# Monetary policy after the Great Recession: A View from the Advanced Economies

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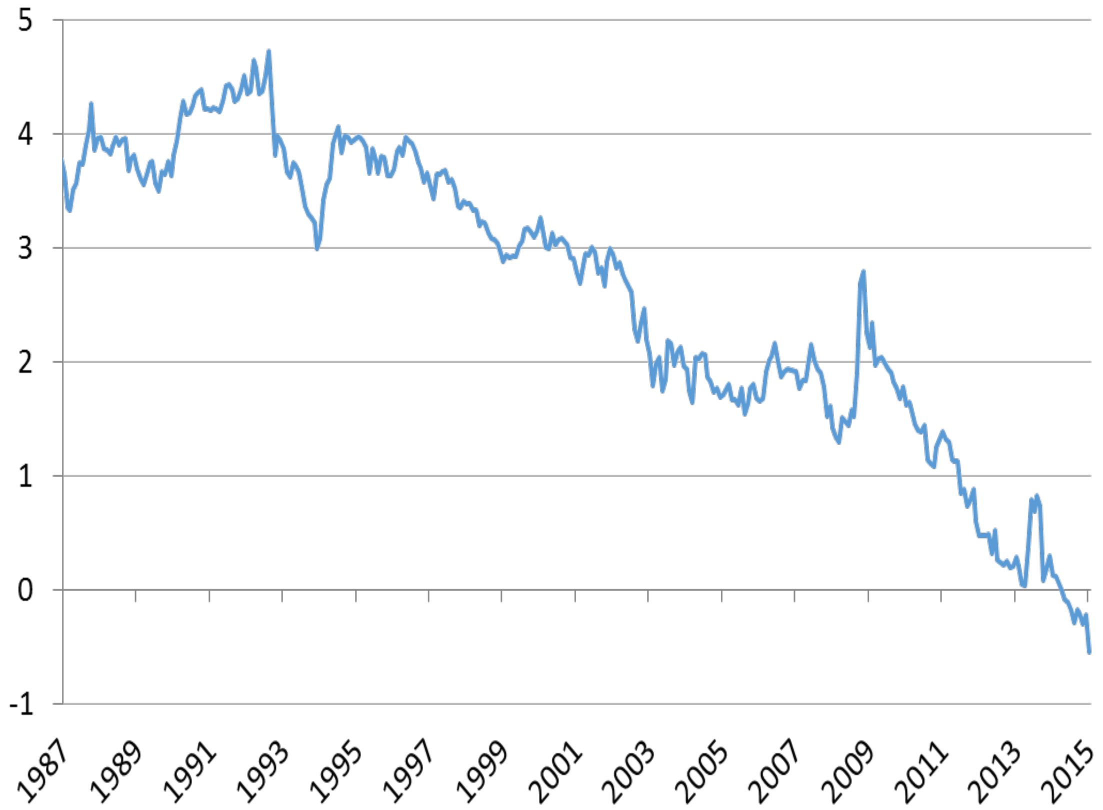
# Context

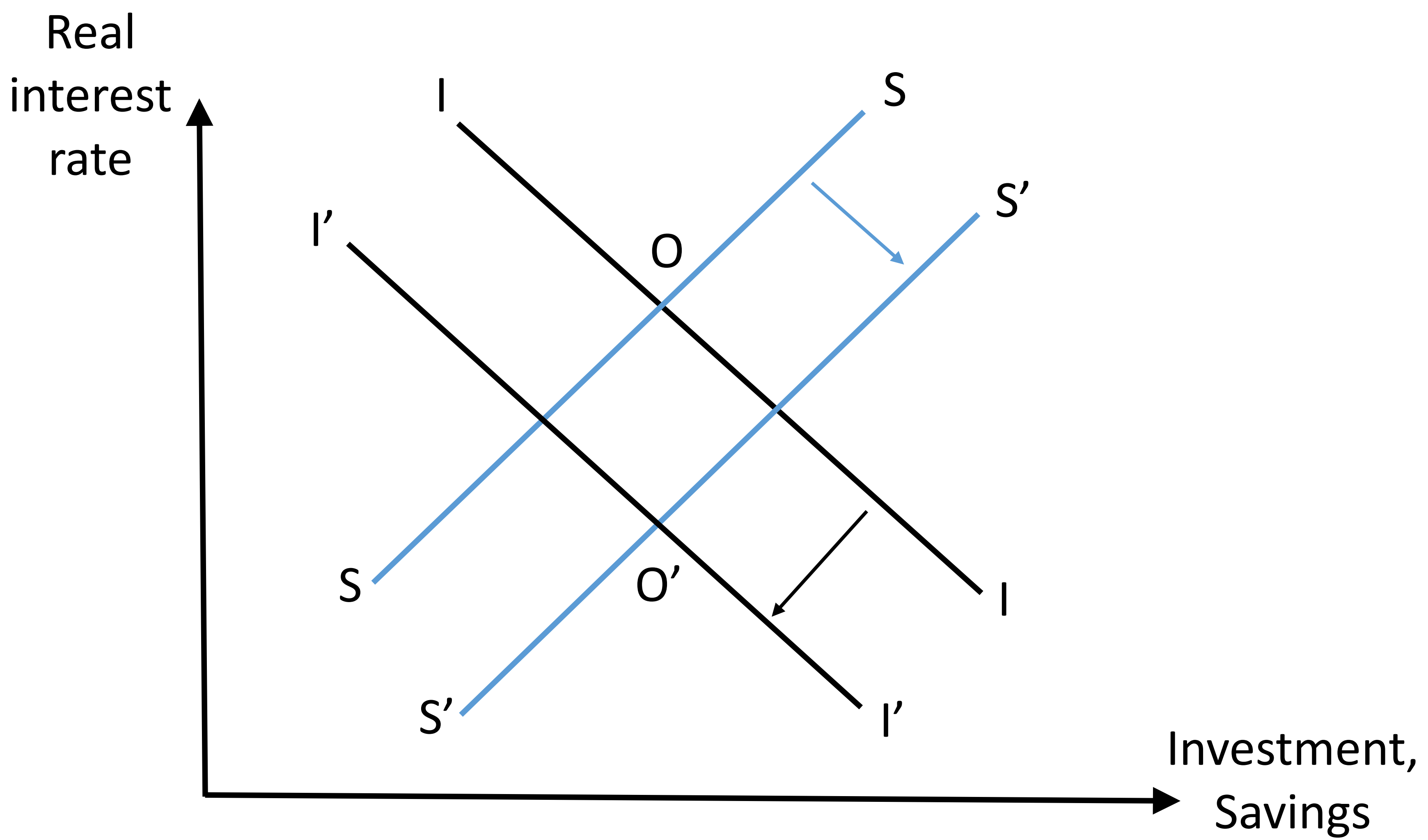
- Natural real (safe) interest rate is unusually low
  - Not a reflection of 2007-8 crisis
  - Only precedent is around WW2, but that was an era of financial repression
- Possible causes:
  - Savings 'glut'
  - Investment 'strike'
  - Portfolio shifts in favour of safe assets

