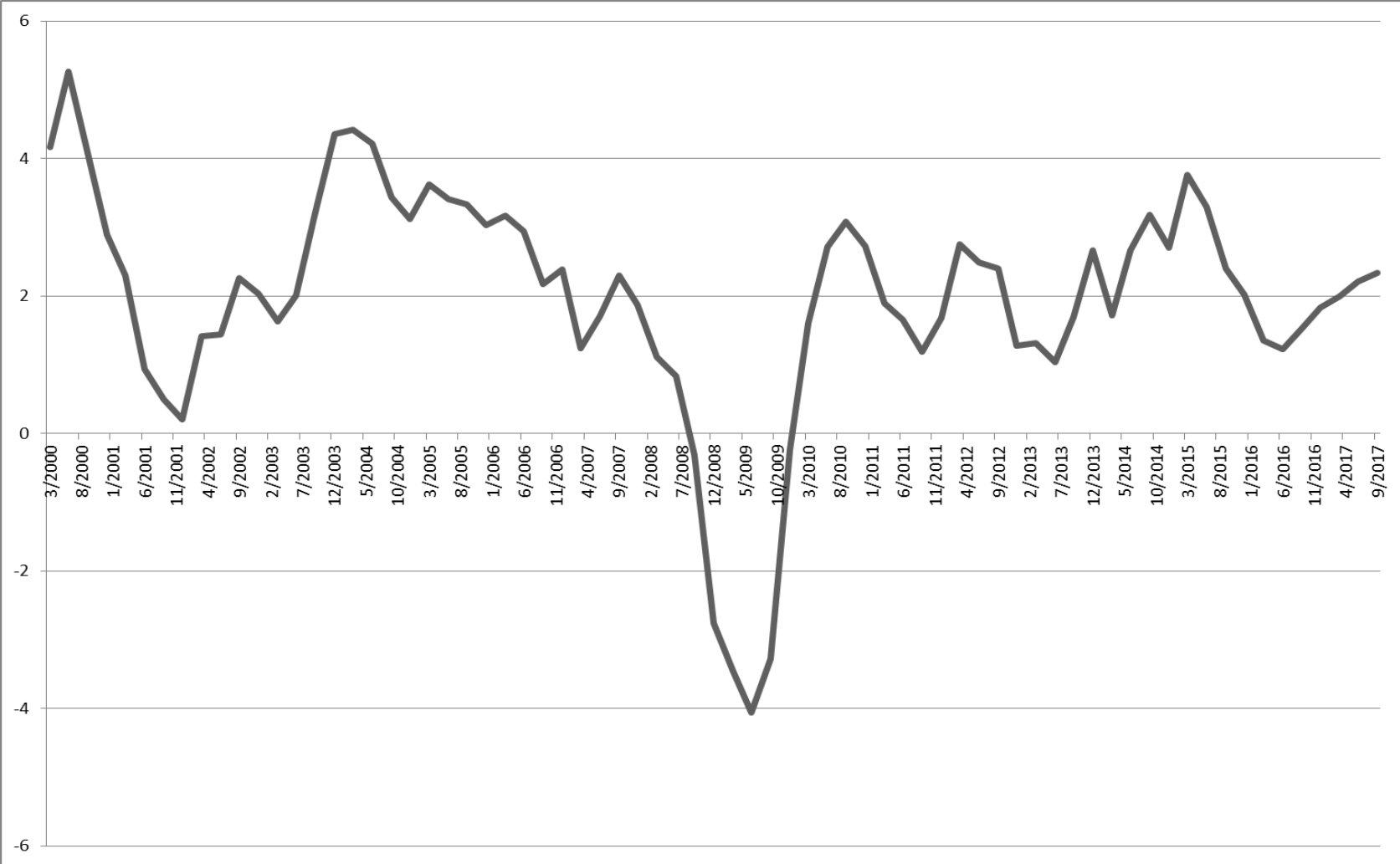- "De-anchoring" of expectations, deflation dynamics

