Stagnation Traps

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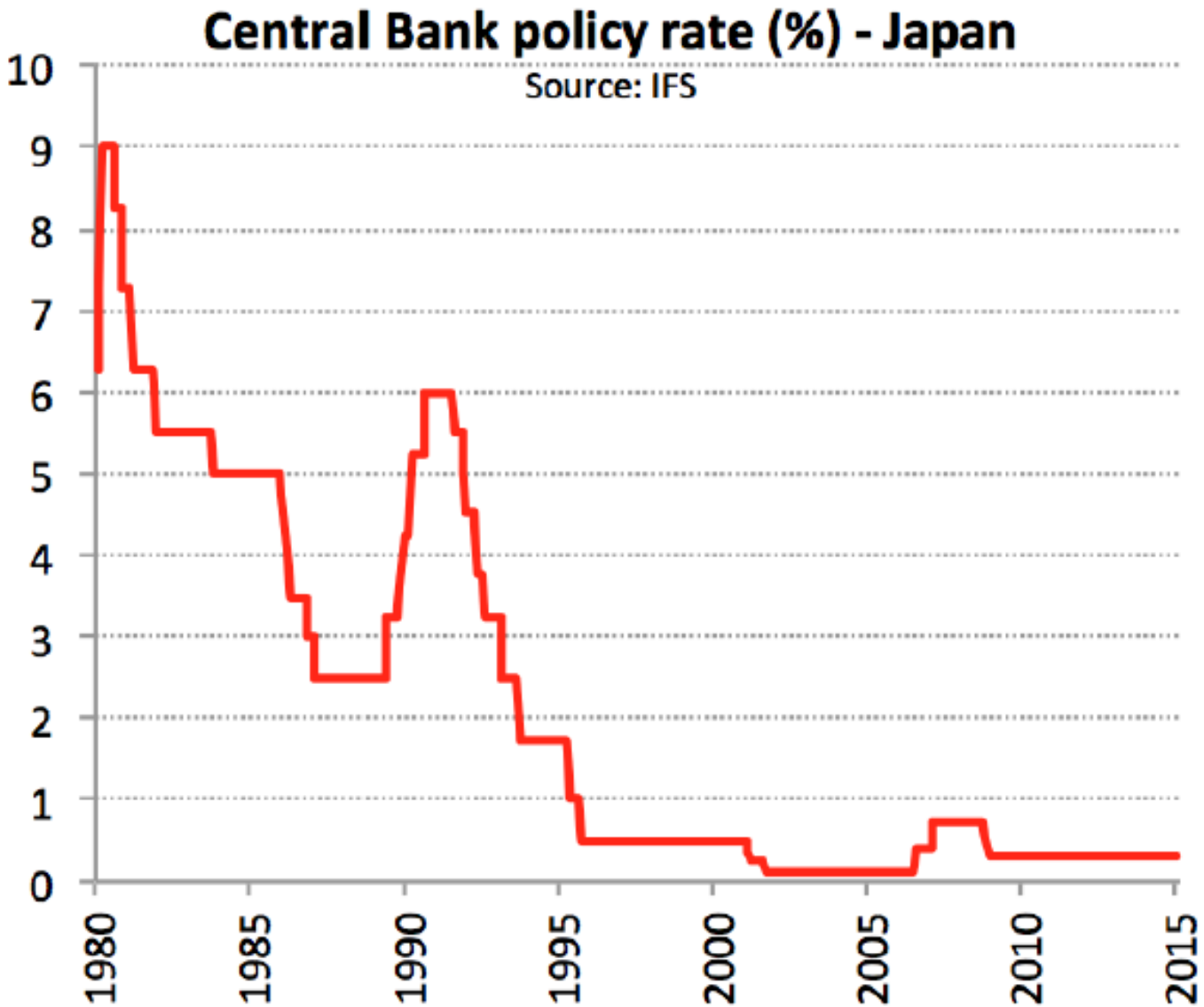
Motivation

- Recent debate on Post Crisis Slumps and Secular Stagnation (Summers, 2013).
- Current debate on secular stagnation:
  - Supply side perspective (Gordon, 2015);
    - Return to low productivity plus structural headwinds
  - Demand side perspective (Summers, 2013 and Krugman, 2014);
    - Aggregate demand-shortage.and zero policy rates: Are we missing a link between the two?