"World" 10-year risk-free real interest rate

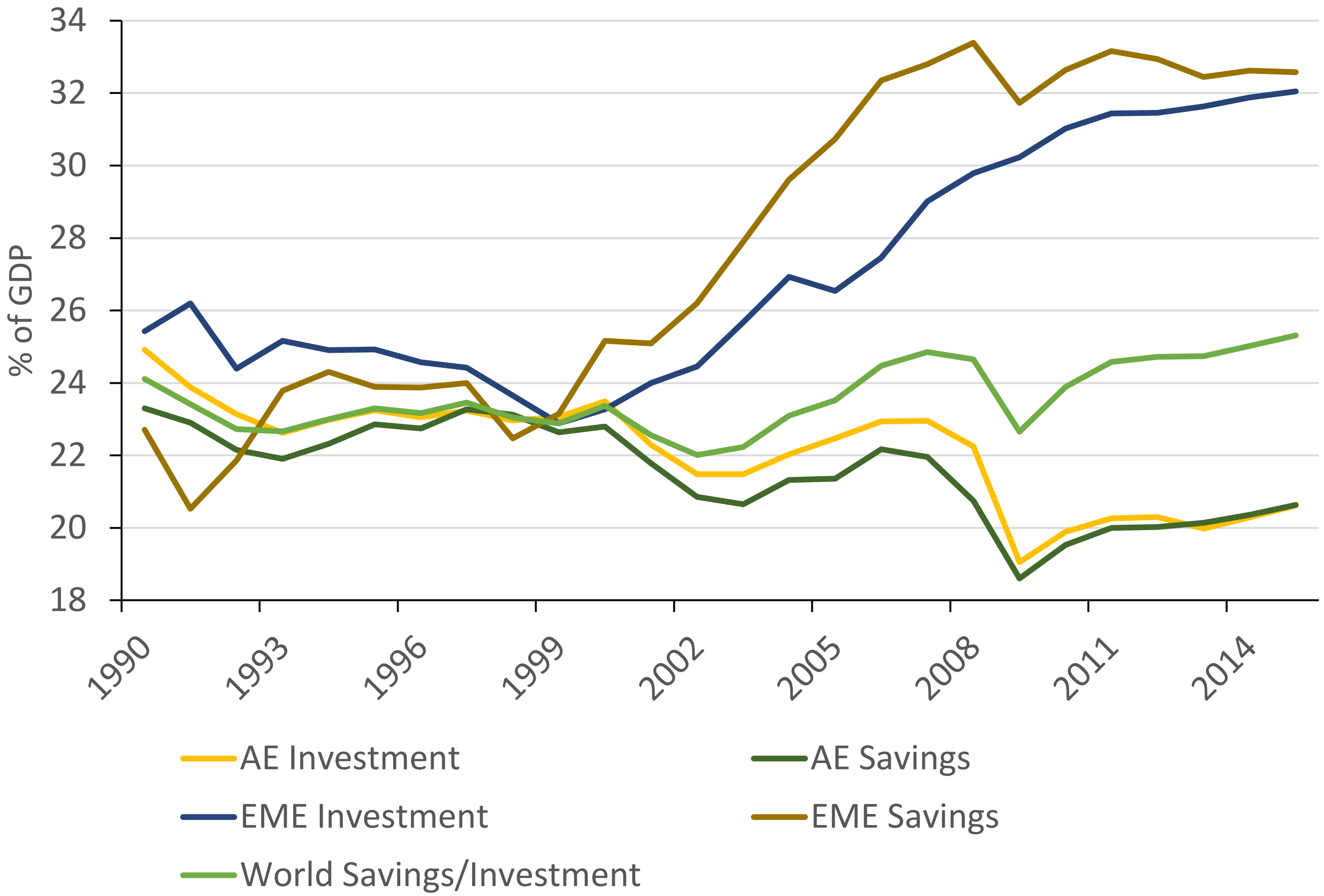



Source: King and Low (2014) updated.