The GFC and recovery
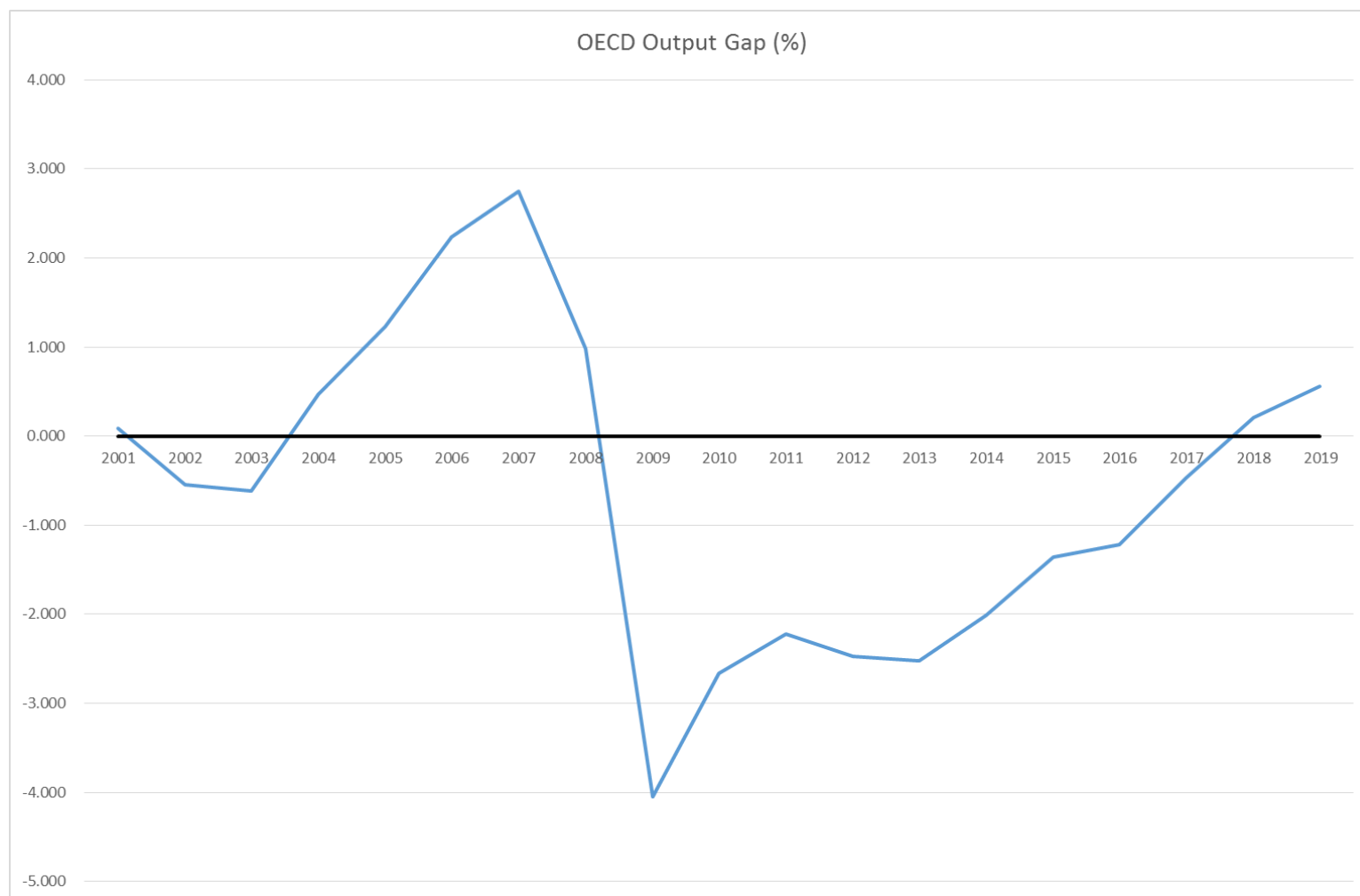
OECD GDP , yearly growth rate, pct
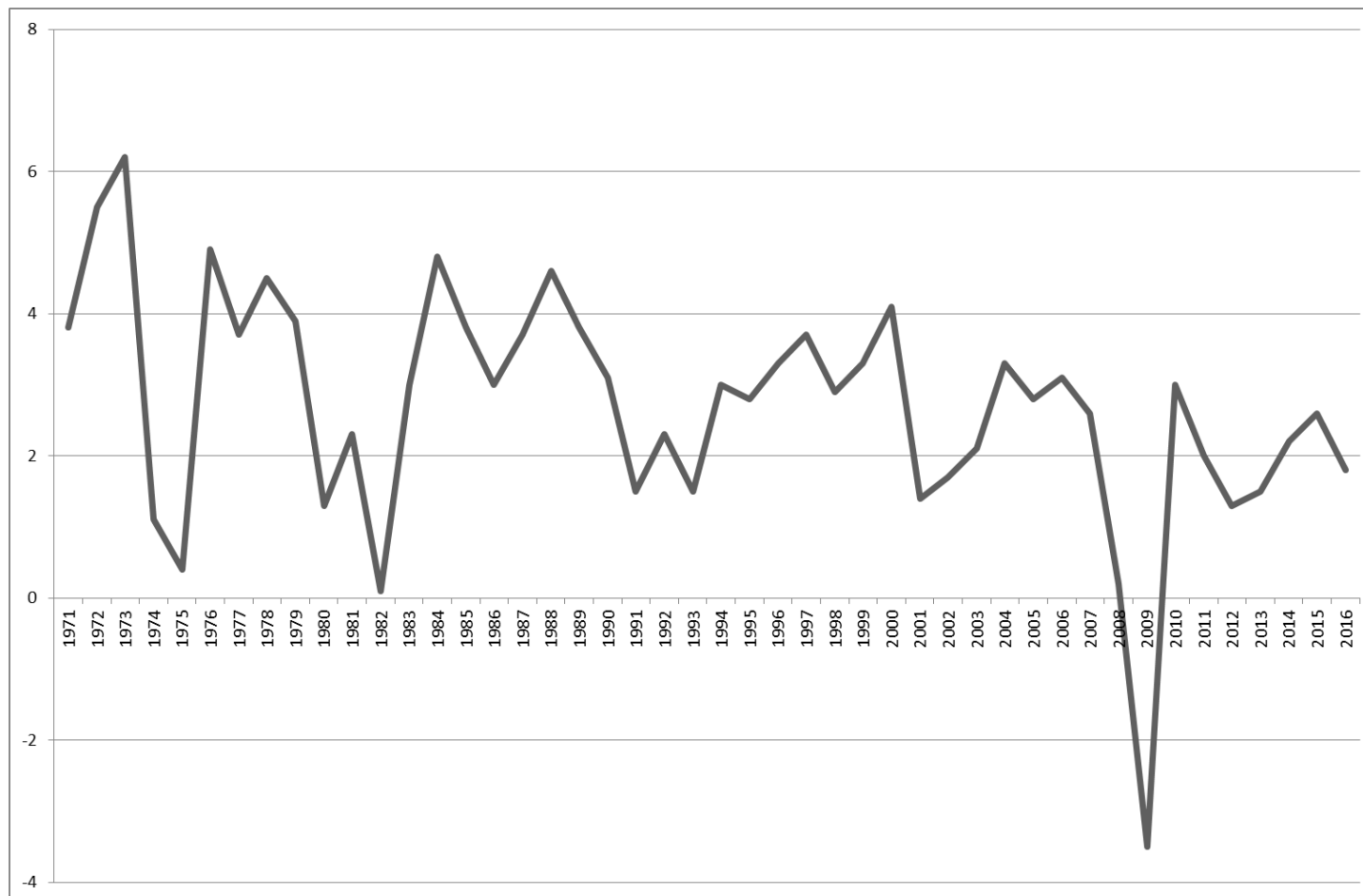
The GFC and recovery
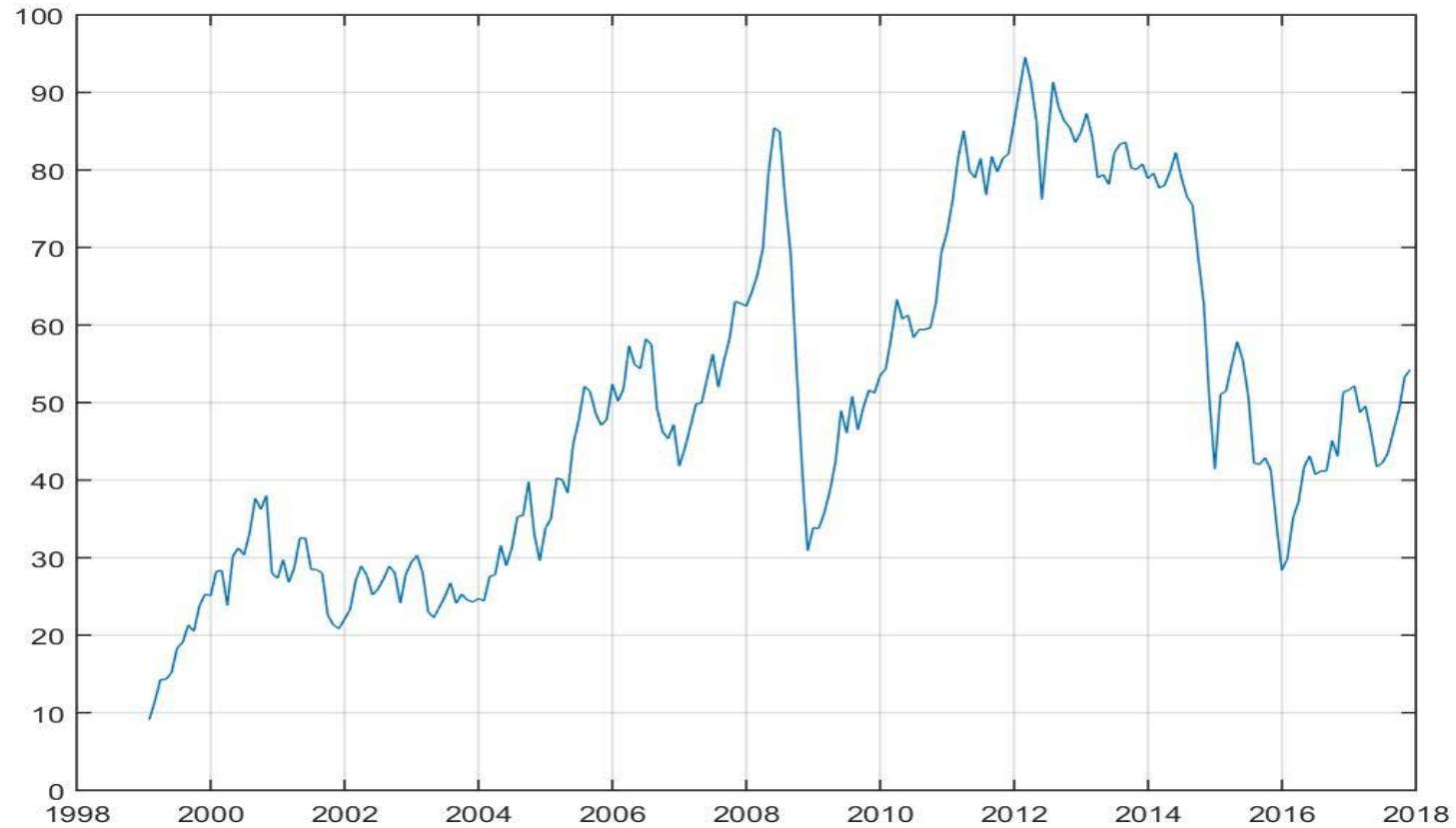
US GDP , year-on-year growth rate, pct