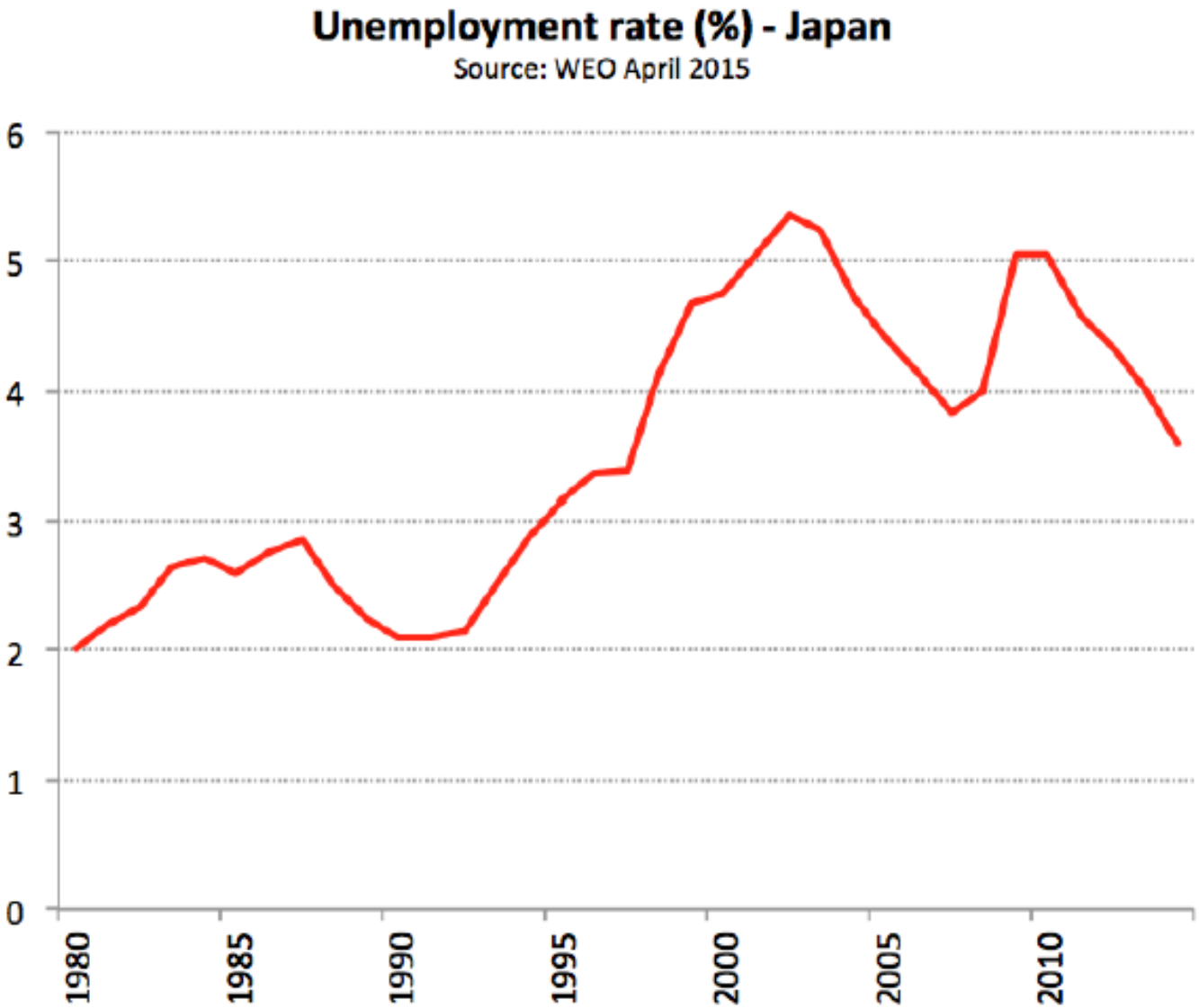
Research Questions and Motivation

- Aftermath of the Global Financial Crisis.
  - Two decades-long stagnation affecting Japan since early 1990s;
  - Slow recoveries from the 2008 global financial crisis in the US, Europe and UK;
- All episodes feature:
  - Long-lasting slumps with policy rates close to the lower bound;
  - Weak (potential) output growth.

