

# Central Bank Balance Sheet Policies: The tale of three central banks

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Brussels, 2 October 2017  
Bruegel & Kobe University  
Europe and Japan: Monetary policies in the age of uncertainty

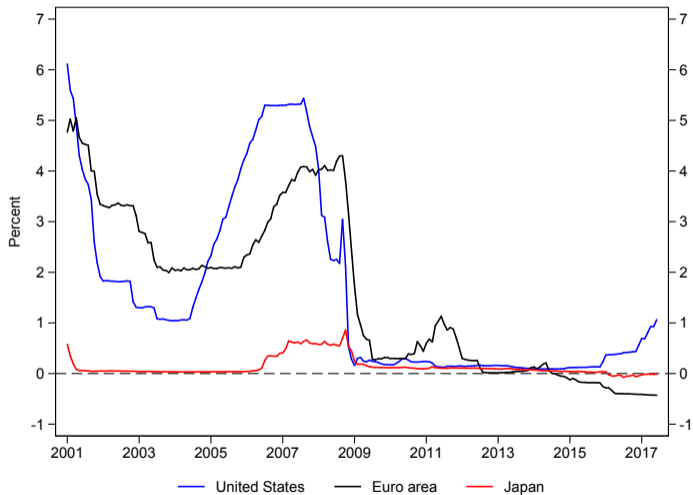


# The ZLB and balance sheet policies

- ▶ The ZLB and QE: Fed, ECB, BoJ.
- ▶ Policy options at the ZLB.
- ▶ The macroeconomic cost of inaction.
- ▶ Fiscal aspects of balance sheet policy: debt sustainability.



# The ZLB: Overnight interest rates



# Policy Options at ZLB

- ▶ Size of balance sheet—QE (unlimited).
- ▶ Composition of balance sheet (limited).
- ▶ Negative short rates (limited).
- ▶ Communications/forward guidance (not an independent tool).



# How does QE work?

- ▶ Purchases of assets raise their prices and those of substitutes.
- ▶ QE compresses long-term yields.
- ▶ QE raises asset prices/weakens fx.
- ▶ QE creates fiscal space/accommodates fiscal expansion.
- ▶ QE increases nominal aggregate demand.



# Uncertain effects

- ▶ Greater multiplier uncertainty for QE than for conventional policy.
- ▶ Uncertainty may lead to inaction.
- ▶ Appropriate response is to embark on QE quickly and recalibrate, doing more if needed.



# The cost of inaction

- ▶ Delay in implementing QE depresses economy leading to lowflation.
- ▶ Lowflation leads to disanchoring of inflation expectations to downside.
- ▶ Eventually requires much greater easing action.



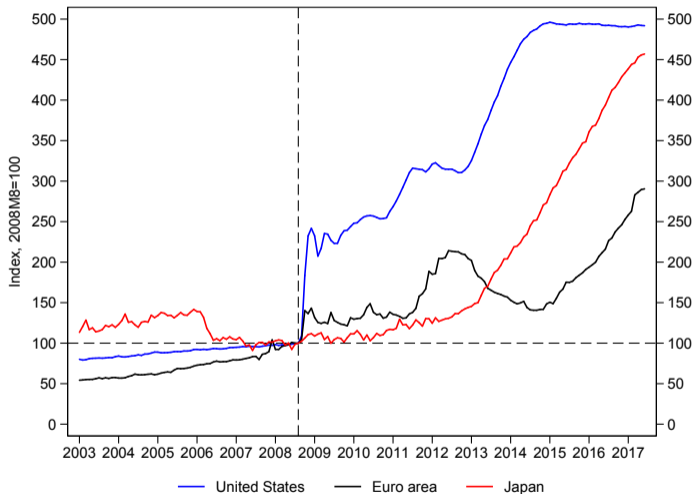
# Quantitative Easing at the ZLB: The tale of three central banks

- ▶ Fed: Adopted QE early after 2008 crisis.
- ▶ ECB: Adopted QE reluctantly in 2015.
- ▶ BoJ: Reluctance from 2000s, decisive QE since 2013.





# Three central banks: Size of Balance Sheet



Index, August 2008 = 100.