The GFC and recovery: the output gap

OECD Output Gap (%)

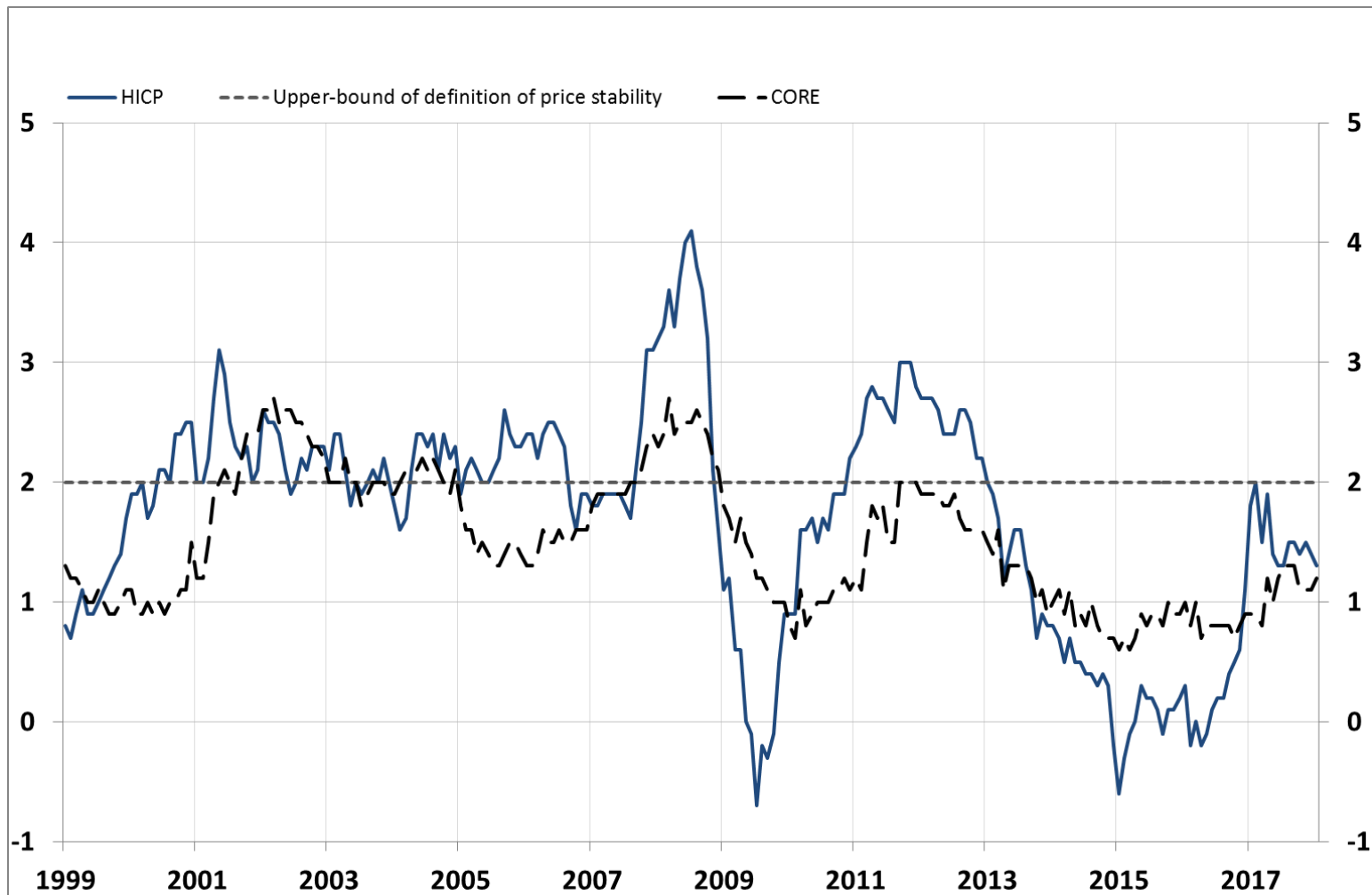Source: OECD, data for 2018 and 2019 are forecast.

