The macroeconomic performance puzzle: a new model

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Resolution Foundation, SBE panel, 9th October 2018

- Empirical motivation & post-crisis performance puzzles
- A new model

Figure 1

Trend hourly productivity growth (1973-2015)

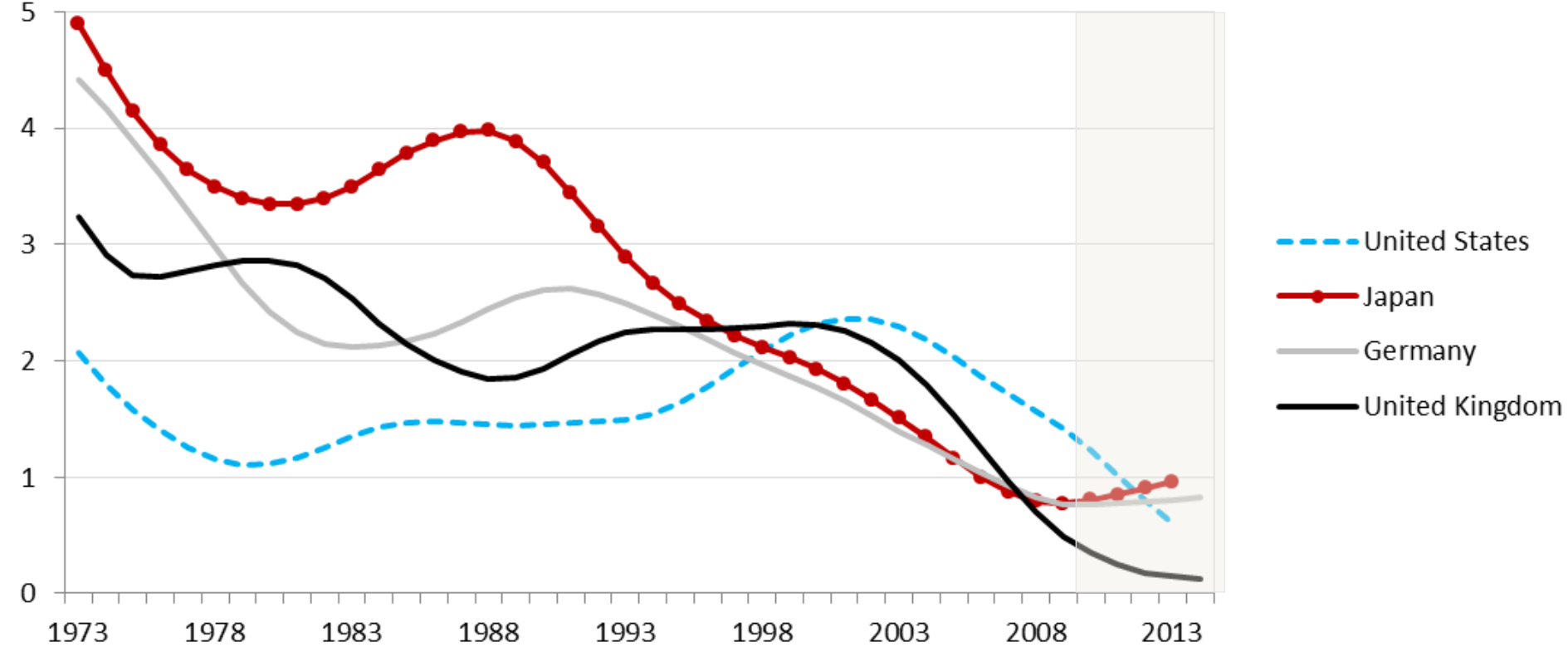
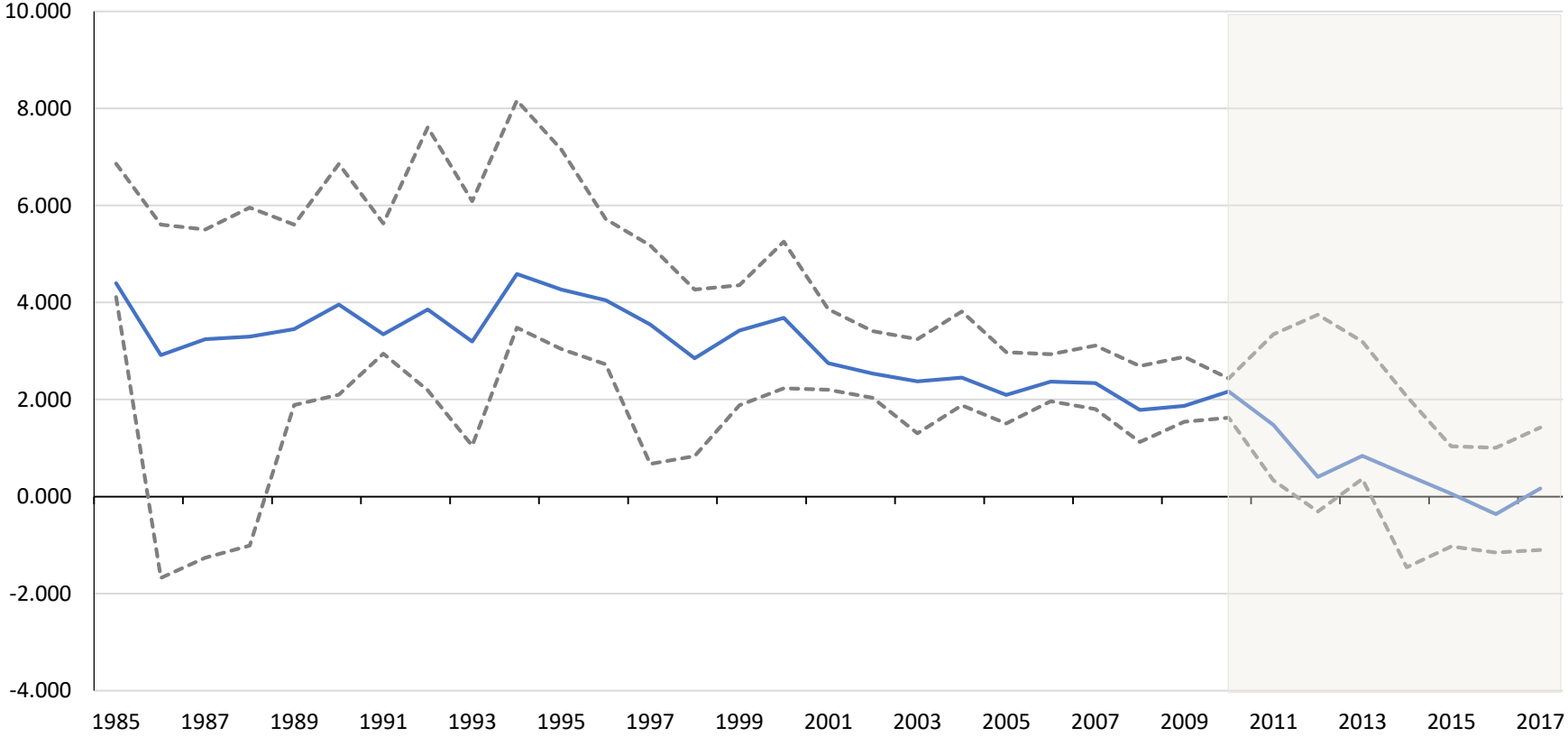
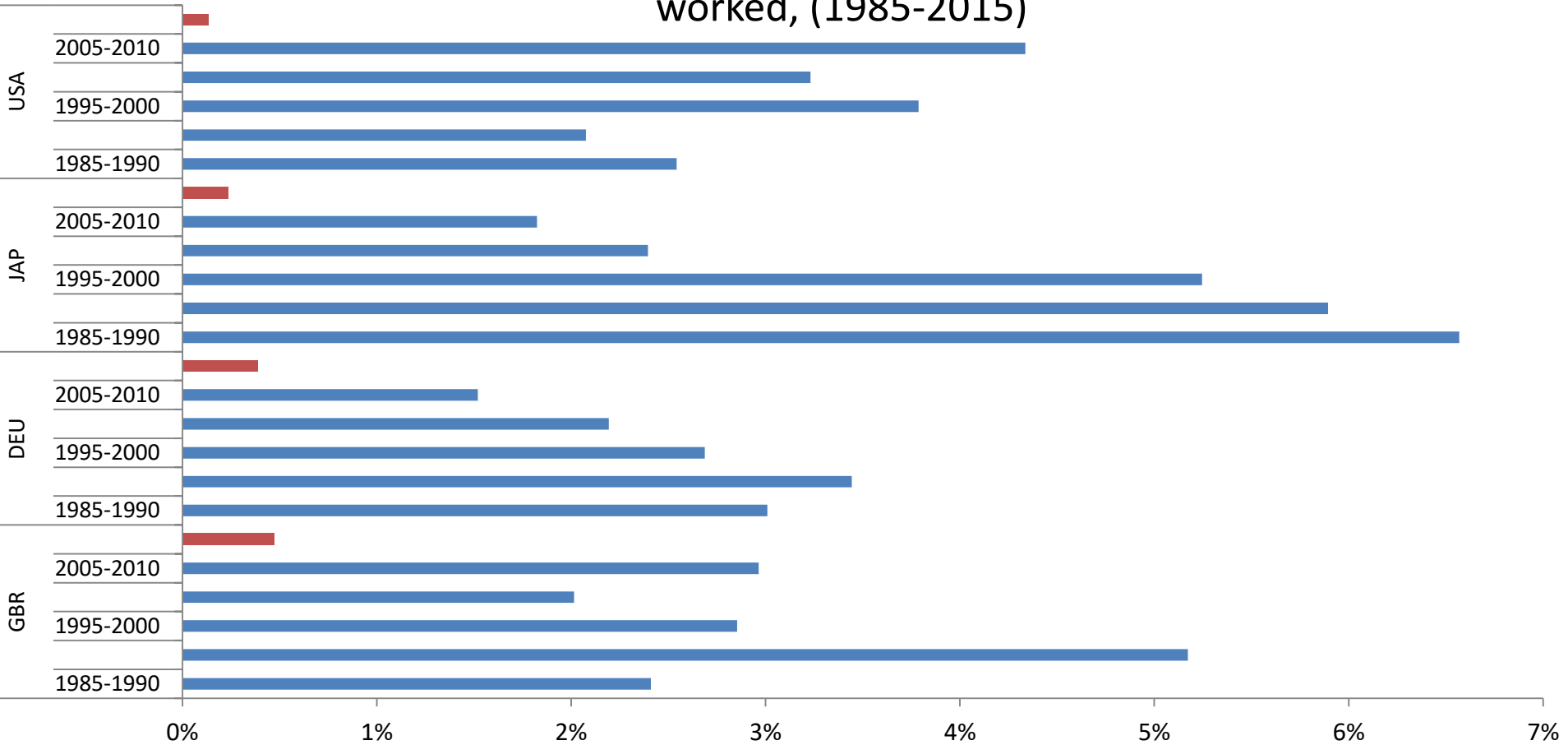


