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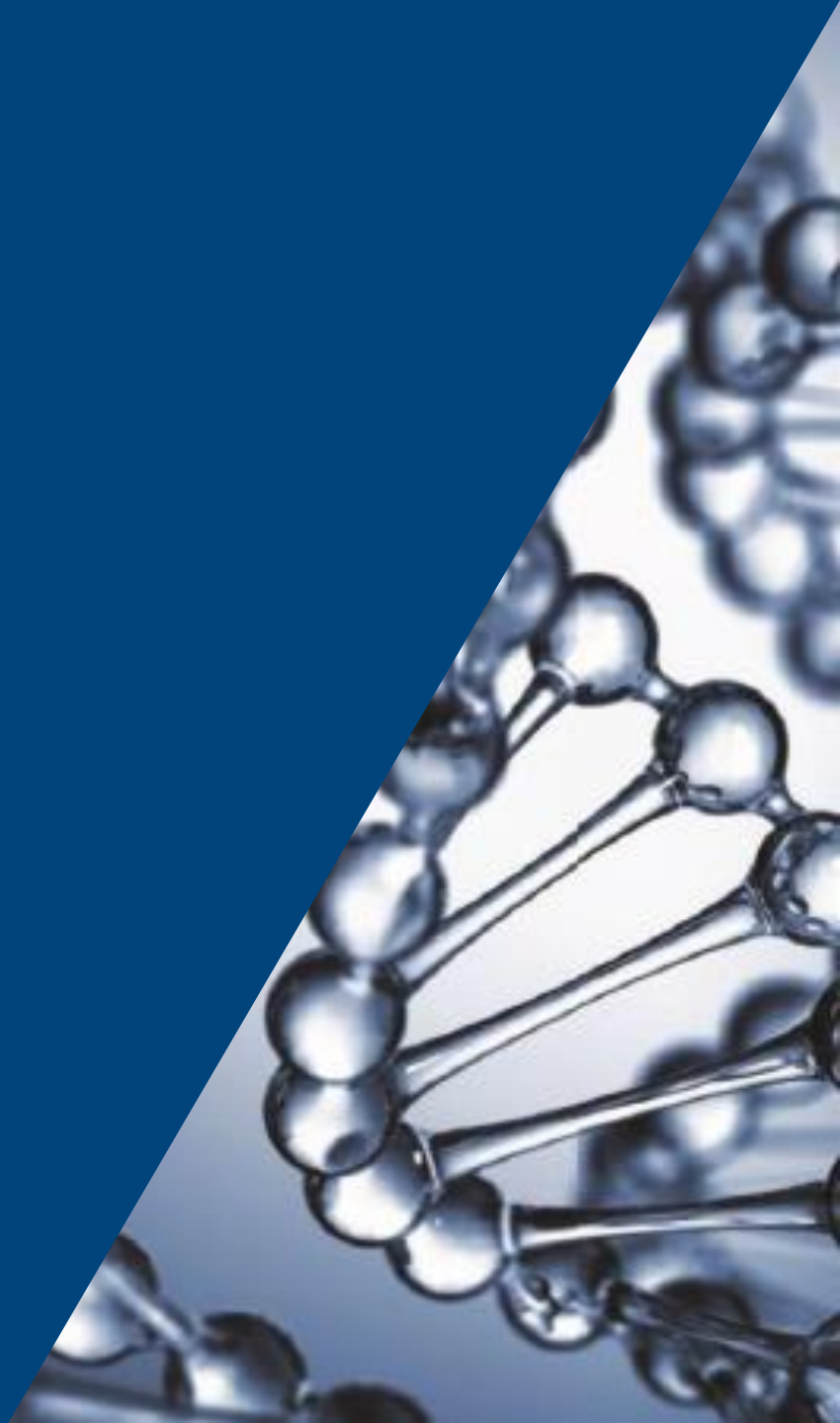
Applied Economic & Social Research