Role of Energy prices :Oil prices

Brent oil price, USD per barrel
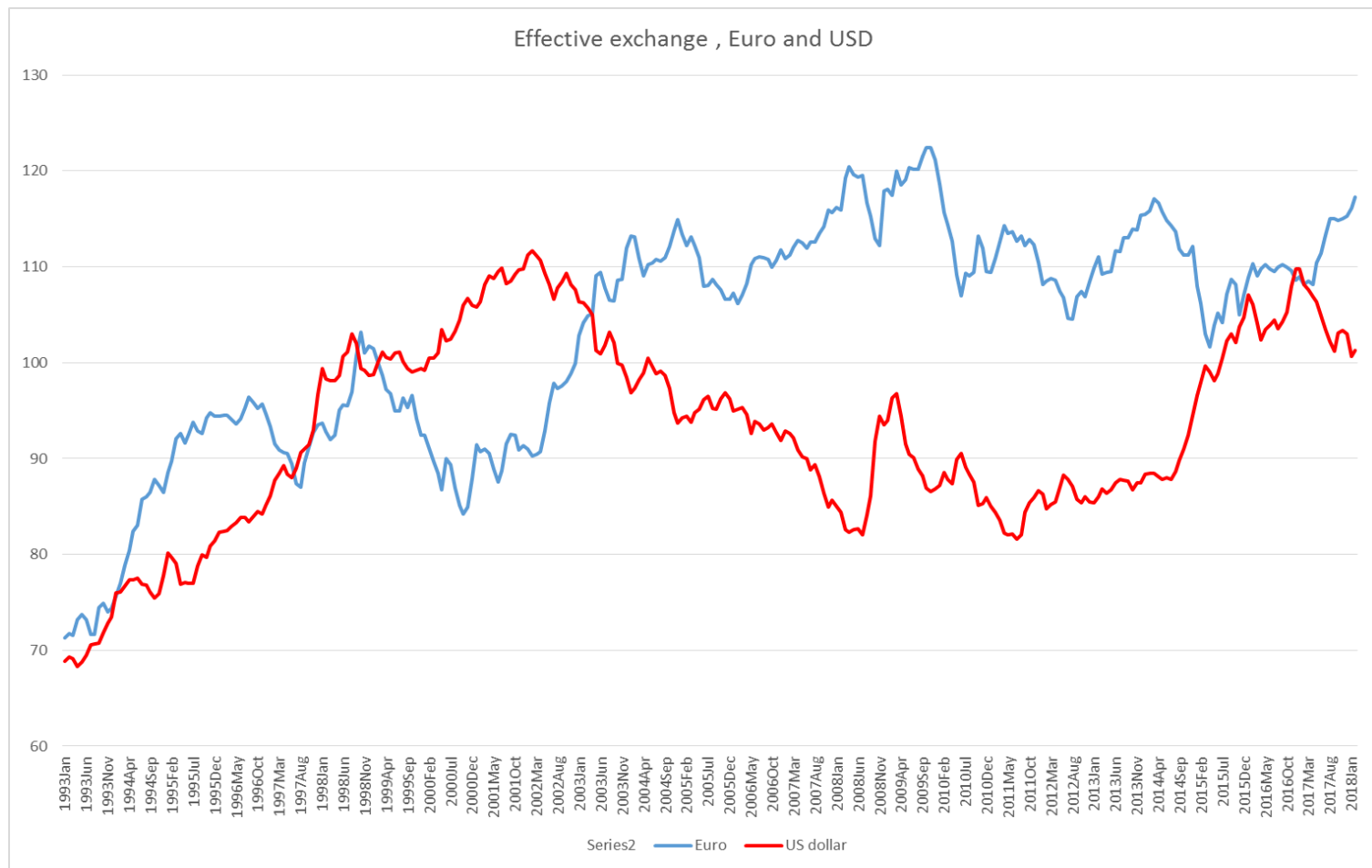
Role of Energy prices
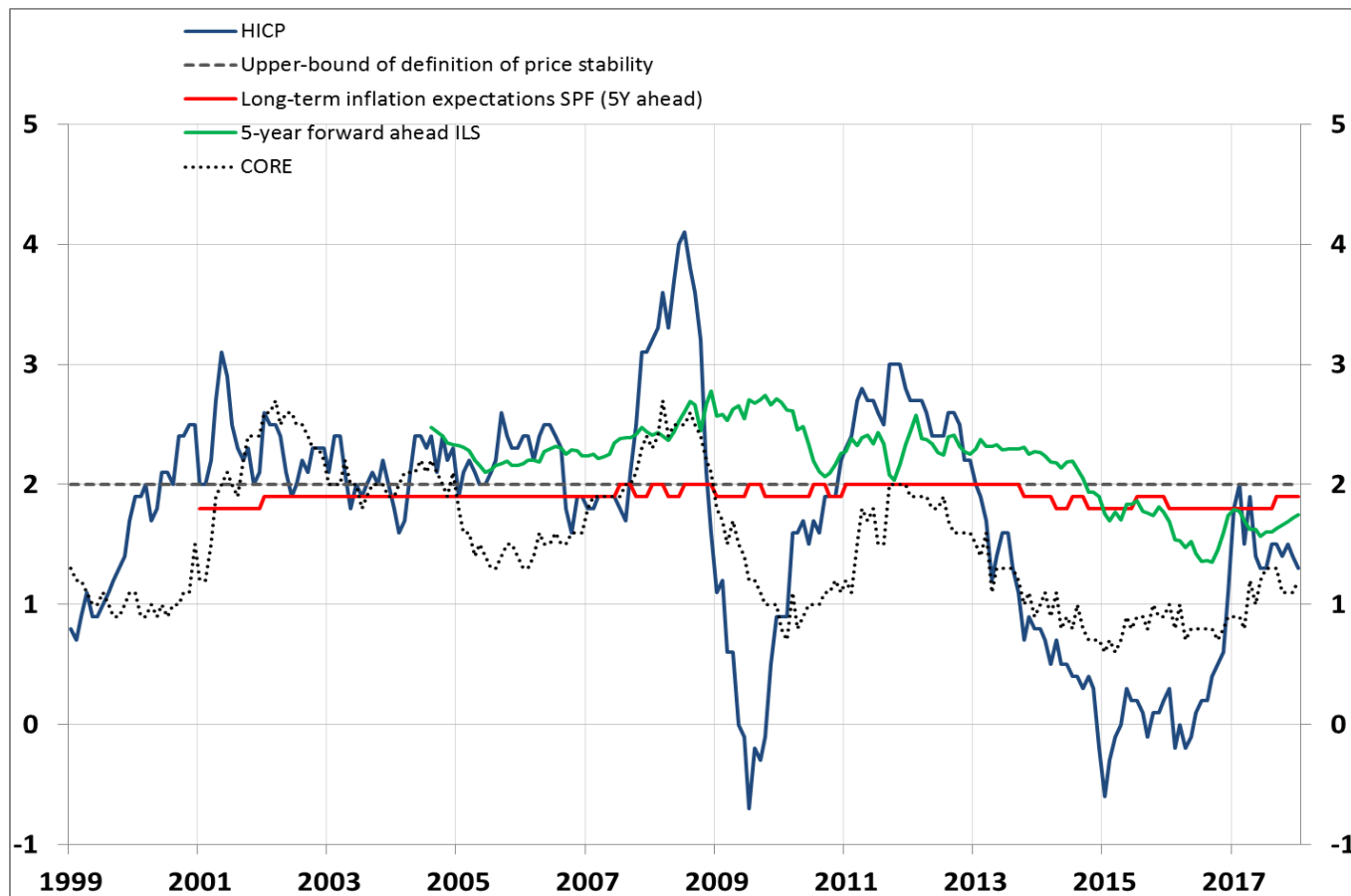
But 'core' inflation was also low

Exchange rates

Huge role in some circumstances, especially for small open economies
Cannot be a global explanation…