Figure 2: G7 real sovereign bond yield (1985-2017)



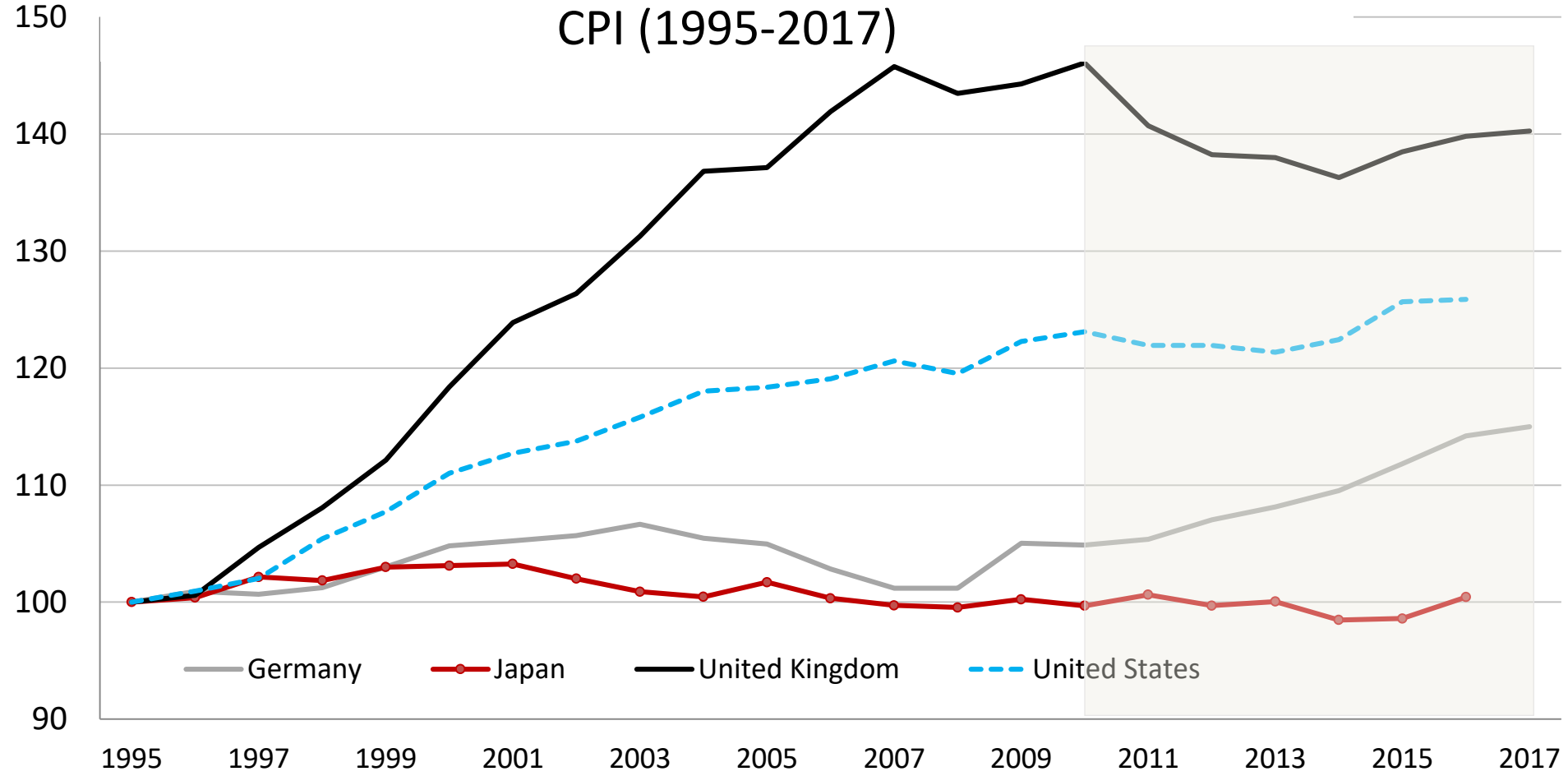
Real 10-year government bond yield, G7 weighted by GDP
Dashed lines show the minimum and the maximum.

Figure 3: Capital deepening: growth in capital services per hour worked, (1985-2015)



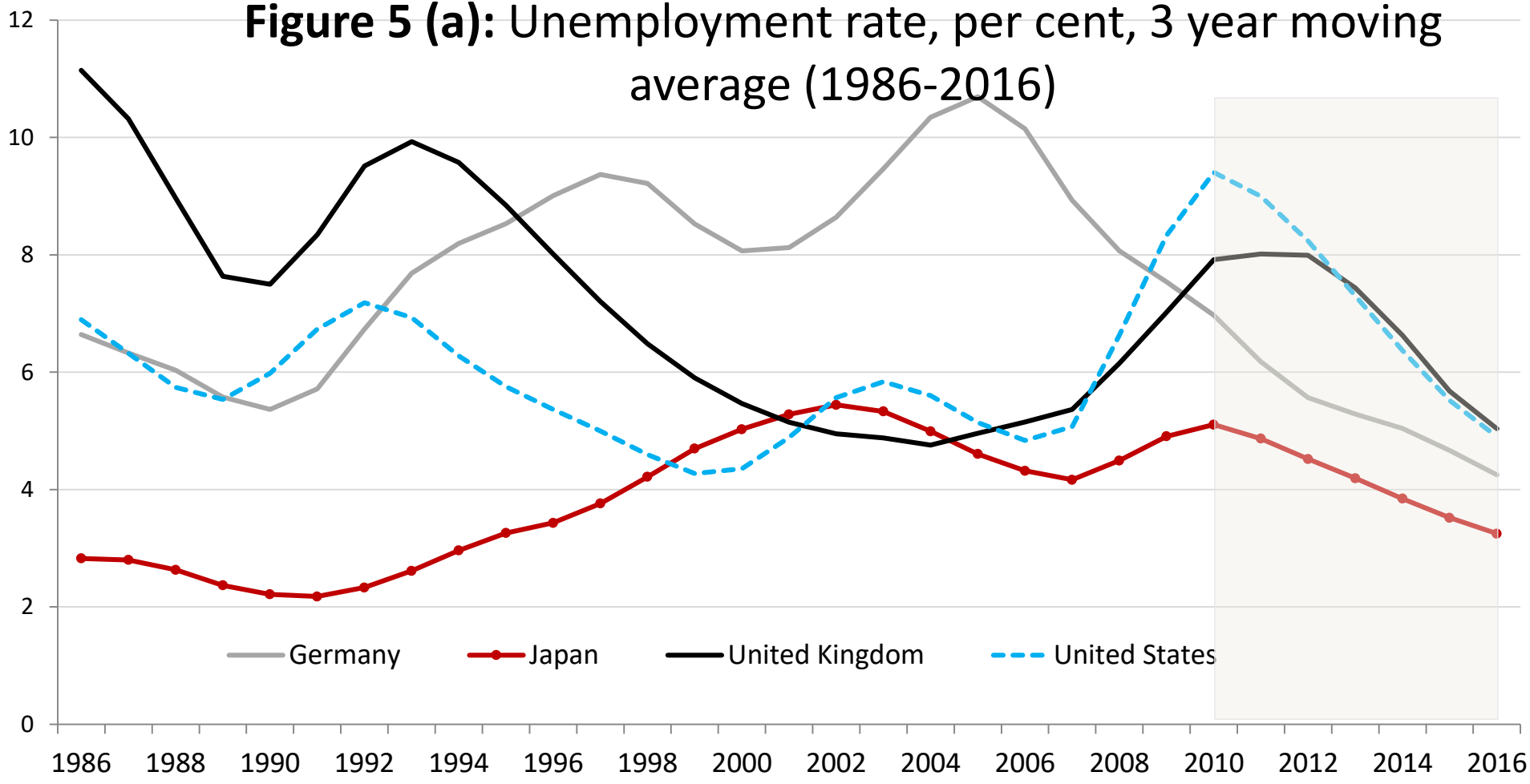
Note: Total economy, percentage change at annual rate Source: OECD. Stat, September 2018.