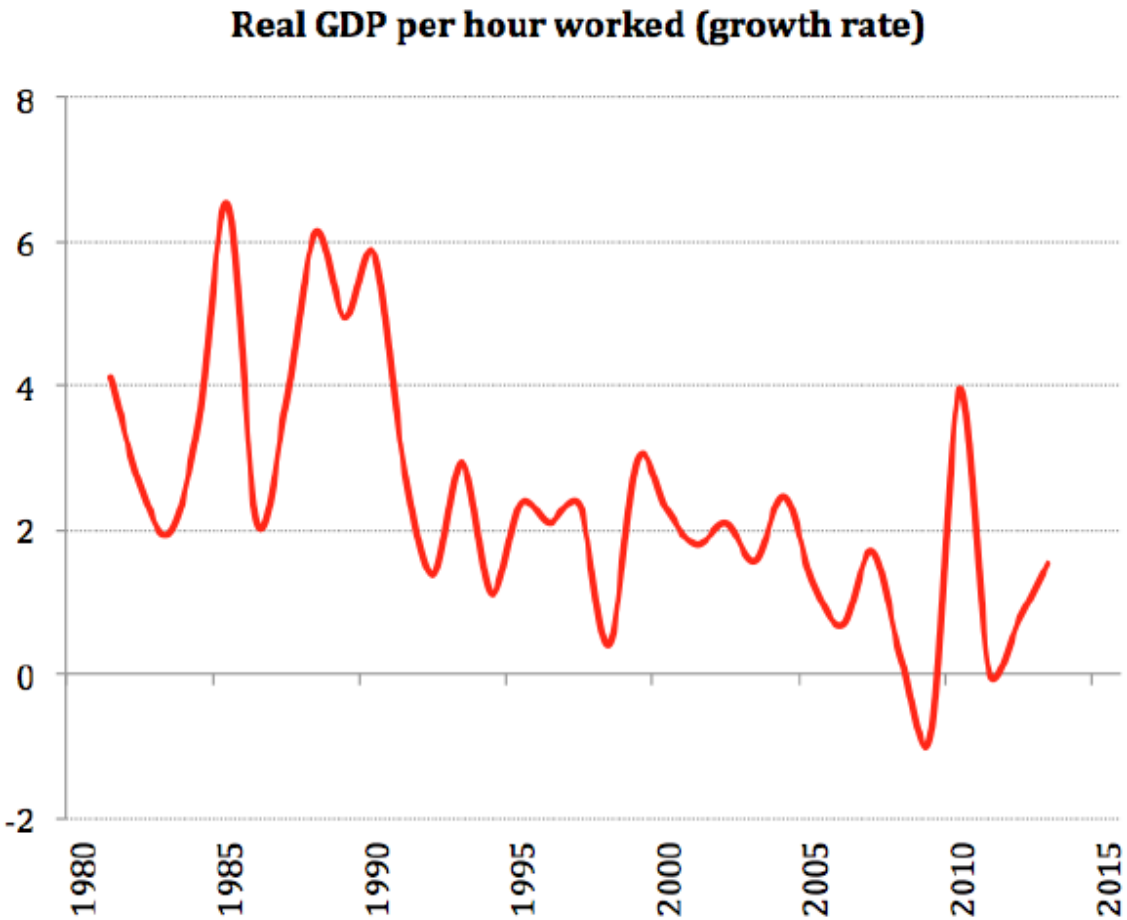
Japan: Policy Rate



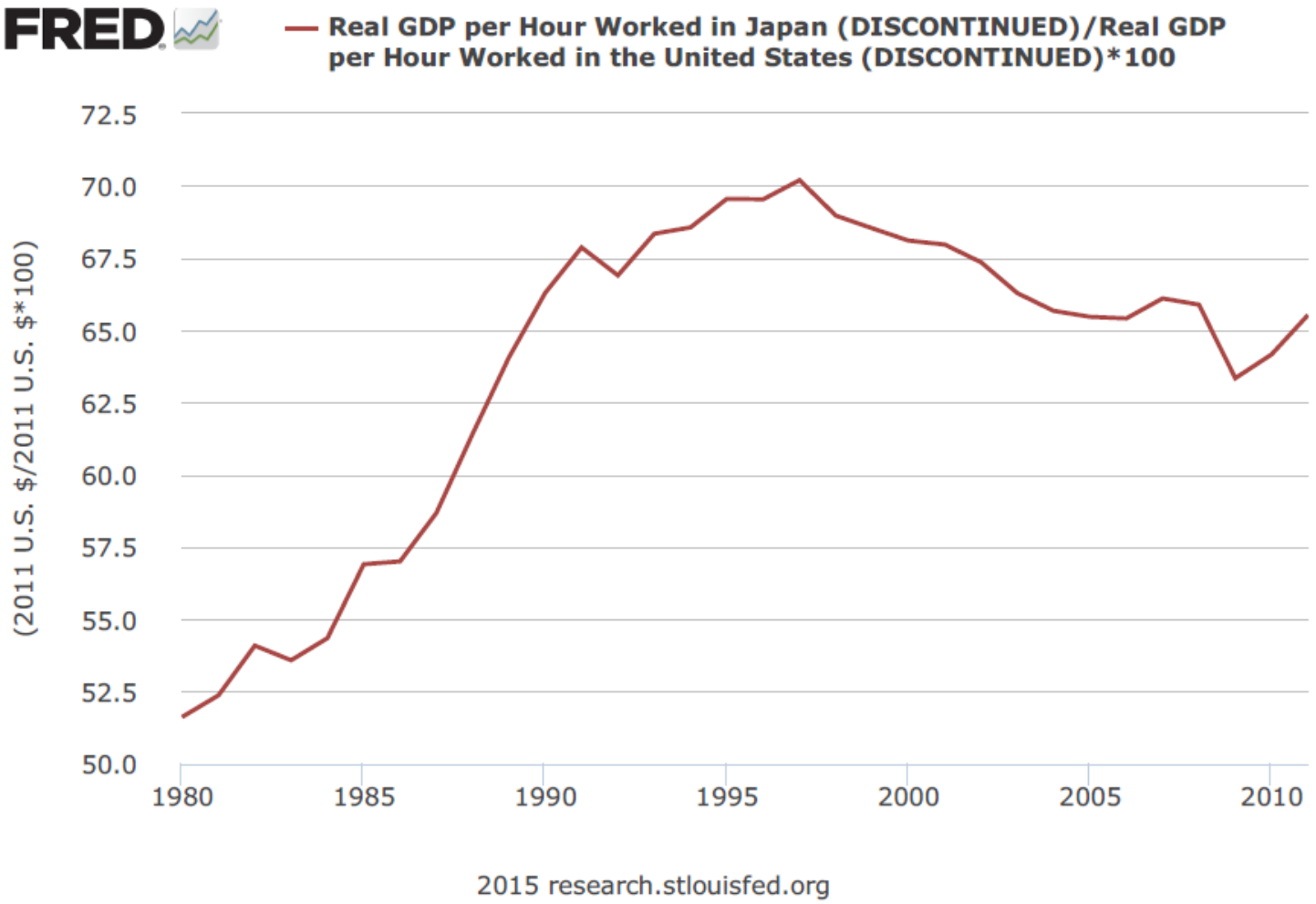
Japan: unemployment rate



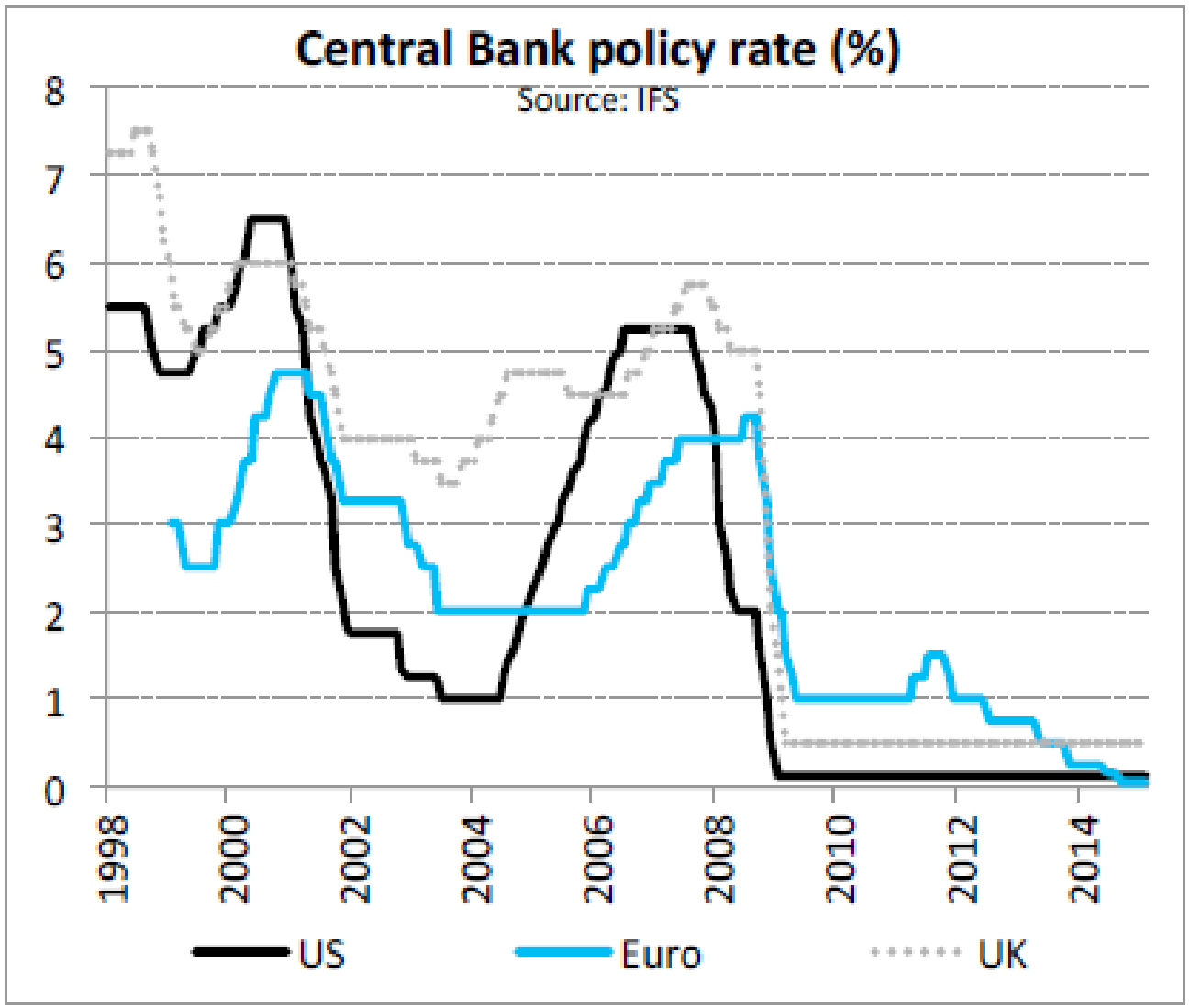
Japan: real GDP per hour worked



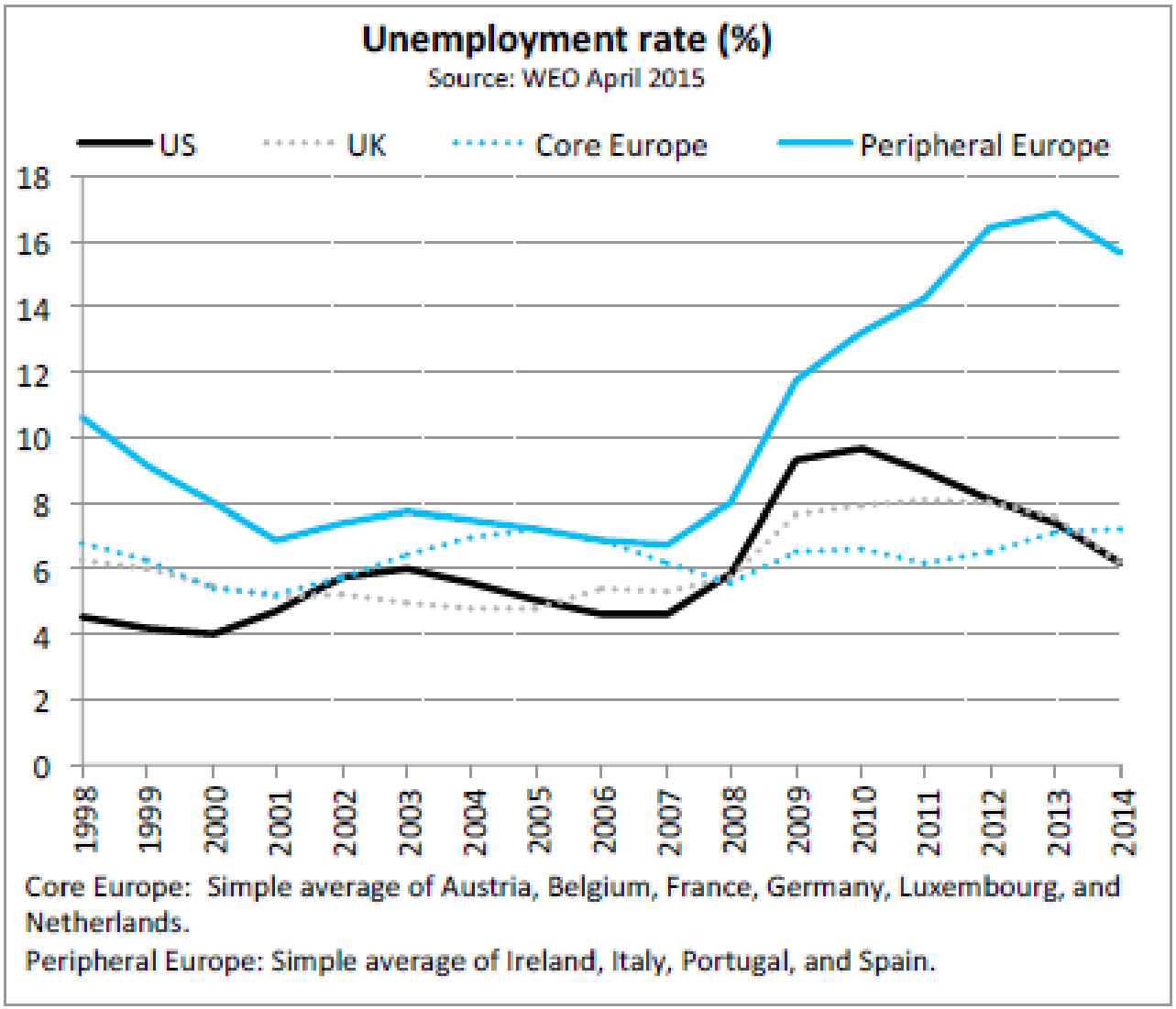
Japan vs US: real GDP per hour worked



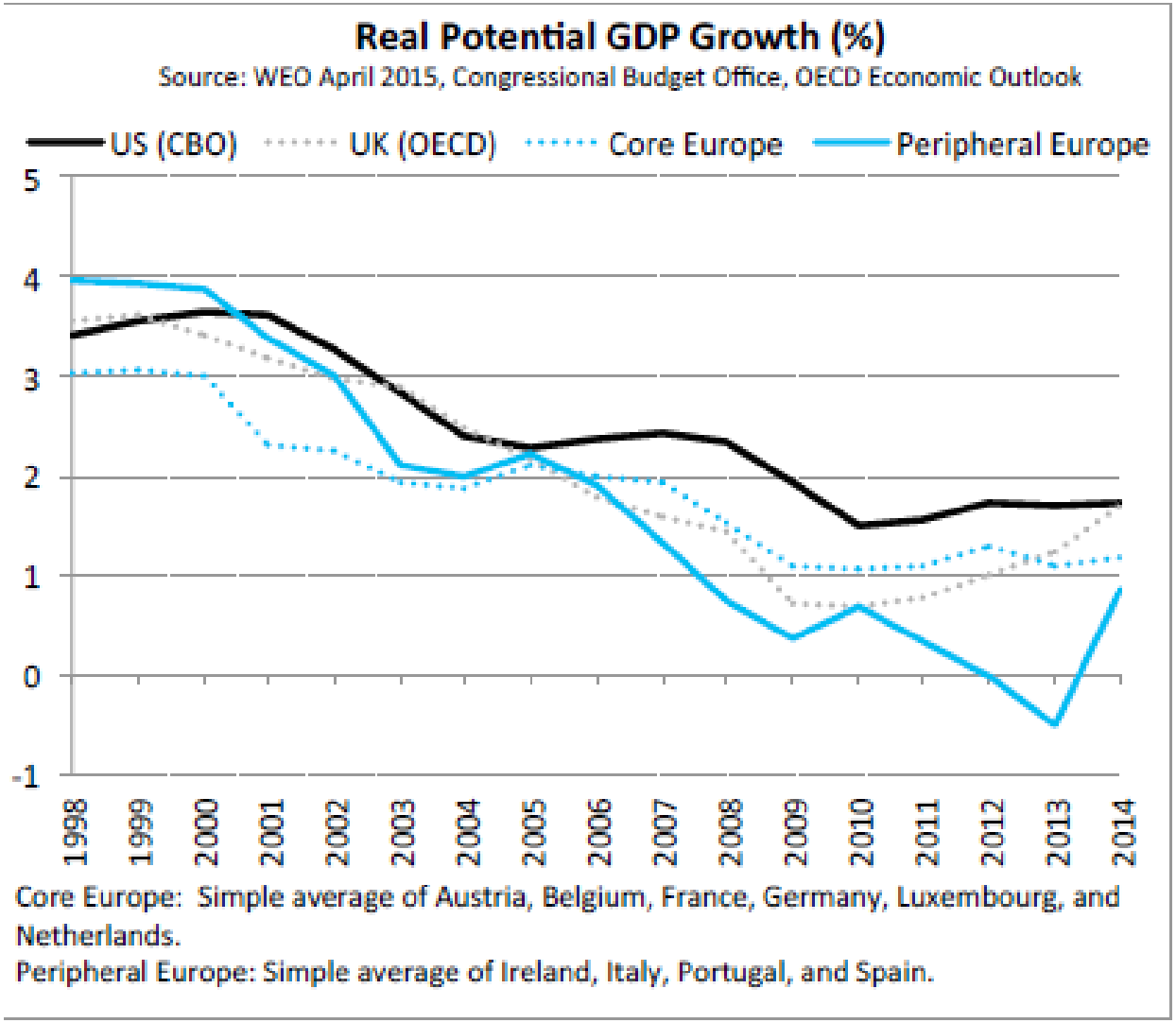
US, UK, Europe: policy rate



US, UK, Europe: unemployment



US, UK, Europe: Real potential GDP growth



Our perspective

- Can insufficient aggregate demand lead to economic stagnation?
- *Keynesian Growth* framework;
  - Unemployment due to weak aggregate demand when monetary policy is constrained at the zero lower bound.
  - Growth is the result of investment choices by profit maximizing firms.