US and euro area nominal effective exchange rate

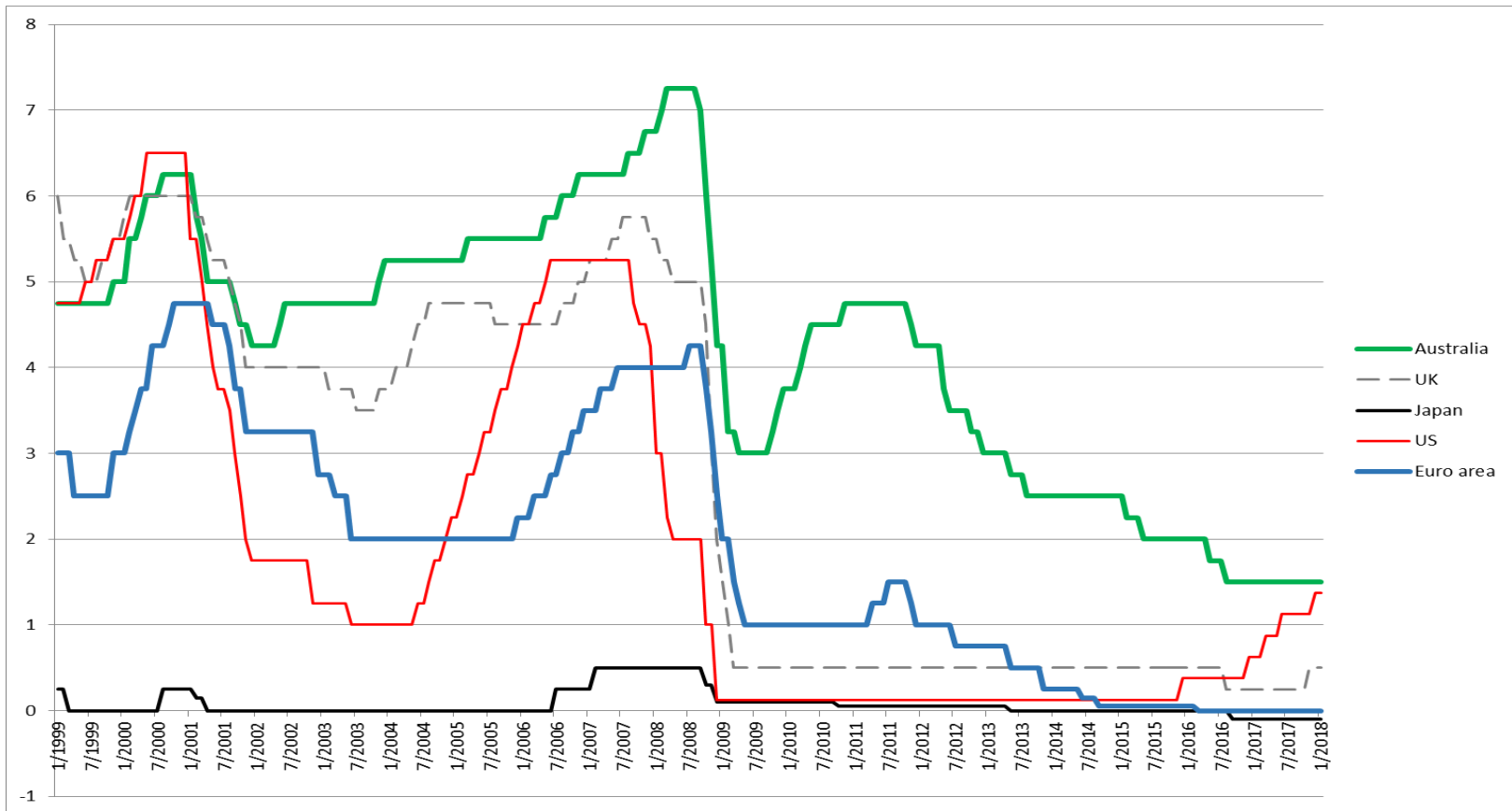Effective exchange , Euro and USD

Inflation Expectations: Risks of "de-anchoring"

Example : euro area. Long run Inflation expectations from surveys
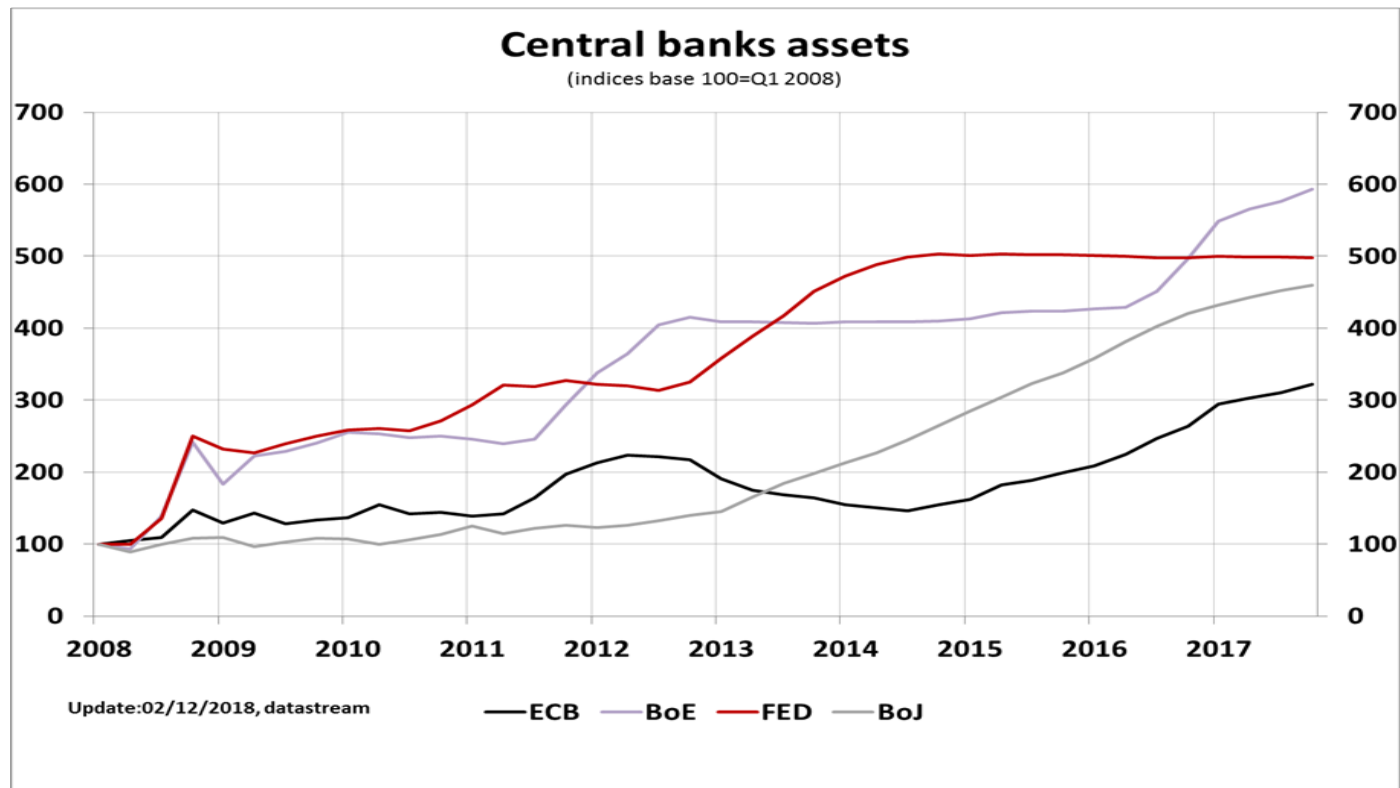
The response of central banks