Figure 4: Real compensation per hour worked, deflated by CPI (1995-2017)

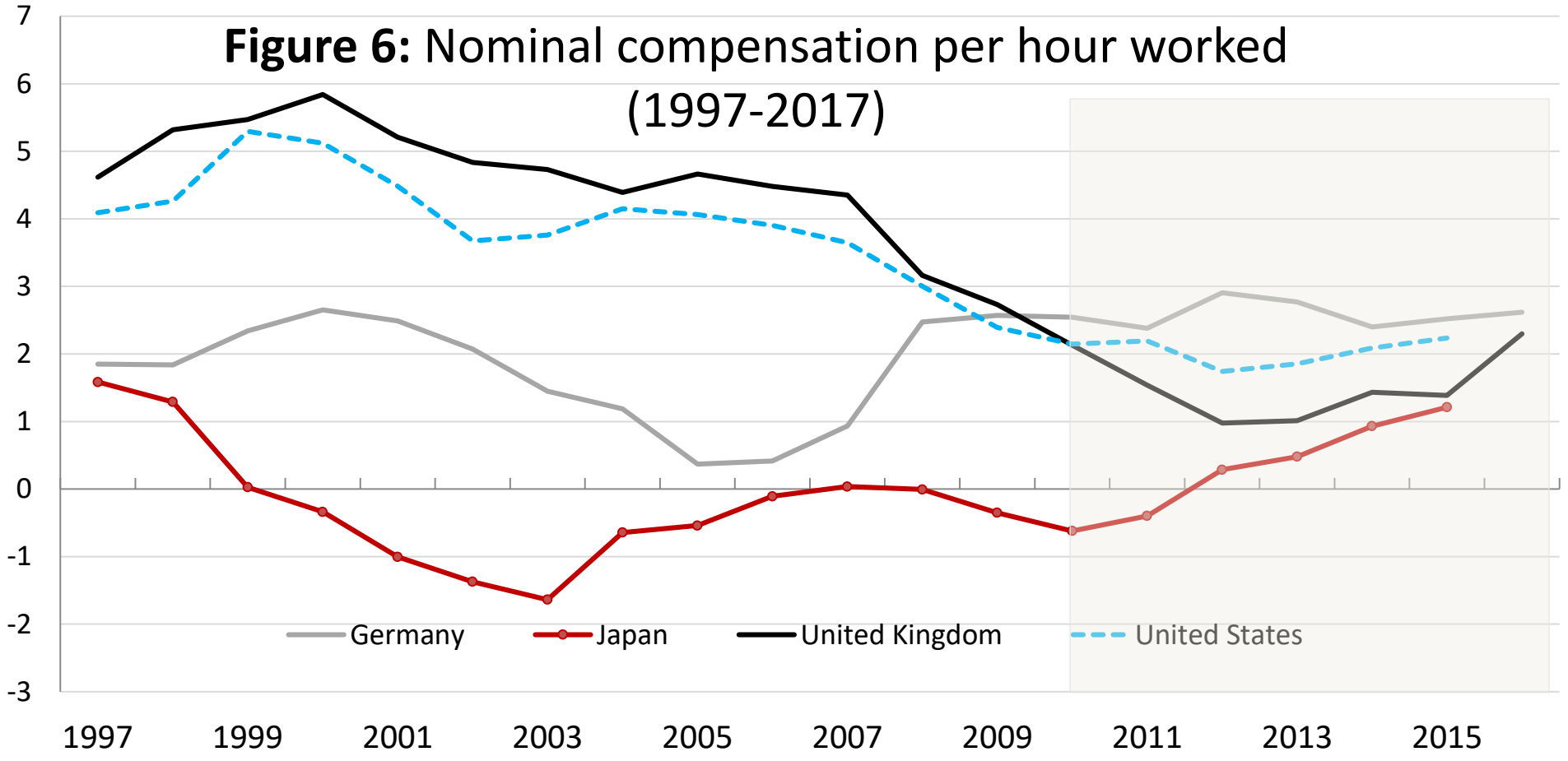


Dataset: LFS, Source: OECD.Stat, 2018

Figure 5 (a): Unemployment rate, per cent, 3 year moving average (1986-2016)