# Global capital market



# Savings and Investment Shares (% of GDP)

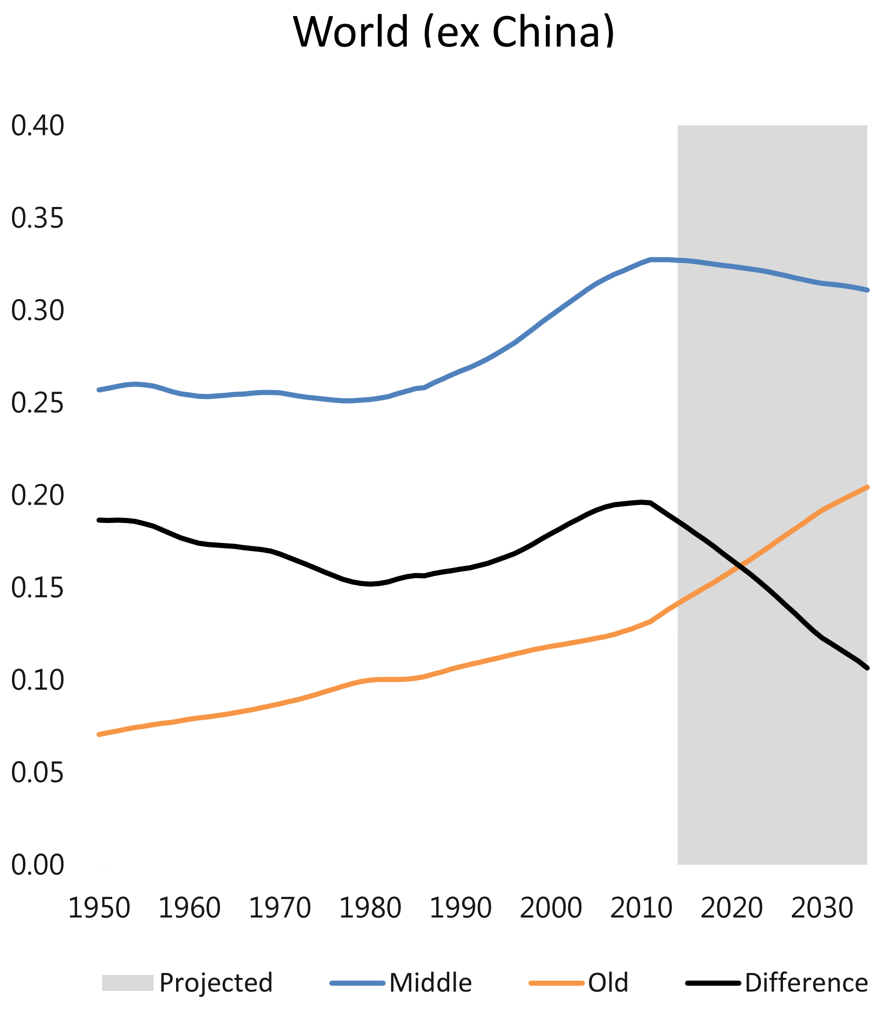


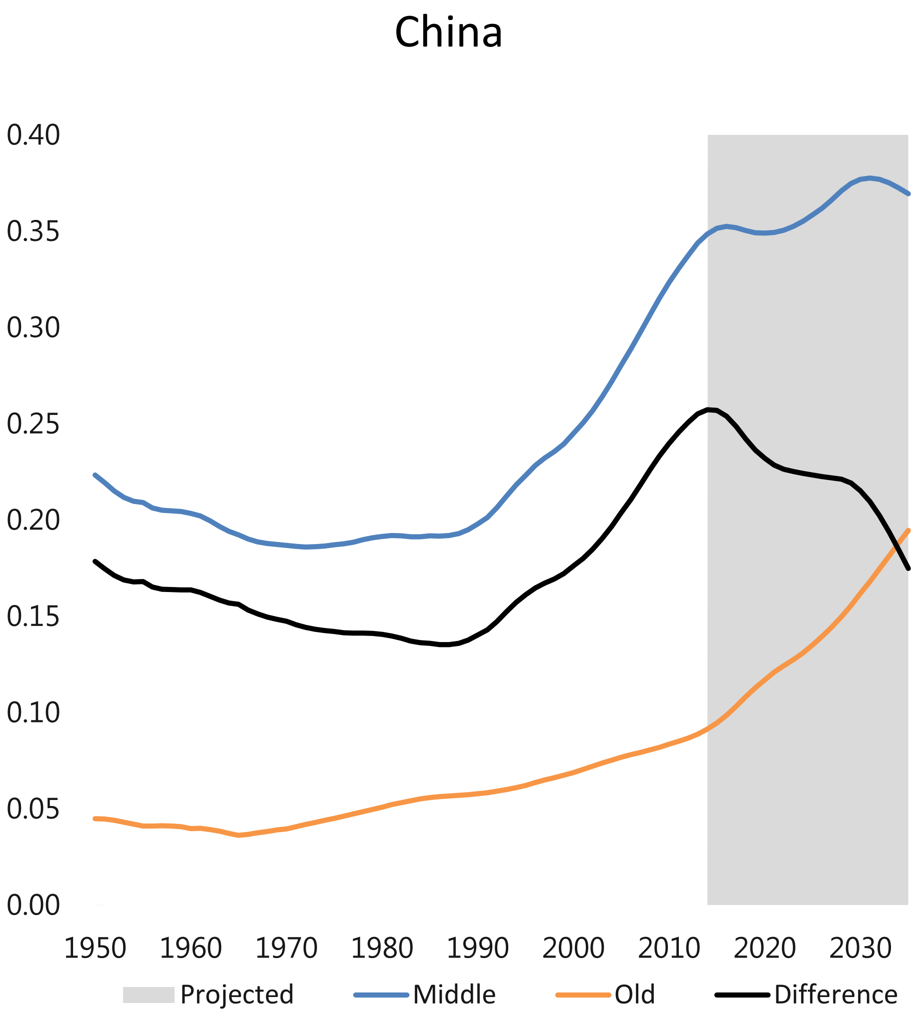

Source: IMF WEO database

# Causes: Propensity to save

- Higher propensity to save (Bernanke)
  - Demography
  - High savings in China
  - Chinese financial integration
  - Income inequality
  - Post-crisis effects

# Past and projected population shares




Source: United Nations.

# Demographic pressure and savings propensities


Source: United Nations and IMF WEO database