- Conventional response: lower policy interest rate
- Until the **zero lower bound** is reached
- Except for "lucky countries"!
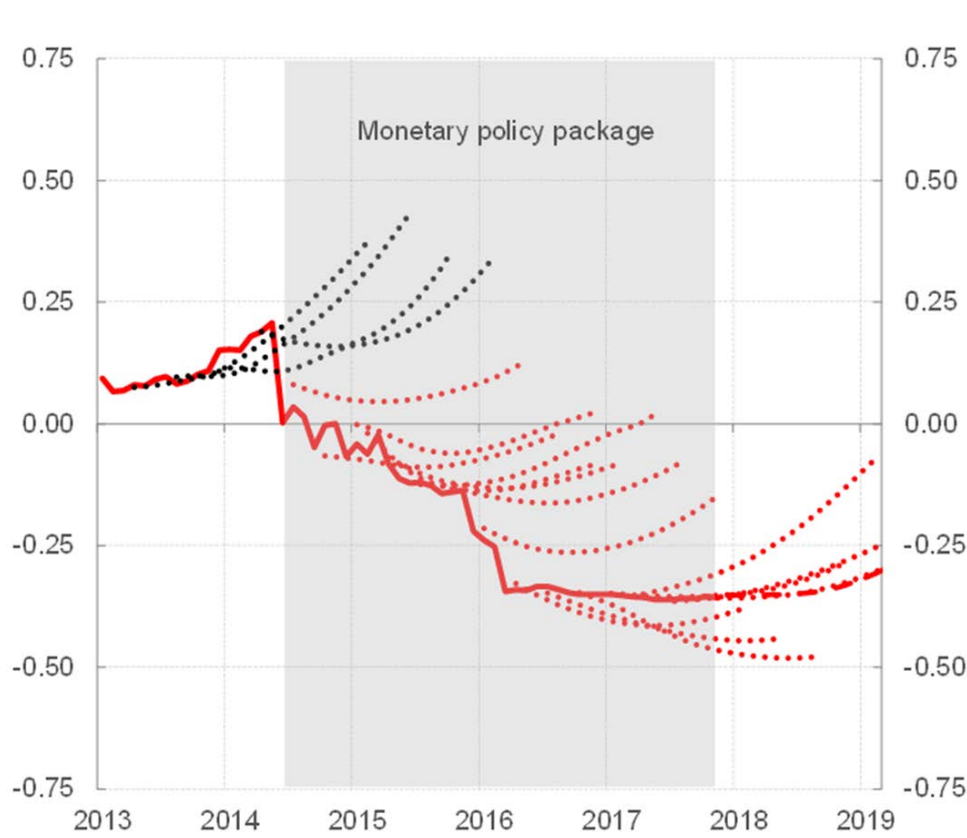
The response of central banks

- Non Conventional response (1):
- Asset purchases "Quantitative easing"
- Credit easing

Central banks assets
(indices base 100=Q1 2008)

Update:02/12/2018, datastream — ECB — BoE — FED — BoJ

The response of central banks

- ## Non Conventional policy (2):
- ## "Forward Guidance"

Example : euro area OIS curve
Akin to market forecast of policy rate

*Sources: Bloomberg and ECB calculations.*
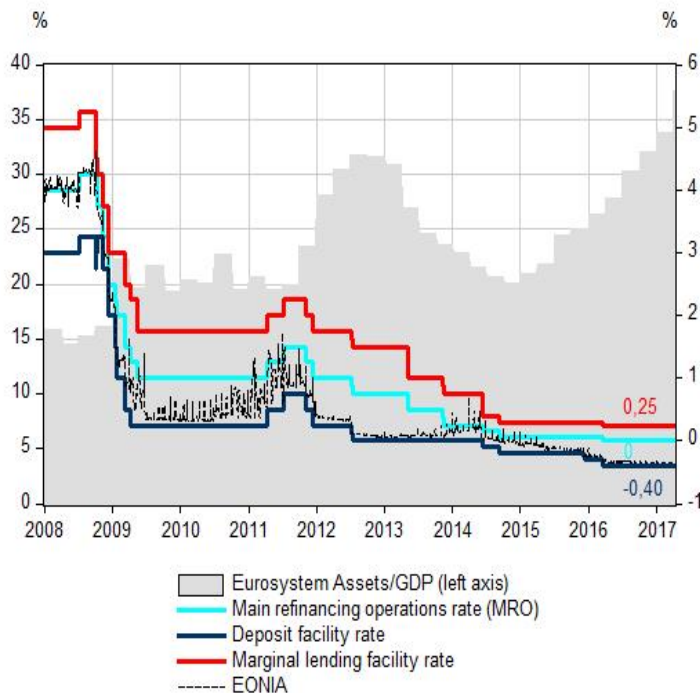*Note: Evolution of the overnight index swap forward curve from pre-negative interest rate policy (black dotted lines) to post-negative interest rate policy (red dotted lines) period.*

The response of central banks

Non Conventional response (3): Negative interest rates.

Example: euro area

Also in Japan, Denmark, Switzerland,Sweden

Money market rates in the Euro area
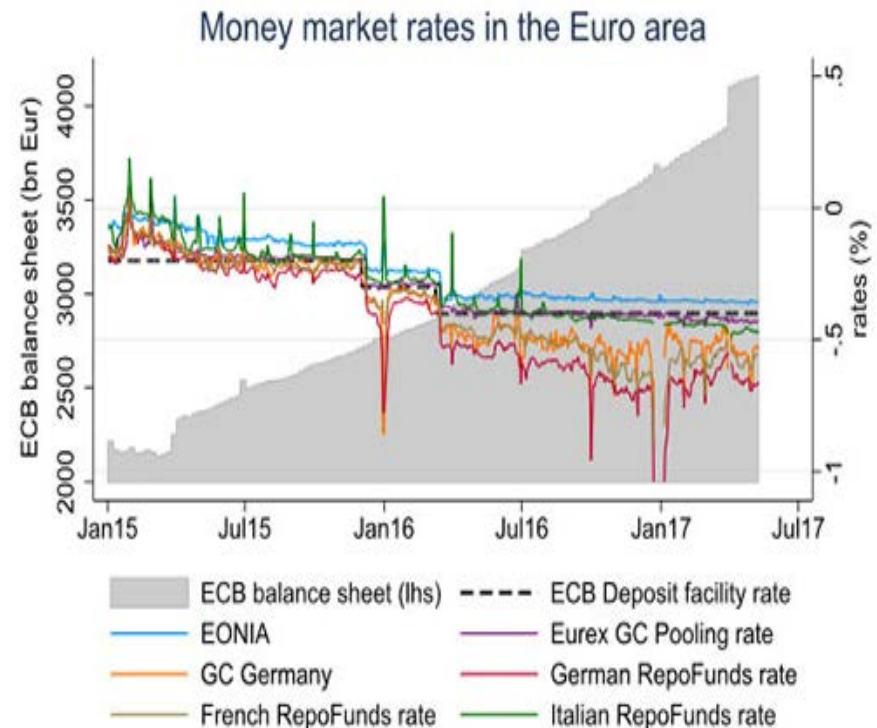
Source: Arrata, Nguyen, Rahmouni-Rousseau and Vari (2017)

Challenge #1:Has the Phillips curve disappeared?

The Phillips curve: a standard tool for analyzing inflation dynamics

Many versions: wage/price, forward-looking/backward-looking, « accelerationist »…

A typical illustrqtive example:

$$\pi_t = c + a\,\pi_{t-1} + b\,Y_t + d\Delta P^{imp} + e_t$$

where
π_t is inflation
Y_t the output gap (or unemployment rate)
ΔP^{imp} import prices
e_t shock

Parameter **b** is the slope of the Phillips curve
Crucial for transmission of monetary policy

18

Challenge :Has the Phillips curve disappeared?