- Two-way interaction between aggregate demand, interest rates and growth
  - Weak aggregate demand has a negative impact on firms' profits and investment in innovation resulting in low growth;
  - Low growth depress interest rates, undermining the central bank ability to sustain demand by cutting the policy rate.

Key results

- Key result: permanent, or very persistent, slumps characterized by high unemployment and low growth are possible.
- Two steady states
  - Full employment, high growth and positive nominal interest rate.
  - Unemployment, low growth, zero lower bound that binds $\longrightarrow$ *stagnation trap.*
- Fluctuations determined by expectations.
- Policies that foster growth can eliminate the stagnation trap equilibrium if they are sufficiently aggressive.

Outline

- *Model;*
- Sentiments, growth and stagnation traps;
- Policy analysis.

The model

- Model of vertical innovation *a la* Aghion and Howitt (1992) and Grossman and Helpman(1991) augmented with nominal wage rigidities and zero lower bound on nominal interest rate.
- Firms produce goods and invest in research/innovation;
- Household supply labor and consume;
- Central Bank sets monetary policy.

Equilibrium

- **Supply side**
- Growth rate of the economy depends on aggregate demand.
- Higher aggregate demand implies higher profits and higher investment in innovation that leads to higher growth

$$g = f(y)$$

Households

- **Demand Side:**
- Two components:
- Real Interest rate is proportional to growth rate of the economy (intertemporal link):