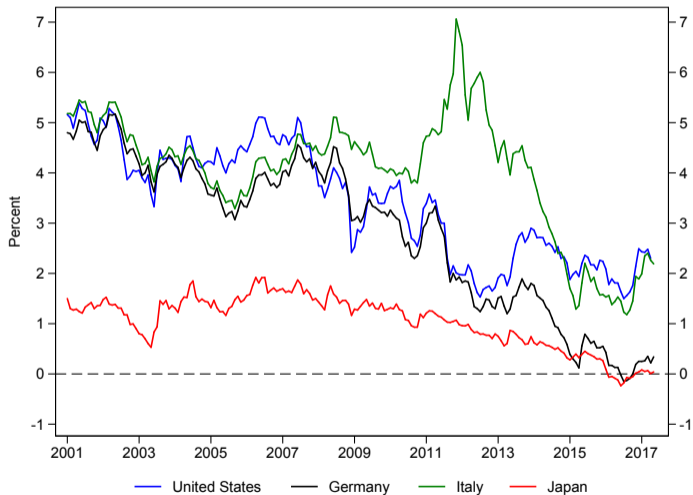


# What can QE achieve?

- ▶ QE can restore growth and raise inflation towards CB objective.
- ▶ QE can improve debt dynamics.
- ▶ Effectiveness depends on decisiveness, implementation.
  - ▶ Fed: Effective overall.
  - ▶ BoJ: Effective with costly delay.
  - ▶ ECB: Effective for “strong” states, **not** effective for “weak” states.



# Ten-year government bond yields



## BoJ: QQE with YCC

“The Bank will apply a negative interest rate of minus 0.1 percent to the Policy-Rate Balances in current accounts held by financial institutions at the Bank.”

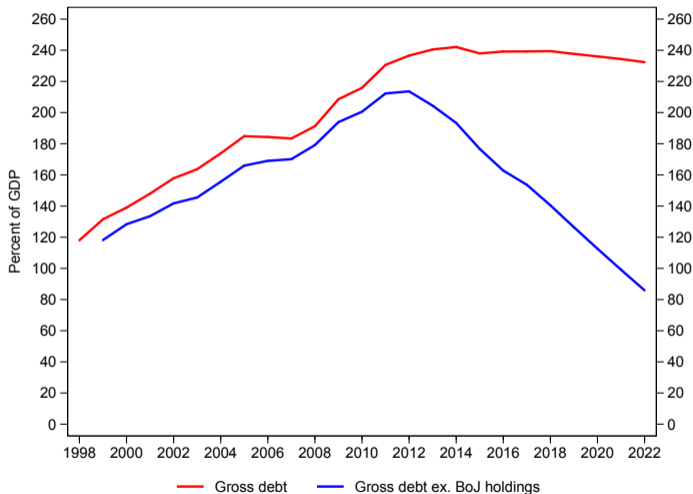
“The Bank will purchase Japanese government bonds (JGBs) so that 10-year JGB yields will remain more or less at the current level (around zero percent). ... an annual pace of increase in the amount outstanding of its JGB holdings at about 80 trillion yen ...”

“The Bank will continue expanding the monetary base until the year-on-year rate of increase in the observed CPI (all items less fresh food) exceeds the price stability target of 2 percent and stays above the target in a stable manner.”

(Bank of Japan, 21 September 2016)



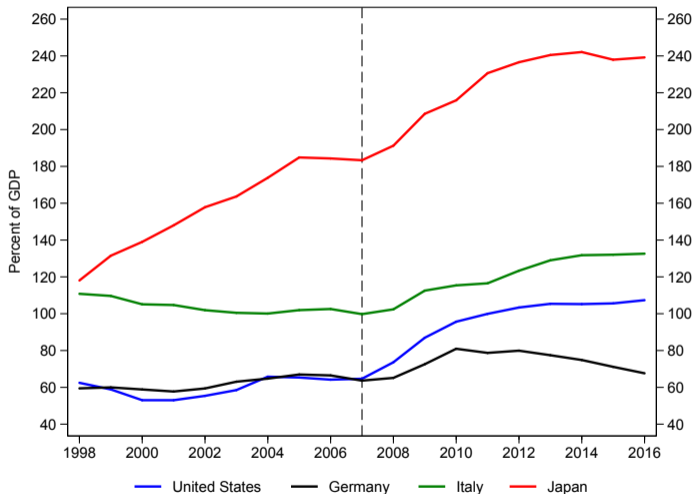
# Japan's debt: The power of the BoJ balance sheet



Gross debt ratio. Based on IMF projection, IMF WEO, April 2017. Actual BoJ holdings until June 2017, subsequently projected assuming annual purchases of 80 trillion yen.



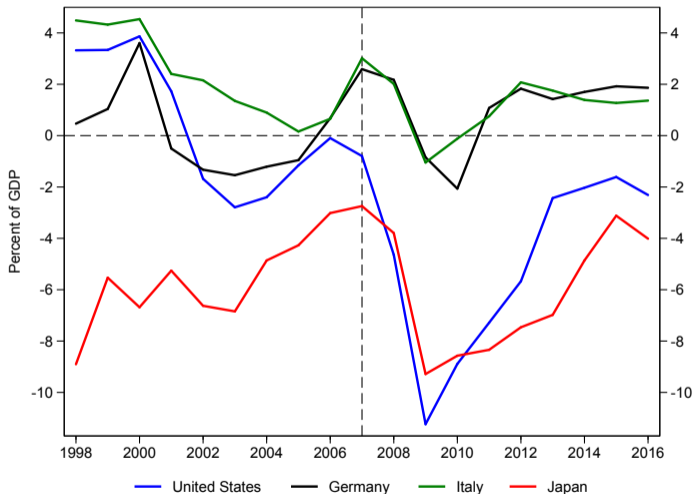
# Government debt



Gross government debt as a percent of GDP. IMF WEO, April 2017.