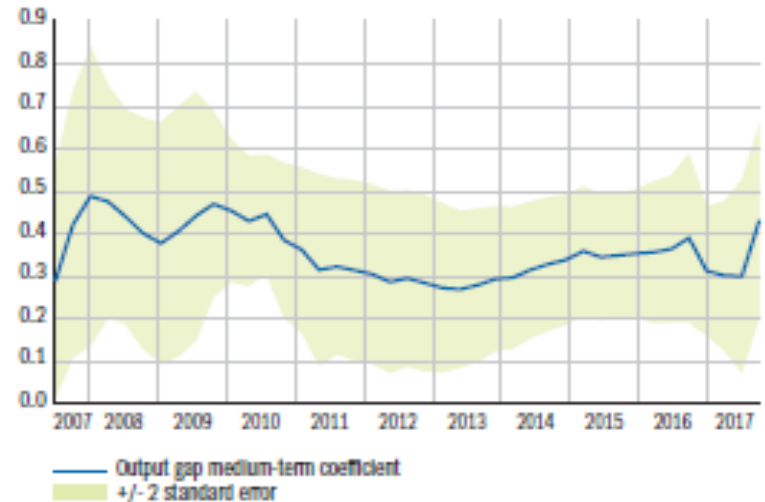*Lessons from a study of the euro area Phillips curve* *Berson et al, BDF, 2018*

C1 Estimated coefficient of the unemployment gap in G7 countries

Coefficient of the unemployment gap

95% confidence interval
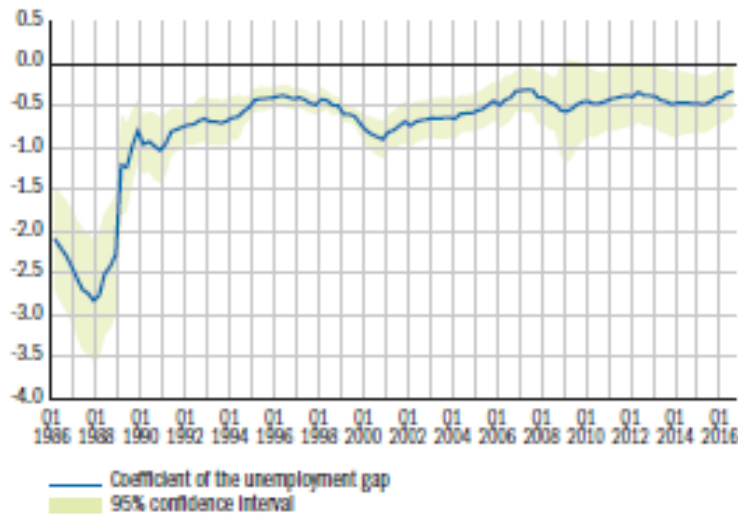
Source: authors' calculations.

C3 Slope of the Phillips curve in the euro area

(rolling window over 36 quarters, start of the first estimate: Q4 1998)

Output gap medium-term coefficient

+/- 2 standard error

Source: authors' calculations.

Note: Annual medium-term slope given by $4*c_2/(1-c_1)$.

Challenge :Has the Phillips curve disappeared?

Lessons from a study of the euro area Phillips curve _Berson et al, BDF, 2018_

C4 Contributions to euro area Inflation

(deviation from the sample average, in percentage points)

Legend:
- Output gap
- VAT
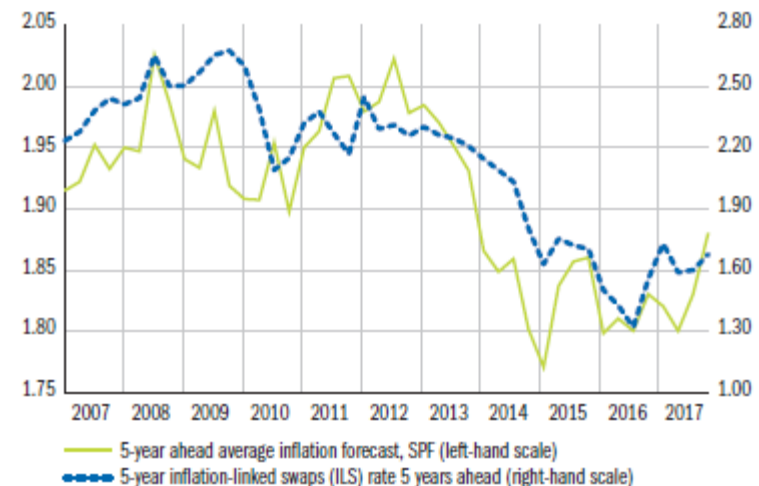- Relative import prices
- Residuals
- HICP (%, year-on-year)
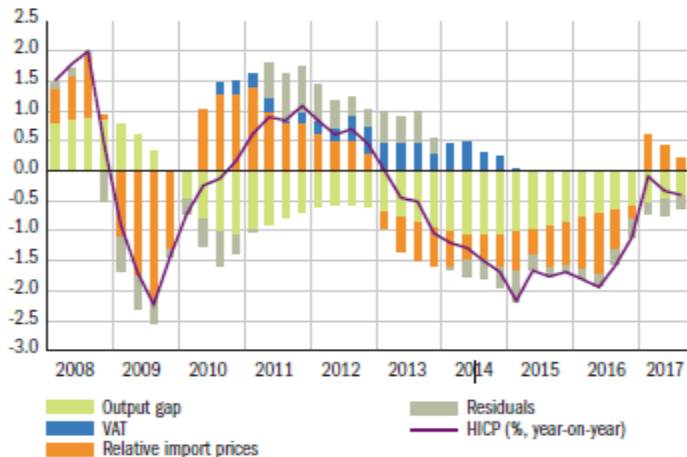
Source: authors' calculations.
Note: Average HICP inflation of the sample: 1.9%.

C5 Inflation expectations In the euro area

(annual average - %)

- 5-year ahead average inflation forecast, SPF (left-hand scale)
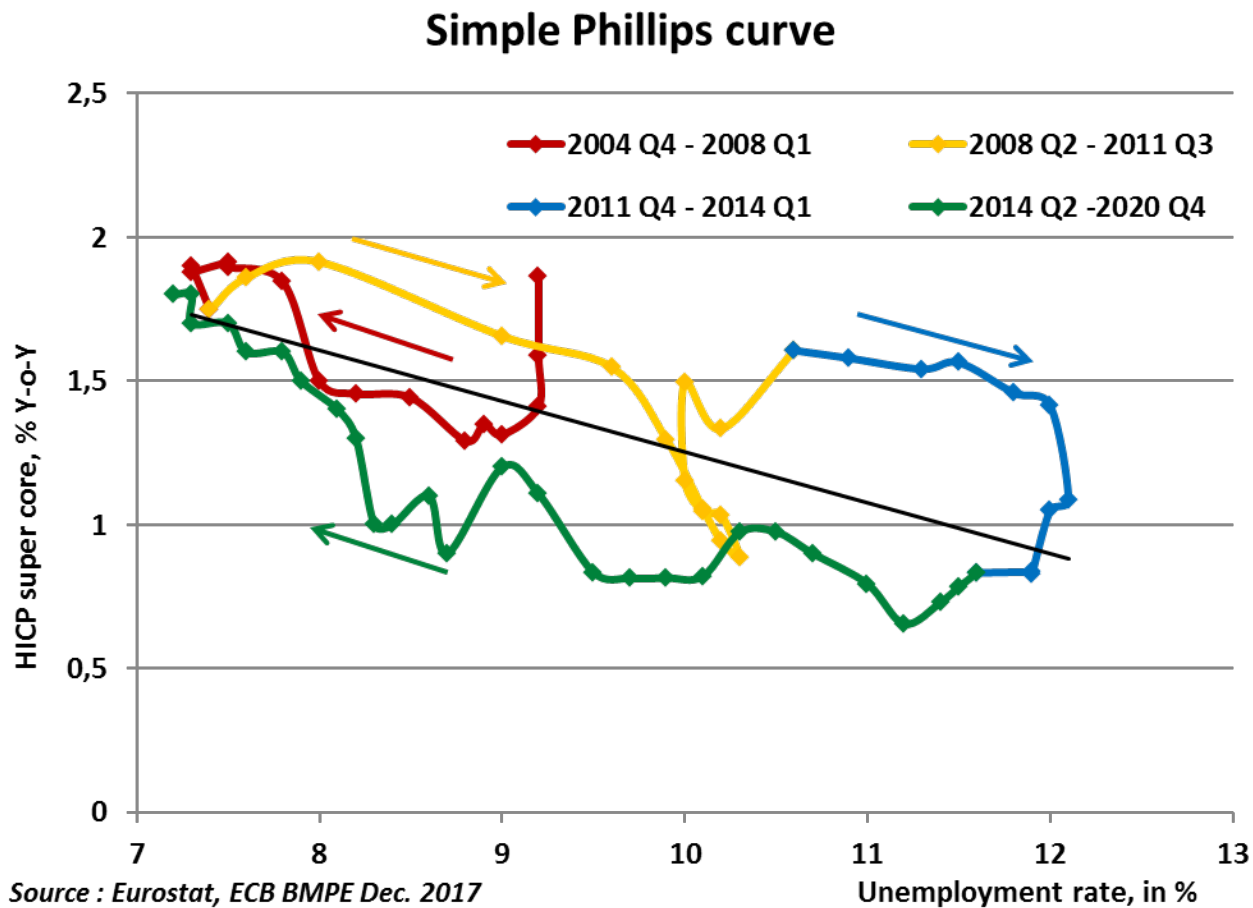- 5-year inflation-linked swaps (ILS) rate 5 years ahead (right-hand scale)