Dataset: LFS Source: OECD.stat, 2018



Total economy, per cent p.a. Dataset: LFS Source: OECD.stat, 2018

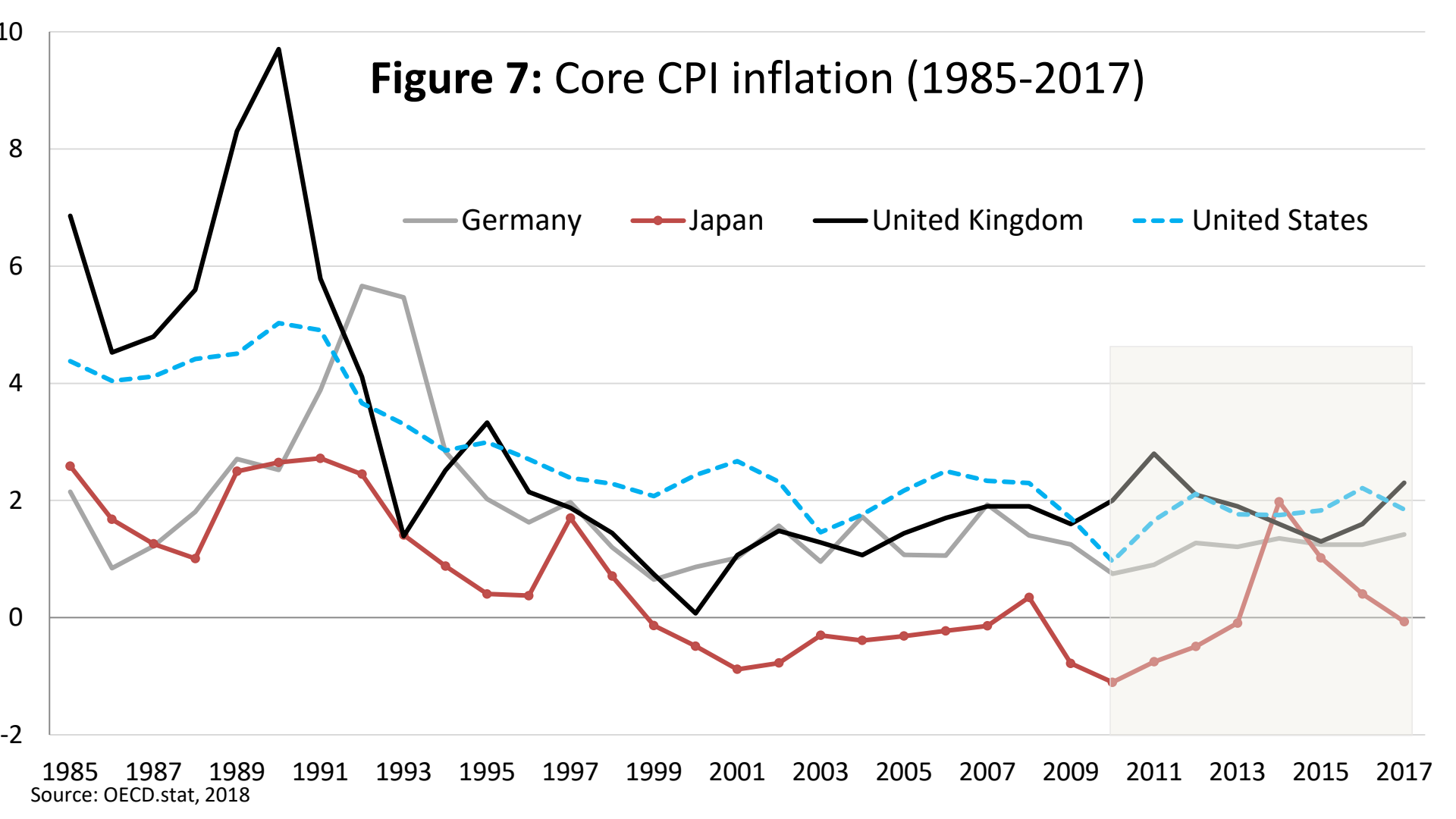


Figure 7: Core CPI inflation (1985-2017)
Germany
Japan
United Kingdom
United States
10
8
6
4
2
0
-2
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
Source: OECD.stat, 2018

We need a model to explain how in an economy with an inflation-targeting central bank there can be – over an extended period …

- Virtual stagnation of productivity, capital services per hour and real wages
- A real interest rate close to zero
- Inflation and nominal wage growth close to zero
- High *or* low unemployment

A two-part two equilibrium model

Two types of stable-inflation equilibria:

- 'normal' regime with a unique equilibrium in which $r > 0$, and fluctuations are managed by monetary policy
- 'demand-led' regime with multiple-equilibria in which fluctuations are managed by fiscal policy
- Problem of regime shift from a 'demand-led' part to 'normal' part – what policy instruments can achieve equilibrium selection?

Model is based on a 3-equation inflation-targeting model

with the following:

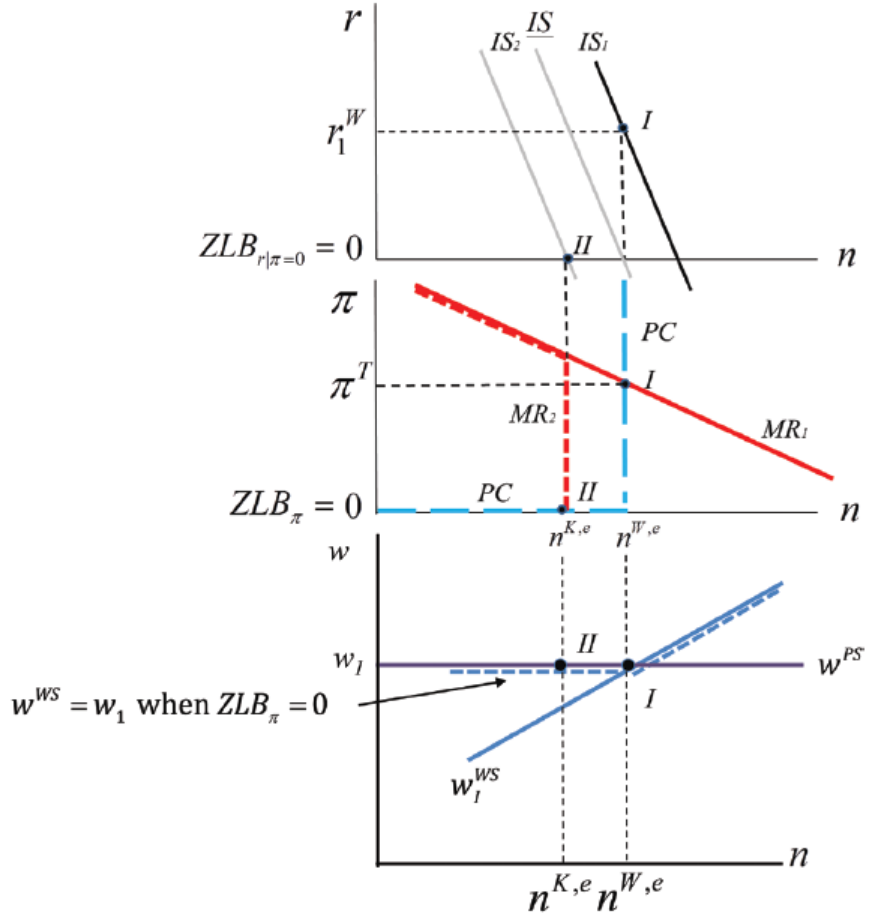
- Now-standard microeconomic feature of incomplete contracts in labour and credit markets → involuntary unemployment in equilibrium, credit rationing and precautionary saving
- Confine model-consistent expectations to Central Bank and forex market (dropped for price- and wage-setters)
- Investment (and embodied productivity growth) characterized by low and high expectations of future market growth
- Nominal wage cuts ruled out on empirical grounds