Note: Observations are averages for the US, China, Euro area (Germany, France, Italy, Spain, and Ireland), Japan, UK, India, Korea, Brazil, Mexico, and Russia over the following 5-year periods: 1995-1999, 2000-2004, 2005-2009, and 2010-2014

# Causes: Propensity to invest

- Lower propensity to invest (Gordon, Summers)
  - Demographics
  - Slower TFP growth
  - Shift in capital intensity of production
  - Falling relative price of capital goods
  - Post-crisis effects

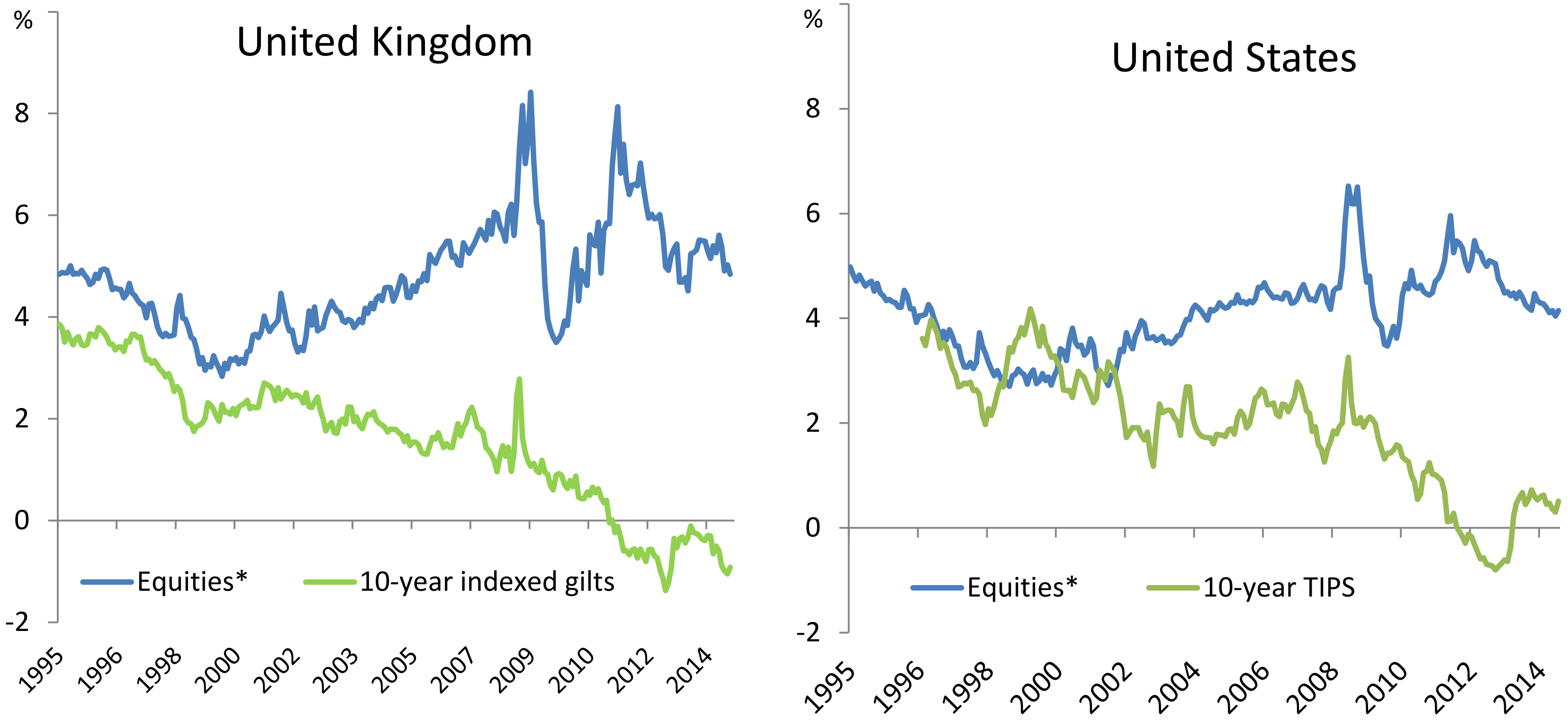
# It is not so easy to foresee the future…