# Primary balance



Primary balance as a percent of GDP. IMF WEO, April 2017.



# Debt dynamics

$$\Delta b_t = (r - g)b_{t-1} + d_t$$

$b_t$ , debt (ratio to GDP).

$d_t$ , primary deficit (ratio to GDP).

$r$ , real interest rate.

$g$ , real GDP growth.

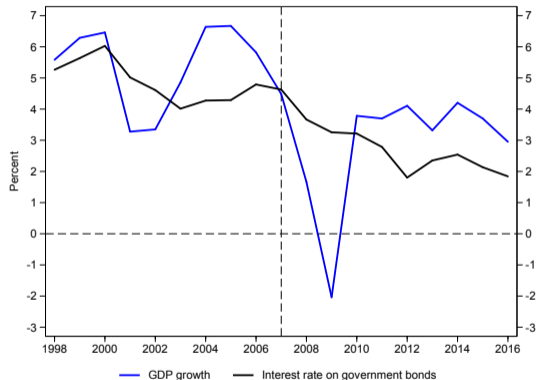
- ▶ Sustainability—the snowball effect:  $r - g$



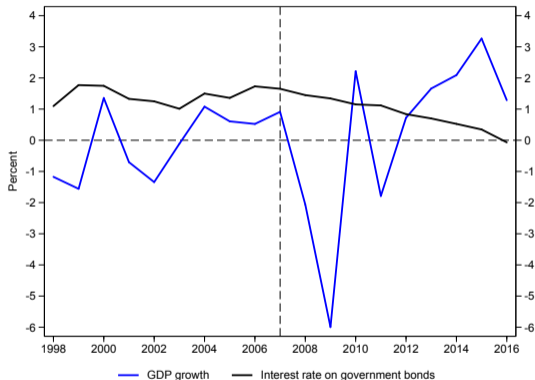


# The snowball effect: Fed vs BoJ

## United States



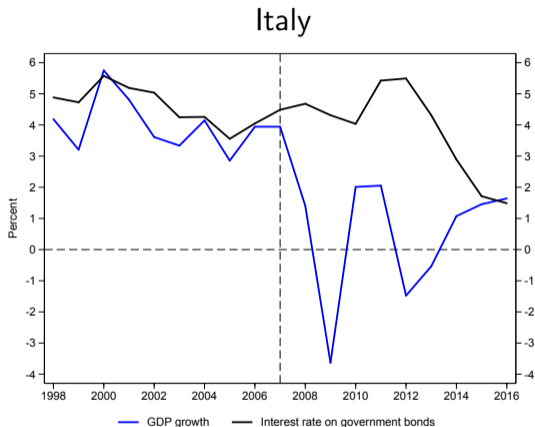
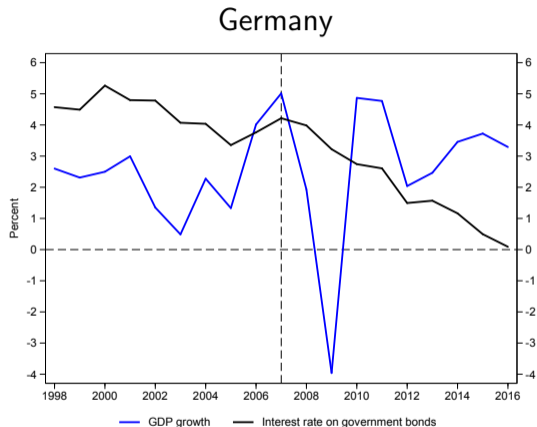
## Japan



Nominal GDP growth, IMF WEO, April 2017. Interest rate on government securities, IMF IFS.



# The ECB and the snowball effect: Germany vs Italy



Nominal GDP growth, IMF WEO, April 2017. Interest rate on government securities, IMF IFS.



# What has QE achieved?

- ▶ Fed: Decisive QE paid off, health of economy restored.
- ▶ BoJ: Decade-long delay in adopting decisive QE led to deterioration of debt dynamics and disanchoring of expectations. Decisive QE since 2013 has put Japan on right track.
- ▶ ECB: Reluctant and flawed implementation led to disanchoring of expectations and deterioration of debt dynamics for many member states. Effective for selected states, ineffective for many states.