The intuition for two medium-run regimes (closed economy for simplicity)

- IS
- PC (from WS/PS curves)
- MR (from PC & Central Bank loss function)

- *I*, the intended equilibrium - Wicksellian
- *II*, one in the range of multiple equilibria - Keynesian

Figure 8: Wicksellian and Keynesian equilibria



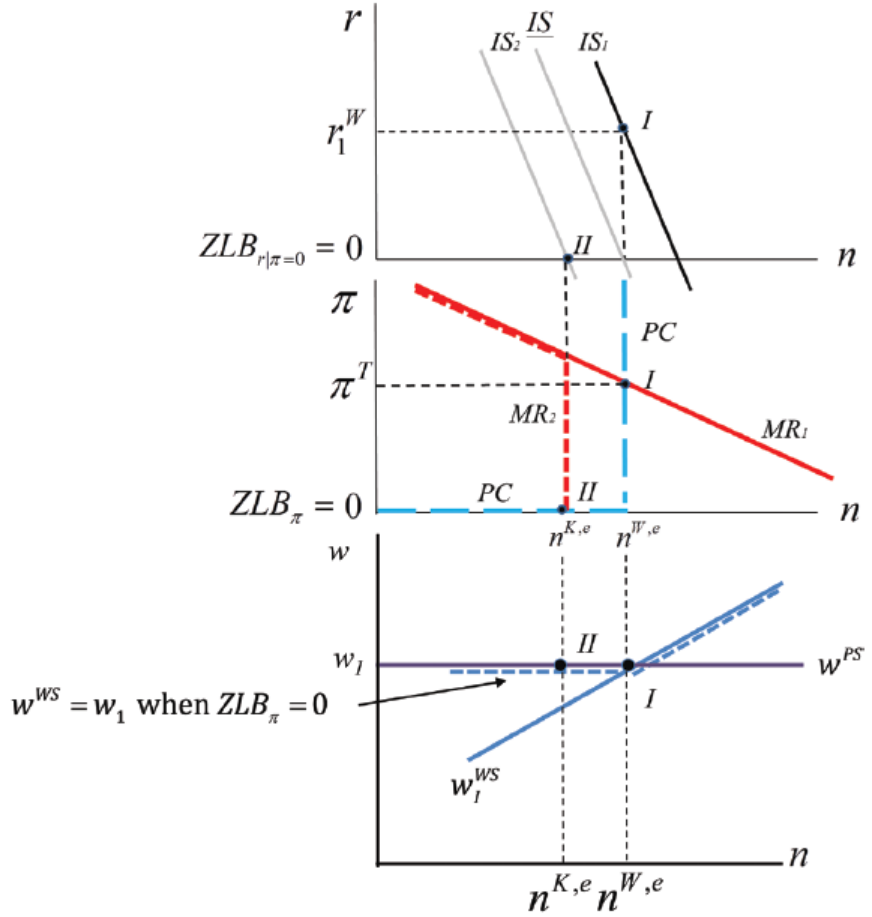
Equilibrium selection

- *I*, Wicksellian – CB chooses inflation target
- Boundary between regimes

Role of *IS* - it sets maximum employment in Keynesian regime

- *II*, Keynesian – AD selects from range

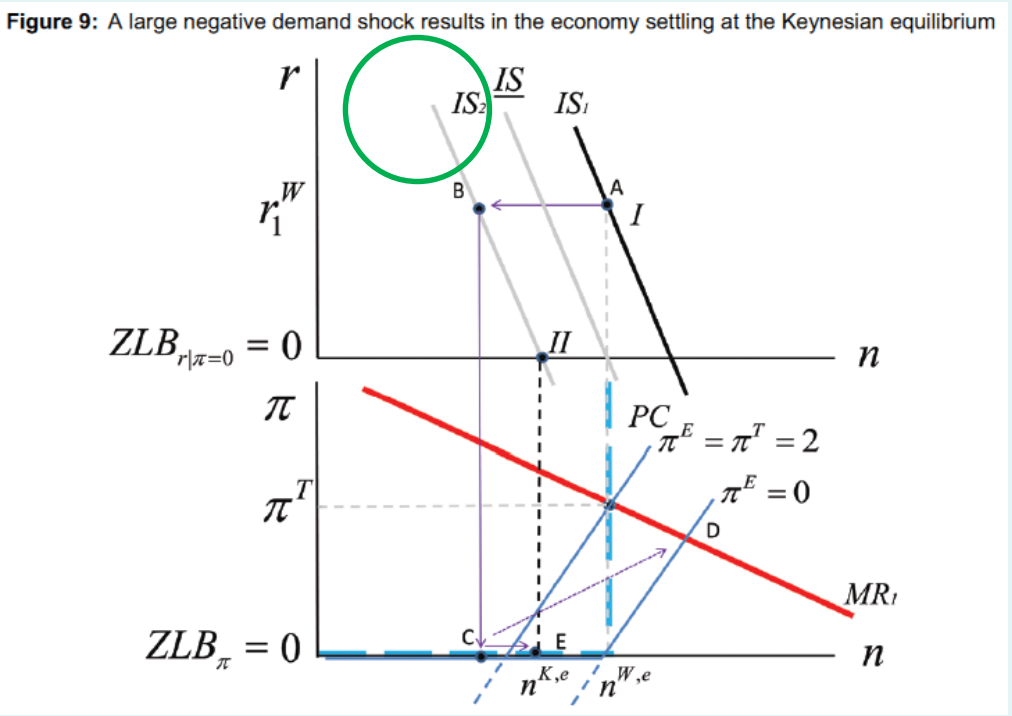
Figure 8: Wicksellian and Keynesian equilibria