- “Heavier-than-air flying machines are impossible.” (Lord Kelvin, President of the Royal Society, 1895)
- “Everything that can be invented has been invented.” (Charles Duell, Commissioner, US Office of Patents, 1899)
- “The wireless music box has no imaginable commercial value. Who would pay for a message sent to nobody in particular?” (David Sarnoff, 1920s)
- “Who the hell wants to hear actors talk?” (Head of Warner Brothers, 1927)
- “I think there is a world market for maybe five computers.” (Thomas Watson, Chairman of IBM, 1943)
- “There is no reason anyone would want a computer in their home.” (Ken Olsen, Chairman of DEC, 1977)

# Causes: Asset demands/supplies

- Higher demand for safe assets
  - Emerging-economy reserve accumulation
  - Heightened “disaster” risk (Barro)
  - Tightening of bank liquidity regulation
  - Central bank asset purchases (QE)
- Lower supply of safe assets (Caballero-Farhi)
  - Crisis revealed many AAA-rated ABS not safe
  - Euro-area debt crisis revealed some advanced-economy sovereign debt not safe
  - …But lot of issuance by “safe” sovereigns too!

# Safe and risky yields



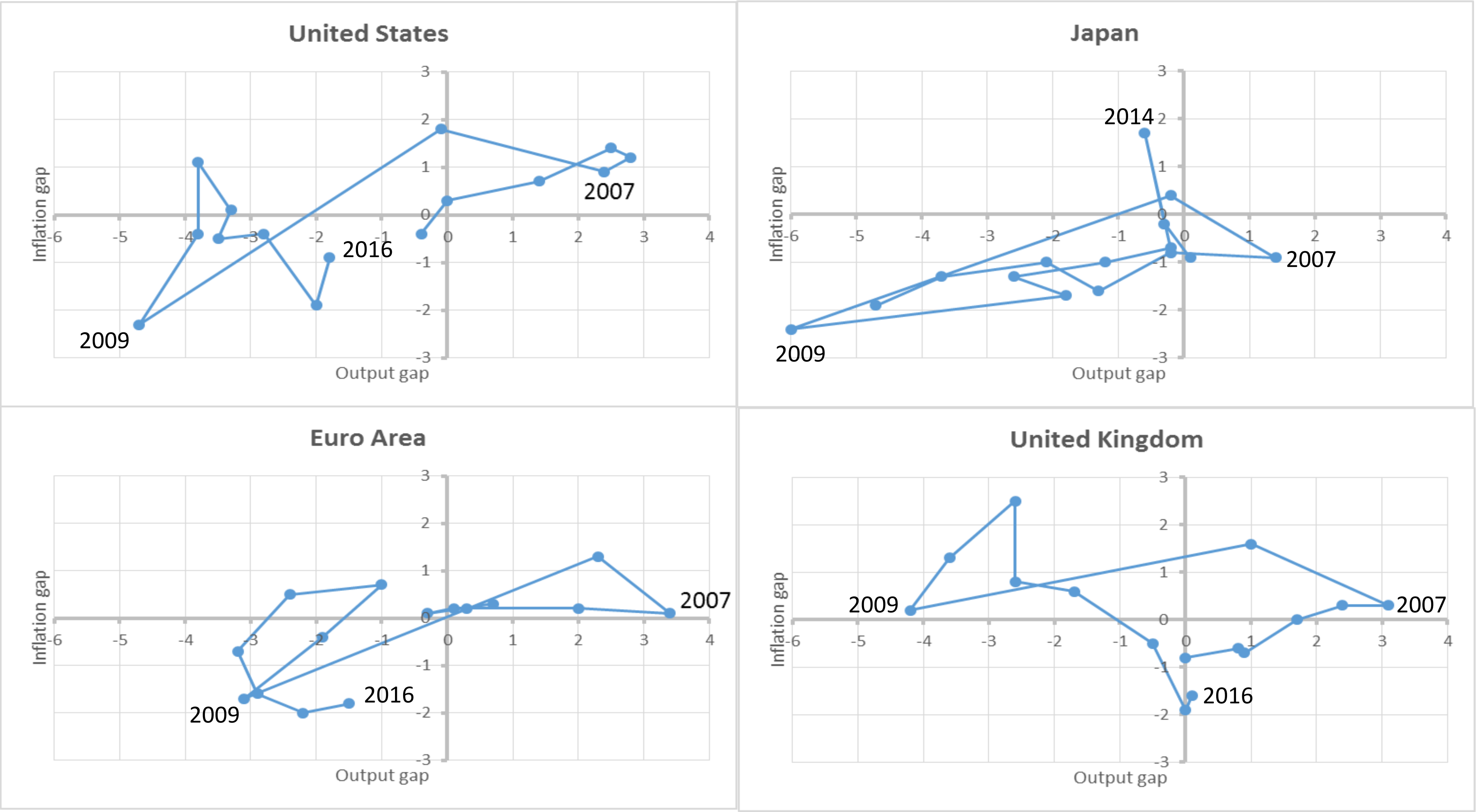

*Leverage-adjusted inverted Price-Earnings ratio.

Source: Bank of England, following Broadbent (2014) “Monetary policy, asset prices and distribution”.