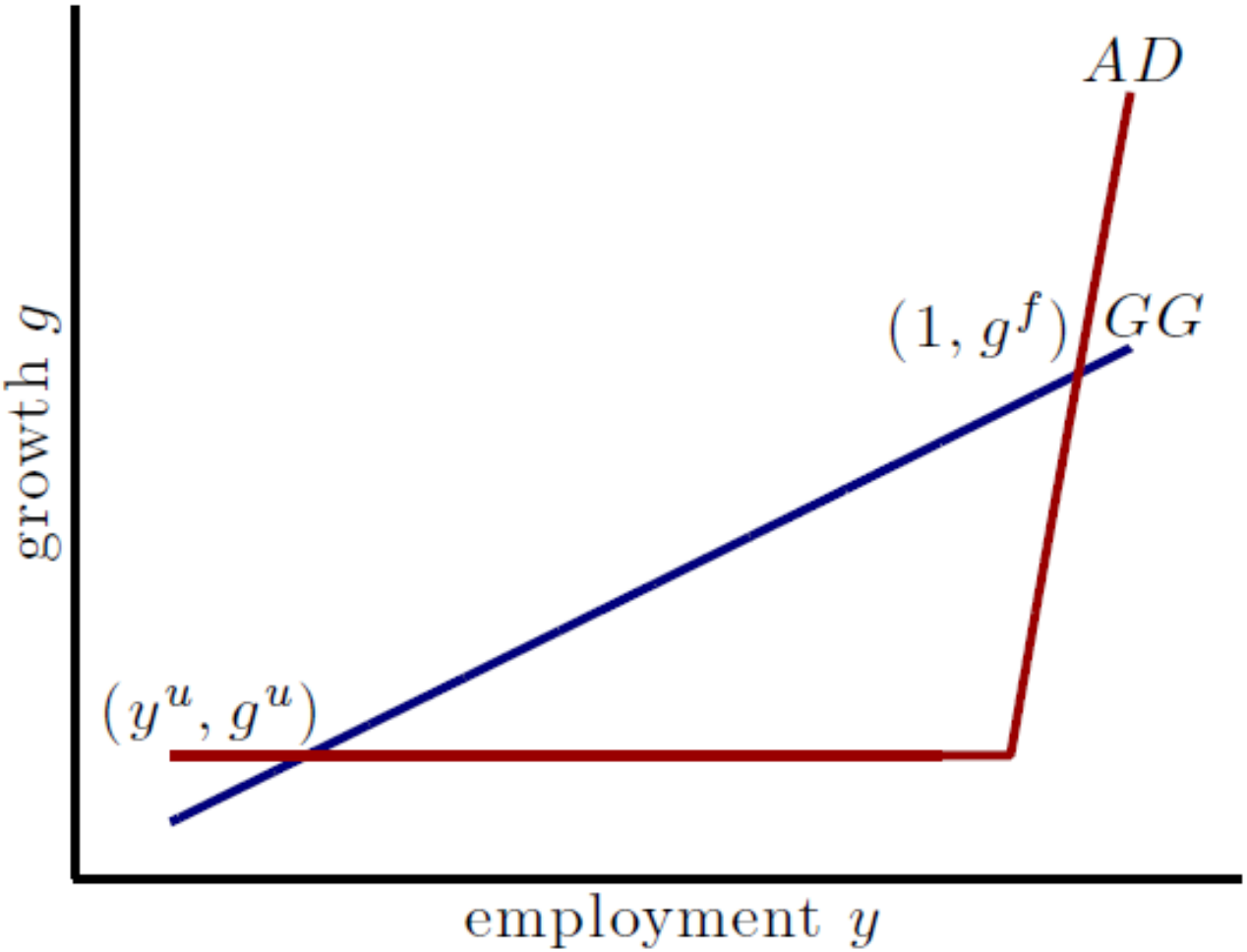
$$R = h(g)$$

- The higher is the growth rate, the higher is the interest rate.
- Taylor rule: Central bank stabilize output around full employment

$$R = \Psi(y)$$

- Limit on lower bound on R.