Getting stuck in the Keynesian regime: a large negative aggregate demand shock; MP is ineffective

- Shock creates negative output gap
- ZLB in nominal and real interest rates neuters MP (D is unattainable)
- Floor on inflation at zero (so no deflation spiral)
- Stable equilibrium at *E*

Figure 9: A large negative demand shock results in the economy settling at the Keynesian equilibrium



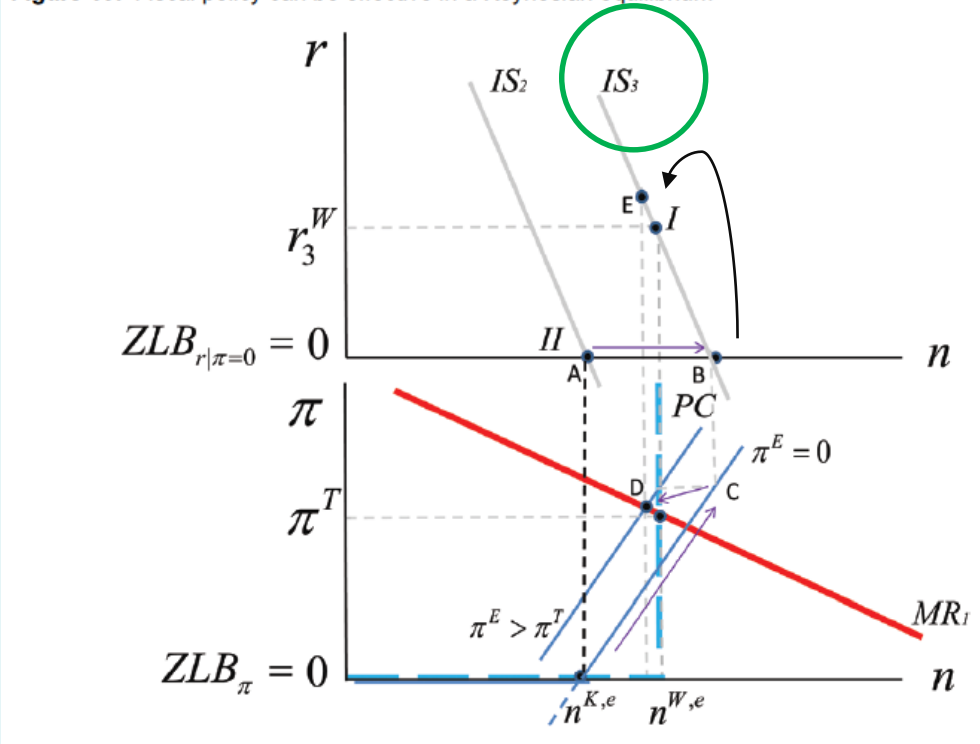
Escaping the stagnation trap

- Positive private or public (fiscal policy) AD shock – fiscal multiplier is positive in the Keynesian regime

- Must create positive output gap with inflation above target A → B in order to restore role for 'normal' monetary policy
- But if inflation remains below target

then, because of ZLB, MP cannot create the required positive output gap, and trap remains in place

Figure 10: Fiscal policy can be effective in a Keynesian equilibrium

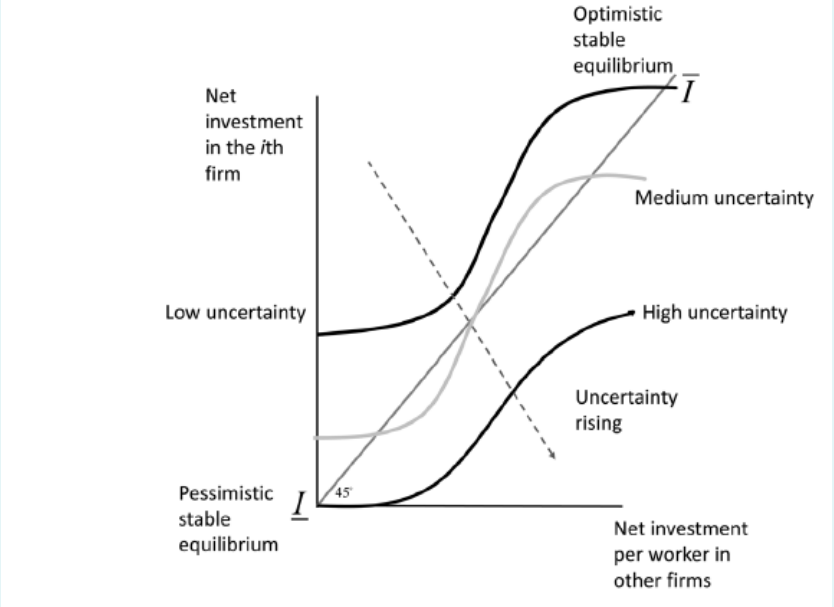


If the UK is stuck in a medium-run stagnation trap with the real interest rate, inflation, and productivity growth close to zero,

- What lies behind the persistent weakness of productivity growth?
- How can an economy remain in the trap at historically *low* unemployment; as well as at high unemployment?