# Prospects for the natural real rate

- Reasons to expect some rise in natural real rate of interest
  - Demographic shares have just turned round
  - Dwindling headwinds from financial crisis
- …But yield curve very flat and distribution of short rates truncated on down side → market puts low weight on rise
- Low natural real rate will persist for some time yet
- Means lower bound (LB) on policy rates will bite more often
  - Reifschneider-Williams: >15% of time at ½% v 5% of time at 2½%
  - And variance of shocks bigger too

# Inflation gaps v OECD output gaps, 2002-16

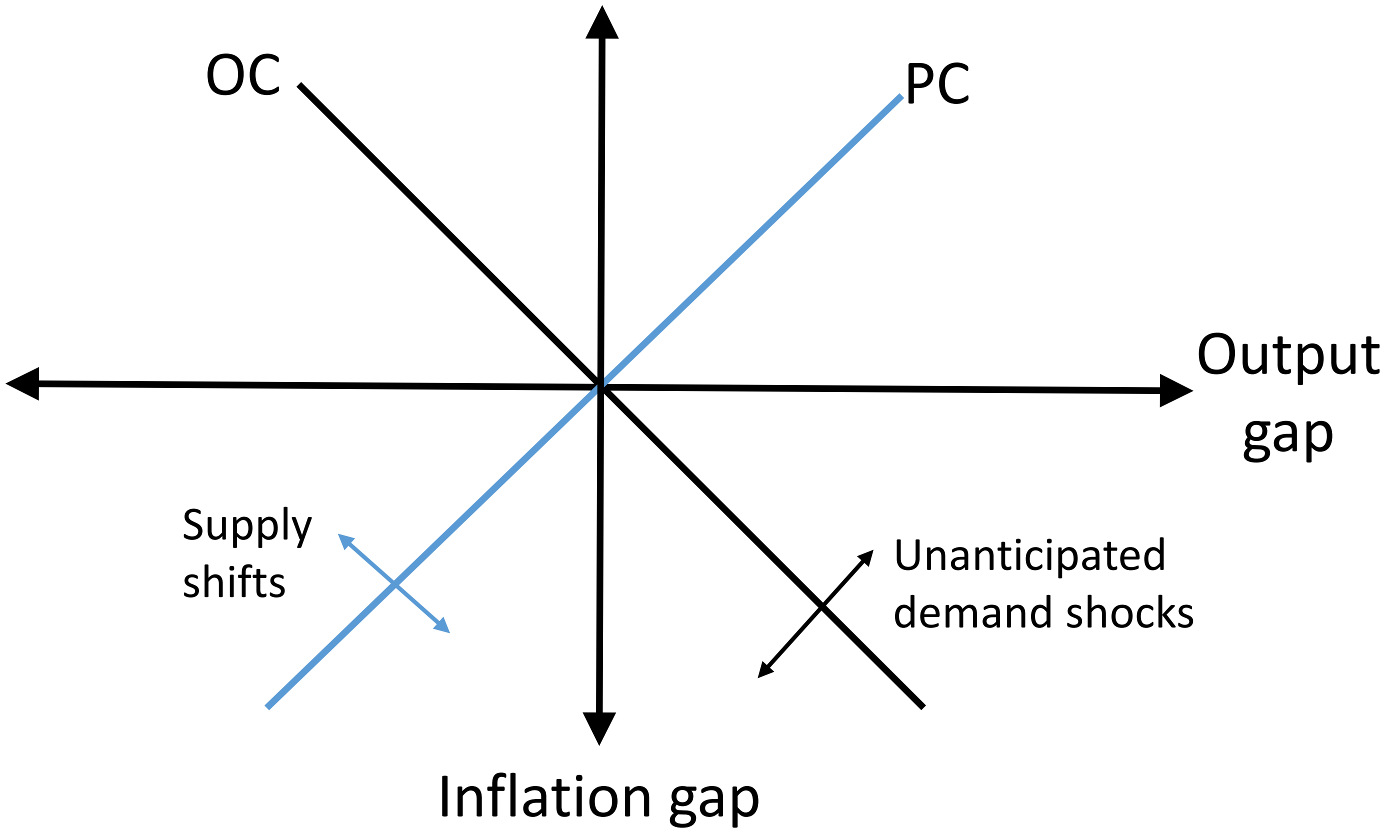



Source: OECD

# Why are inflation and output gaps positively correlated?

- Simple optimal stabilisation ($\pi$=inflation gap; $x$=output gap)
  - Loss function: $\pi^2 + \lambda x^2$
  - Phillips curve: $\pi = \alpha x + s$
  - Central bank problem: $Min_{E[x]} E[\pi^2 + \lambda x^2]$ subject to $\pi = \alpha x + s$
  - First Order Condition: $\alpha E[\pi] + \lambda E[x] = 0$
- (Expected) inflation and output gaps should have opposite signs
  - Positive correlation → CBs could have got *both* inflation *and* output closer to target by pursuing more expansionary policy