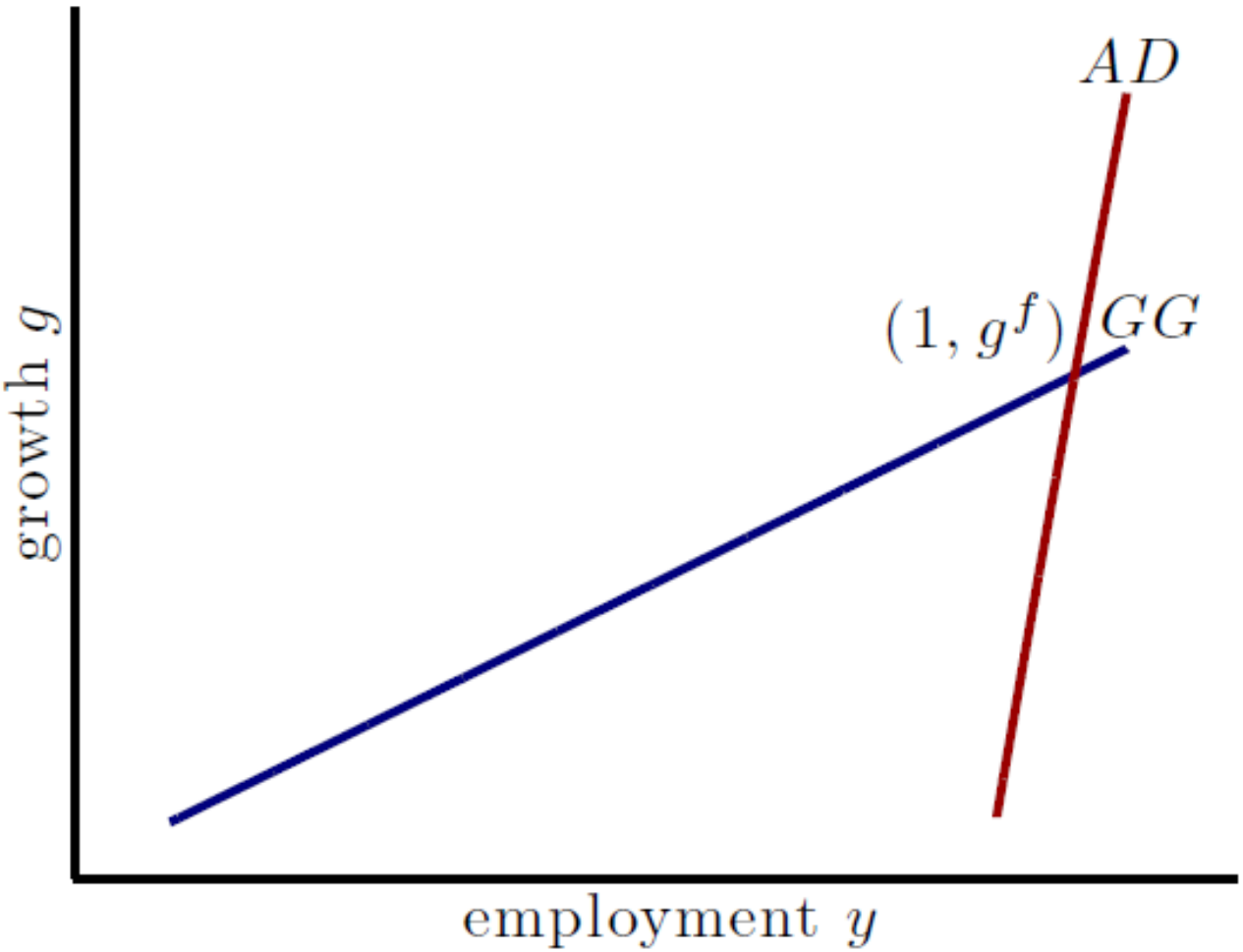
Two Steady States



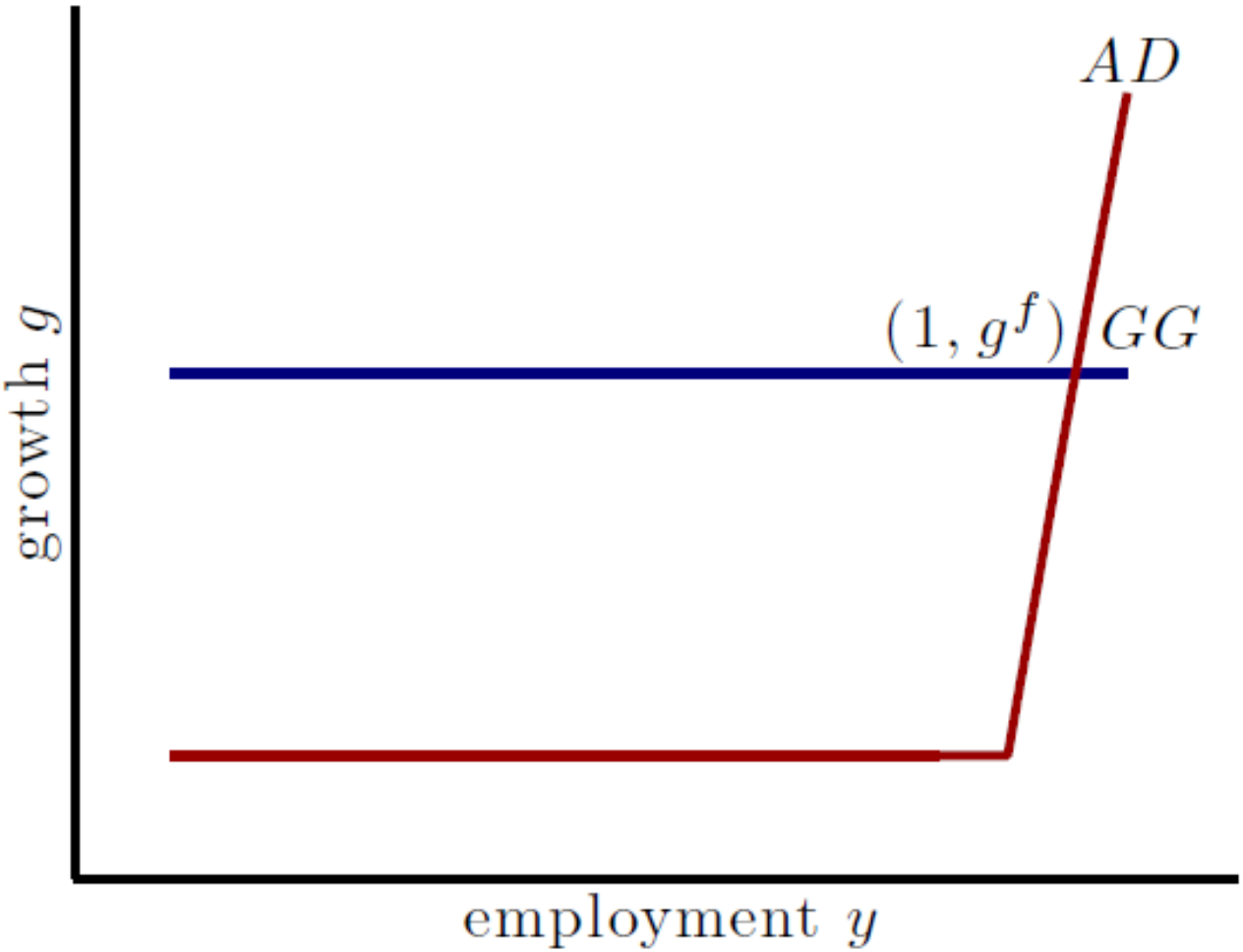
Understanding Stagnation Traps

- Aside from the usual full employment steady state, the economy can find itself in permanent liquidity trap with:
  1. Negative output gap ($y^u < 1$)
  2. Weak growth ($g^u < g^f$)
  3. Monetary policy constrained by the zero lower bound ($i^u = 0$)
- Stagnation trap: the combination of liquidity and growth trap.
- The zero lower bound constraint and the dependence of growth from current output gap are both crucial in generating the stagnation trap.