Growth, Natural Rates and Policies

Guay Lim

19 July 2017



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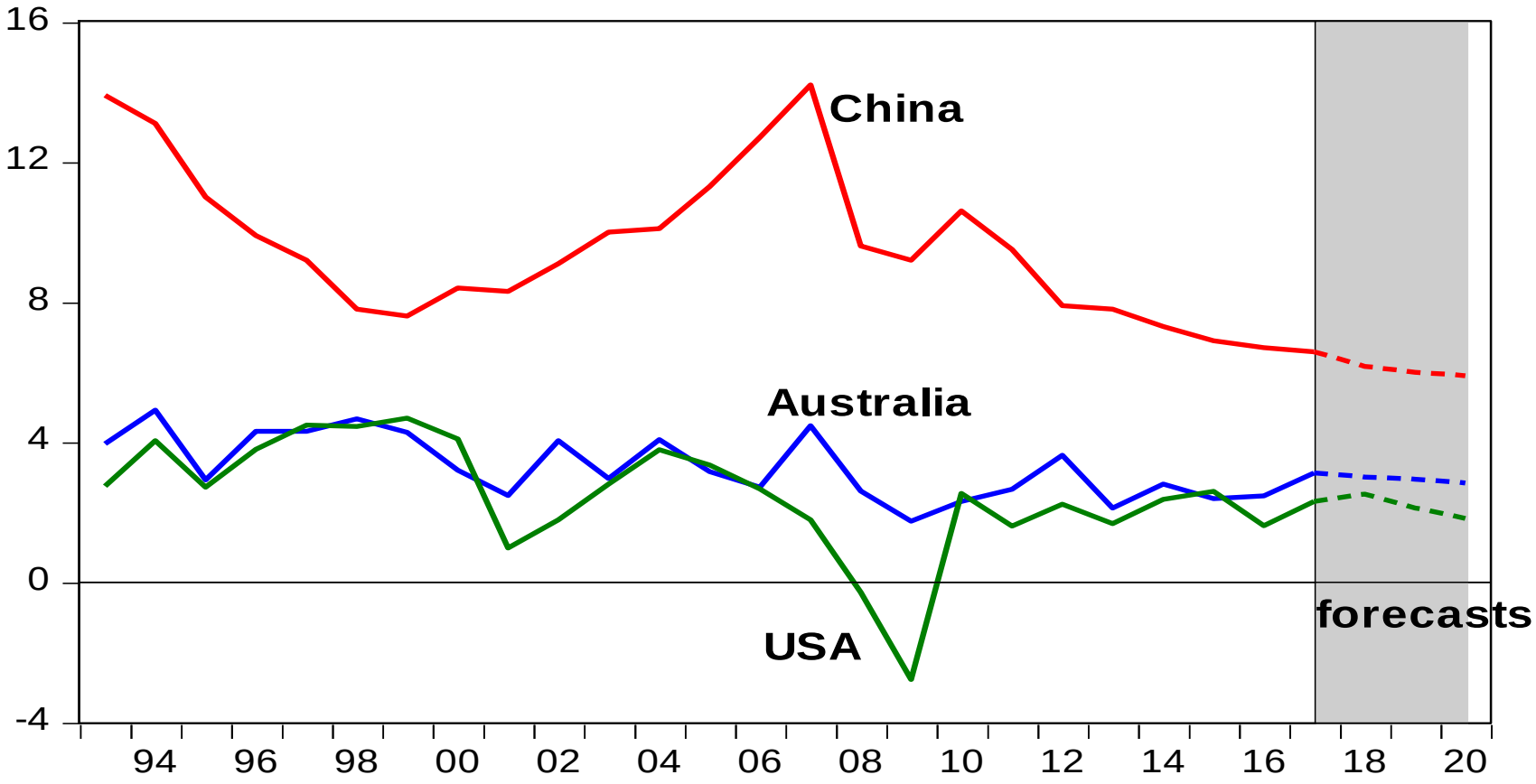
Outline