# Optimal policy and Phillips curve

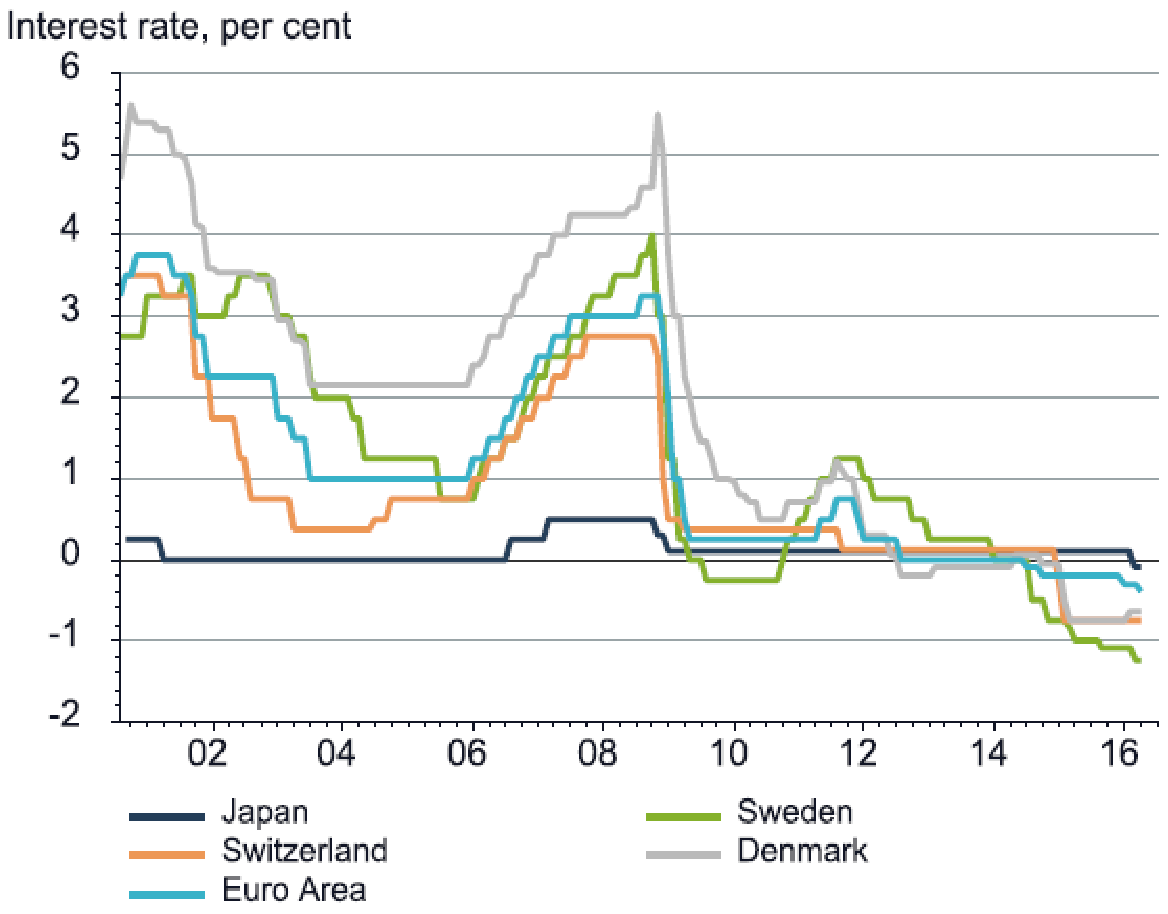


# Why are inflation and output gaps positively correlated?

- Possible explanations for positive correlation:
  - Headwinds worse than expected (Yes)
  - Policy constrained or less effective than expected (Yes)
  - Excessive inflation aversion (BoJ?)
  - More expansionary policy *politically* difficult (ECB?)
  - Worried about financial stability risks (unlikely)

# Responses: Negative policy rates

- How low is the Lower Bound?
  - Technical LB negative
  - BoE work suggests UK banks substitute into cash at -½ to -1%
- But economic LB may be higher
  - BoE stopped at +0.5% because of squeeze on bank profits (demand multiplier? FS risks?)
  - Can attenuate with tiered rates
  - May also have a counter-productive effect of expectations