No zero lower bound



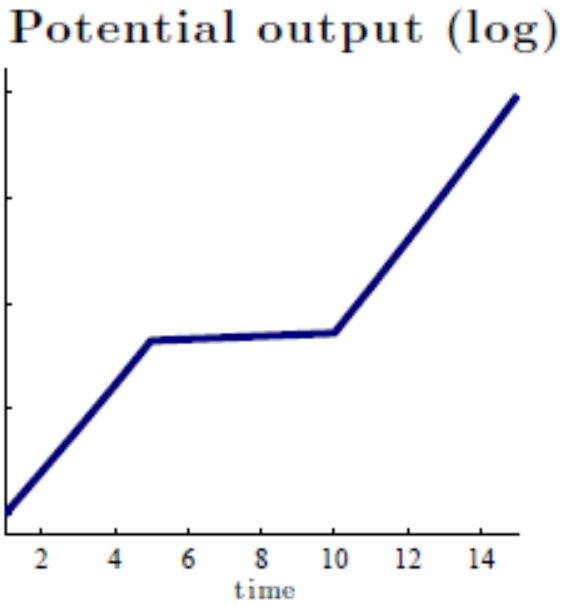
No dependence of growth from output gap

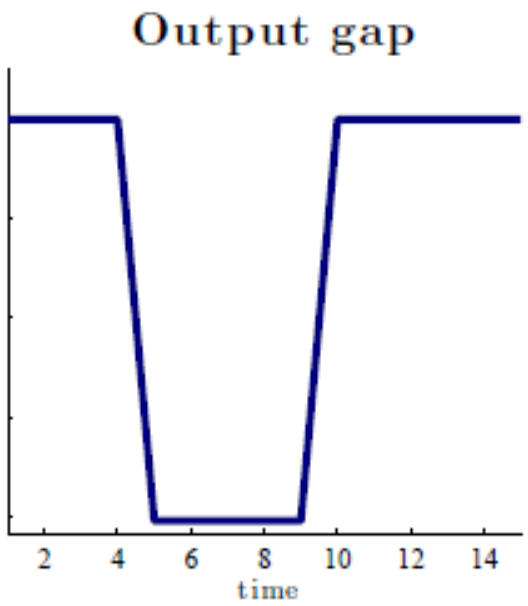


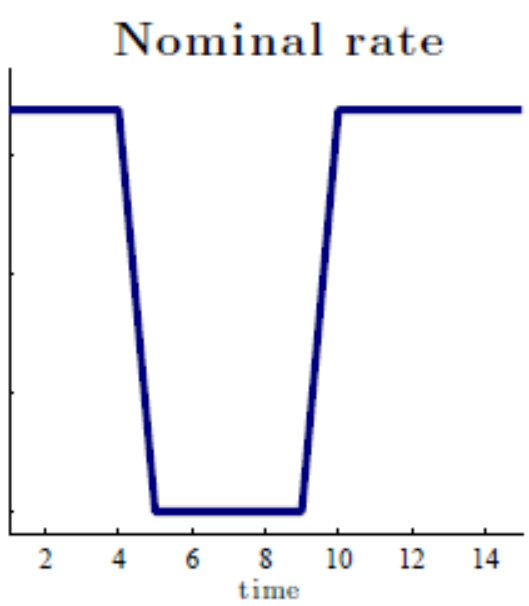
The role of confidence shock

- Equilibrium is determined by expectations.
  - Suppose agents expect that growth will be low
  - Low expectations of future income imply low aggregate demand
  - Due to zero lower bound, central bank is not able to lower the interest rate enough to sustain full employment.
  - Firms' profits are low, weak investment in innovation
  - Expectations of weak growth are verified.
- Expectations of low growth can give rise to permanent, or very long lasting, liquidity traps characterized by low growth.

Temporary stagnation traps



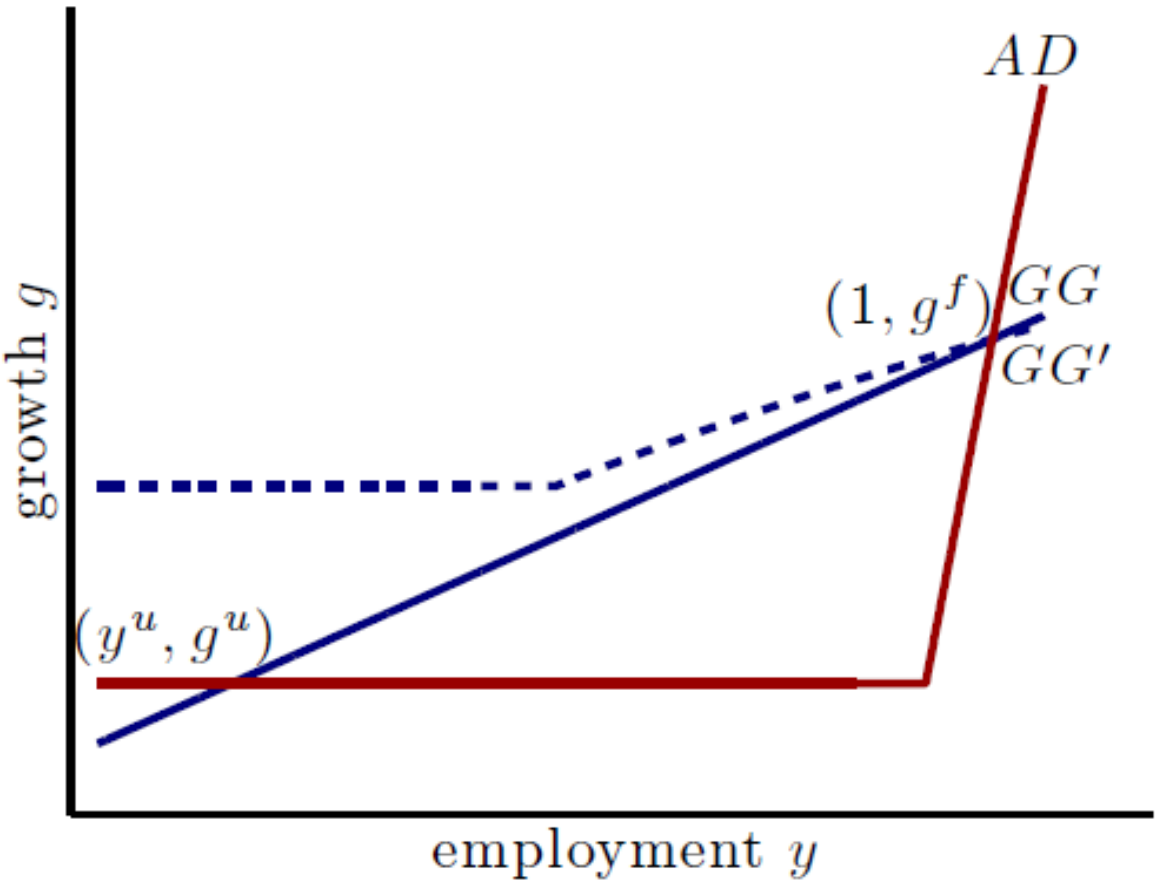




Policy implications:

- Recent emphasis on job creating growth
- Indeed an appropriate designed growth policy can eliminate liquidity traps driven by confidence shocks.
- Consider a countercyclical subsidy $s_t = s(1 - y_t)$.
- If s is sufficiently large, this policy rules out the liquidity trap steady state, while leaving unchanged the full employment steady state.

Countercyclical subsidy



Conclusions

- We develop a *Keynesian growth* model in which endogenous growth interacts with the possibility of slumps driven by weak aggregate demand
- The model features two equilibria. One is a *stagnation trap*, a permanent liquidity trap characterized by weak growth.
- Large policy interventions to support growth can lead the economy out of the stagnation trap.
- Demand creates its own supply.