Persistent weakness of investment – productivity growth requires investment

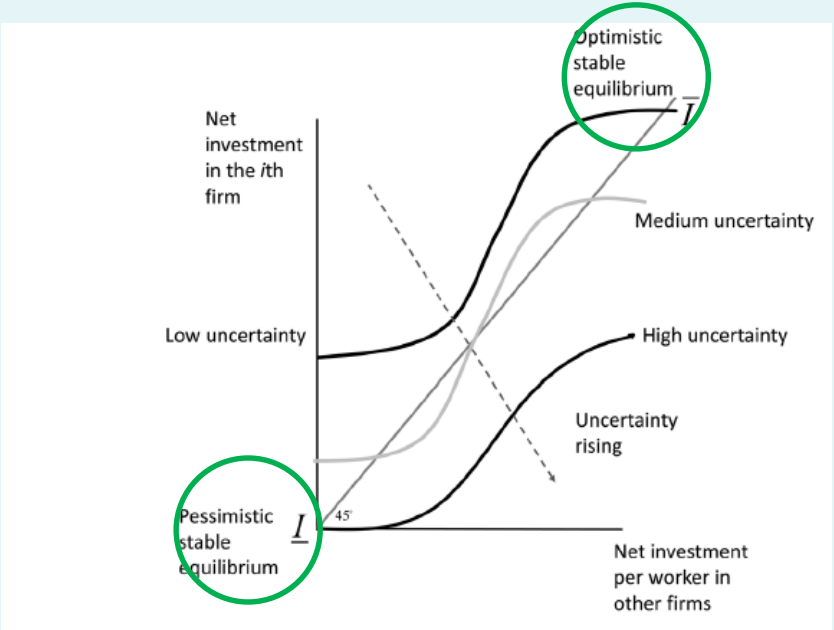
- Investment as the engine of the capitalist economy
  - We model investment as a dynamic game where each firm's investment depends on decisions of others
  - Expected return depends on expectations of growth of markets, which depend on actions of other firms, and hence on their beliefs



Investment in a game of strategic complementarities among firms

- Vives (2005) model → 2 stable (low, high) and one unstable equilibrium
- Pre-crisis: at the high equilibrium where beliefs coordinate on an optimistic state and action – investment spending – is taken

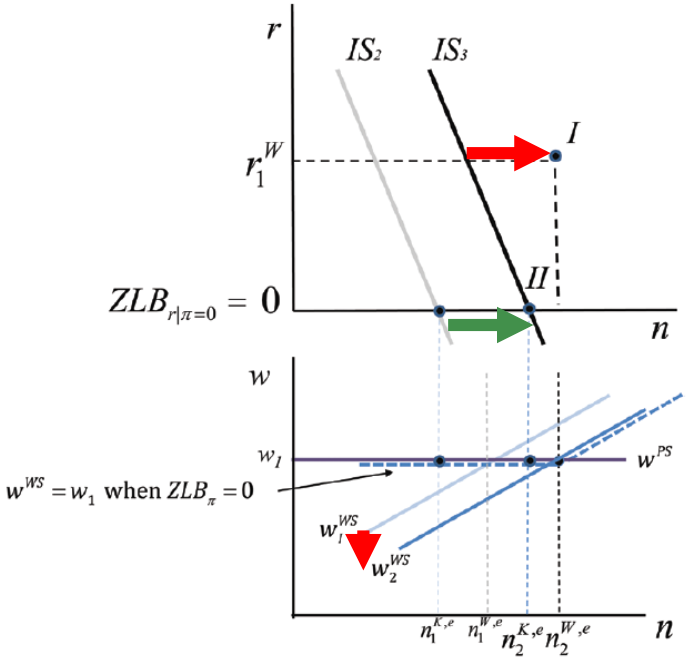
- Crisis: as uncertainty rises and beliefs change the S-shaped curve shifts beyond the tipping point
- Post-crisis: at the low equilibrium
- Weak expectations of market growth reinforced by non-Euler households



Stagnation + very low unemployment

- Successful labour market reforms
- Anything that weakens the reservation position of workers
- The intended equilibrium shifts

Figure 12: A Keynesian equilibrium at low unemployment



- Under stagnation trap conditions, the economy can remain in a low-level (type *II*) equilibrium even with a revival of demand

Questions arising …

- How can an economy escape from a post-crisis stagnation trap?

- To spring the trap entails creating positive expectations about future market growth to raise investment
- The challenge is to tie policies to generating a change in the narrative about expected future incomes
- Note: even if productivity growth can be revived, there is nothing that says this will be automatically translated into growing future incomes

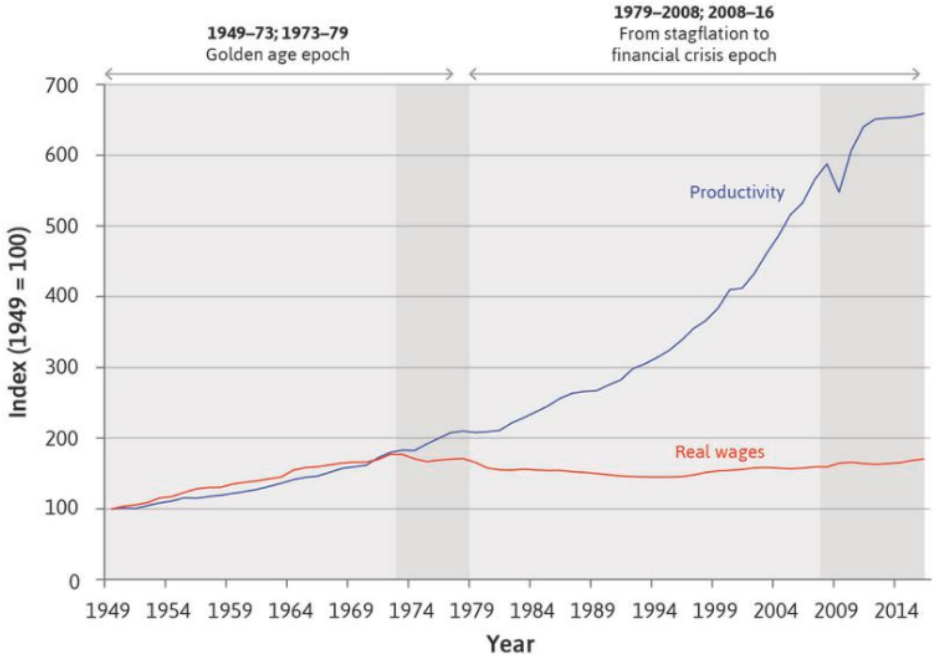


Figure 17.17 The golden age and its aftermath: Real wages and output per production worker in manufacturing in the US (1949–2016).

http://www.core-econ.org/the-economy/book/text/17.html

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