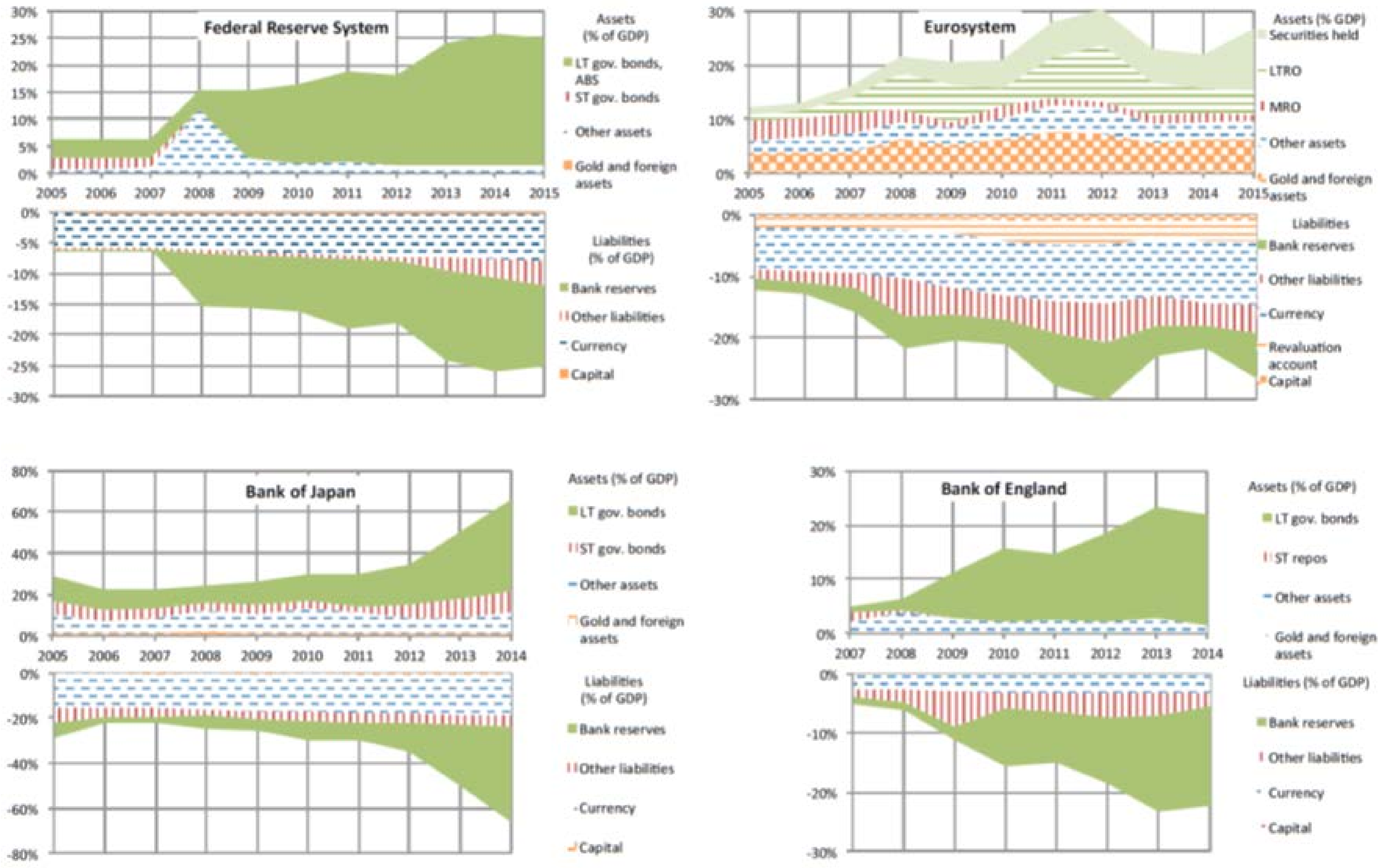
# Responses: Forward Guidance

- Keep policy rate "lower for longer" (time-inconsistent path)
  - Incredible as policy makers can't commit their successors
  - Price-level/nominal GDP target just re-locates the problem
  - Actual guidance more about communication ("Delphic") than implementing a time-inconsistent policy ("Odyssean")
- BoE experience in 2013-4 mixed
  - State-dependent policy (rates held at 0.5% until unemp. < 7%)
  - Guidance appropriate given key uncertainty related to productivity
  - …But interpreted as time-related and productivity forecast poor
  - Arguably damaged MPC's credibility

# Responses: Asset purchases (Quantitative Easing)

- Event studies suggest QE1 reduced US & UK yields by ≈ 1pp
- But…:
  - Less effective with normally functioning markets & flat yield curve
  - Significant distributional consequences
  - Purchases of public debt takes central bank into political territory
  - Purchase of private assets takes central bank into political territory
  - Effect on exchange rates/capital flows creates international tension
  - Heightened financial stability risks (encourages search for yield, etc)
- BoE's Asset Purchase Facility was designed to address the political economy aspects

# Balance sheets of major central banks



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# Responses: Raise inflation target to 4%?

- Seems like a “no-brainer”, but…
  - Higher inflation → bigger distortions to relative prices and need for more frequent price adjustment
  - Loses benefit of “stable prices” heuristic
- Even if it is a good idea, now is surely not the time
  - Difficult to achieve when inflation already stuck below target, so may have adverse effect on CB credibility and expectations
  - May lead to a rise in inflation risk premium
  - If *do* go down this route, better to do it opportunistically

# Responses: More exotic options

- Problem is option of switching to cash to avoid negative rates
- Eliminate cash altogether(Rogoff)
  - Cash useful for everyday transactions, despite electronic payments
  - Need to *abolish* cash – very illiberal!
- Charge interest on cash (Gesell)
  - Can implement by e.g. stamping, but also likely to be unpopular
- Break link between cash and deposits/reserves (Eisler/Buiter)
  - No substitution if expected rate of depreciation of exchange rate for cash v. deposits/reserves = interest rate on deposits/reserves
  - CB can break rate between cash and reserves, but not deposits
  - Would dual numeraires generate inefficiencies?

# Responses: Helicopter money

- Helicopter money = Bond-financed tax cut + permanent QE
  - Reserves pay interest so wealth injection smaller than it appears
  - MPC out of wealth low; infrastructure spending, etc., better
  - How is permanence of QE credible?
- CB will reverse QE if and only if consistent with inflation mandate
  - Are they doing a form of helicopter money already?

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# Financial stability

- Persistently low real rate makes retirement provision more expensive; encourages move to higher-yielding risky assets
  - OK if goes into equities and leads to more investment
  - Less so if leads to (leveraged) purchase of existing real estate assets
- Impact on markets
  - Relative-performance benchmarks for fund managers, etc, slow to adjust → (leveraged) search for yield
  - Investors willing to pay for a +ve return; less so for a -ve return → some business models unviable unless returns levered up
- Bottom line: economy more open to financial boom-busts

# Financial stability and monetary policy

- BIS view: CBs should "lean against the wind" (LAW) to lower FS risks
- But do long-term benefits offset short-term costs?
  - Svensson (NK model + crisis costs from Schularick-Taylor): No, because credit insufficiently sensitive to higher interest rates
  - First-best is to address sources of excess credit growth directly through appropriate Pigouvian taxation or regulatory actions
  - Macro-pru as second line of defence
  - LAW ought to be just third line of defence
- Mandates should recognise FS case for deviating from target
  - Introduced into BoE remit in 2013

# Conclusions

- Monetary policy not totally ineffective, but cost-benefit calculus becoming progressively less appealing
- Time for other policies (fiscal, structural) to play a bigger role
  - Discourage excessive savings (private and public)
  - Raise public investment and encourage private investment
  - Such policies would raise the natural real rate of interest and simultaneously create more headroom for monetary policy
- Should spend more time thinking how best to do this and less on trying to squeeze more out of monetary policy!