Sources: ECB (SPF); Bloomberg (ILS).
Note: The ILS are expressed in quarterly terms by forming calendar averages.

Challenge :Has the Phillips curve disappeared?

Simple Phillips curve

Source : Eurostat, ECB BMPE Dec. 2017

Bottom line: some flattening but PC is still in the background
Central Bank Forecasts point to gradual convergence to target

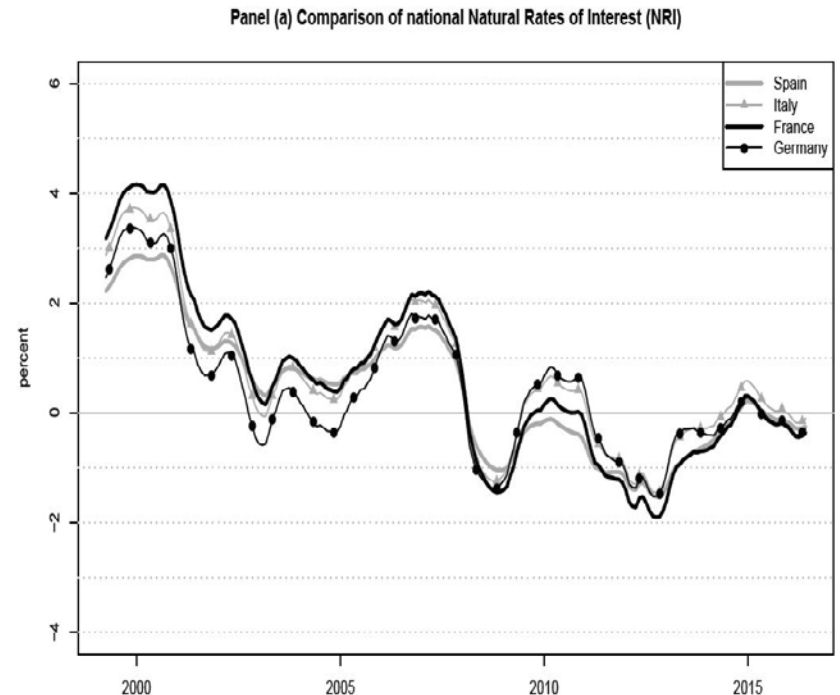# Challenge #2: equilibrium real interest rates are lower

Graph 4
Global Neutral Interest Rates
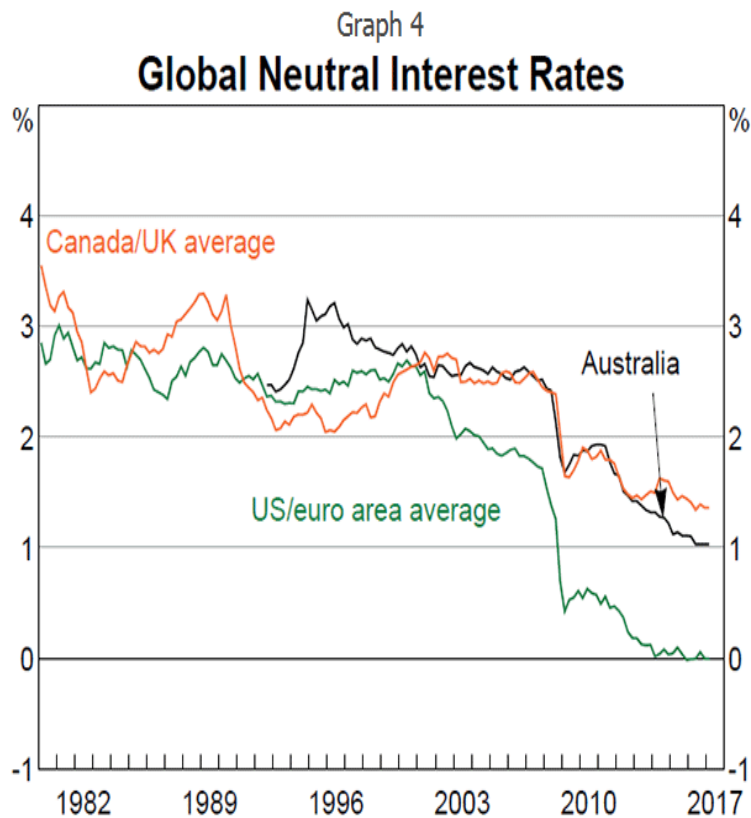
Sources: Holston, Laubach and Williams (2016); Laubach and Williams (2015); Lubik and Matthes (2015); RBA

Source: RBA Bulletin sept 2017

Figure 1: Smoothed trajectories of the national natural interest rates.

Panel (a) Comparison of national Natural Rates of Interest (NRI)

Source: Fries et al BdF WP 2017

22

Challenge #2: equilibrium real interest rates are lower

A long term identity:

$$i = r^* + \pi$$

Where
i steady-state nominal interest rate
r^* real equilibrium interest rate
π average inflation, hopefully equal to the central bank target

In a recession or downturn or low inflation event:
$\rightarrow$ central banks want to decrease i_t by a large amount

This is challenging if r^* is low

Challenge : equilibrium real interest rates are lower

- Causes of decline in r^*: 'secular stagnation' ; taste for safe assets

- Risk: more episodes of Zero Lower Bound in the future

- What are the options if this materializes ?
- Negative rates (extreme version: banning cash)
- More frequent use of asset purchases
- Reconsider inflation target