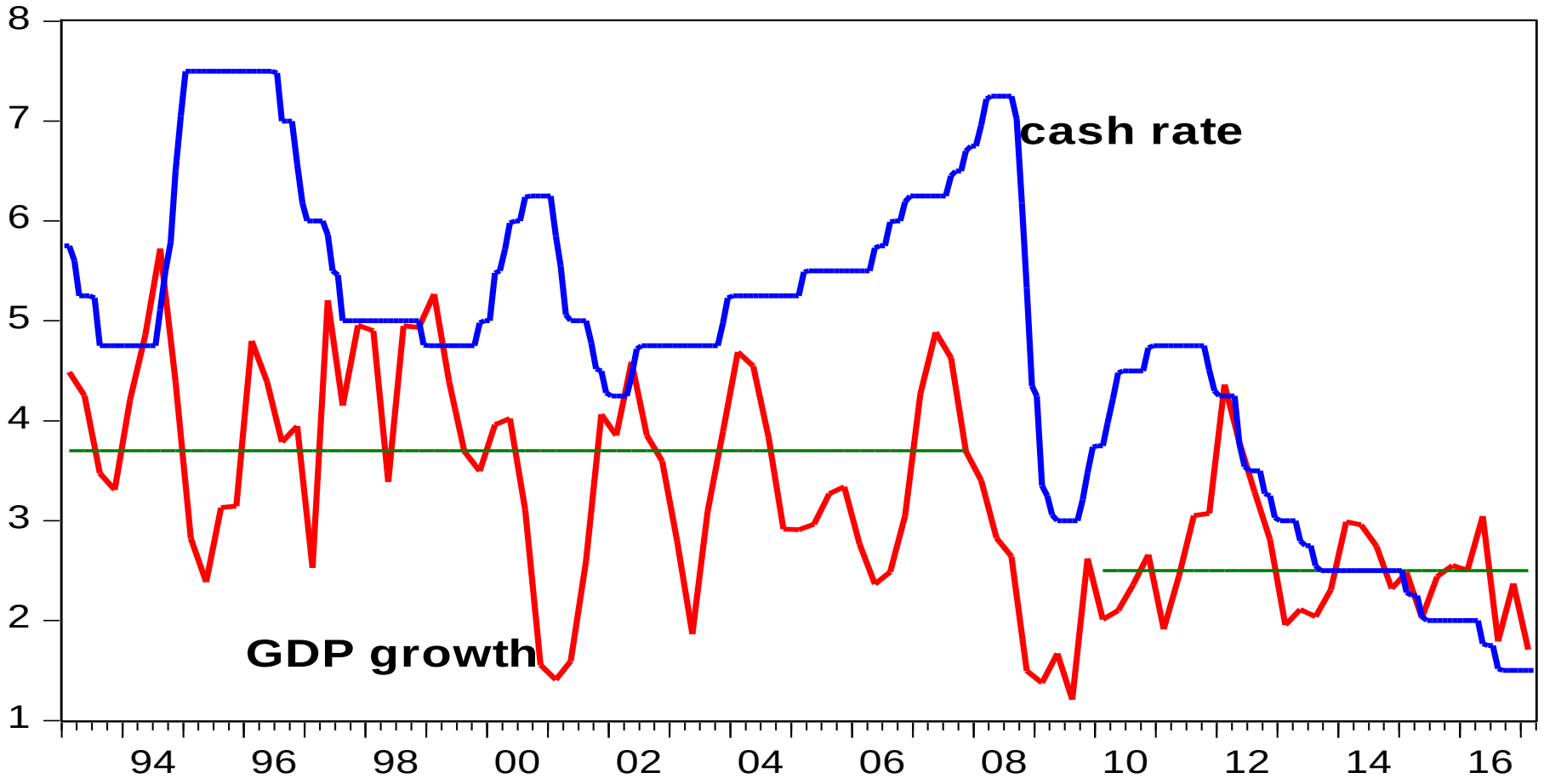
- Low growth, low interest rates and liquidity trap (?)
- Secular stagnation, savings glut and the Natural Rate of Interest
- Unconventional Monetary and Fiscal Policies

Growth in real GDP (per cent)



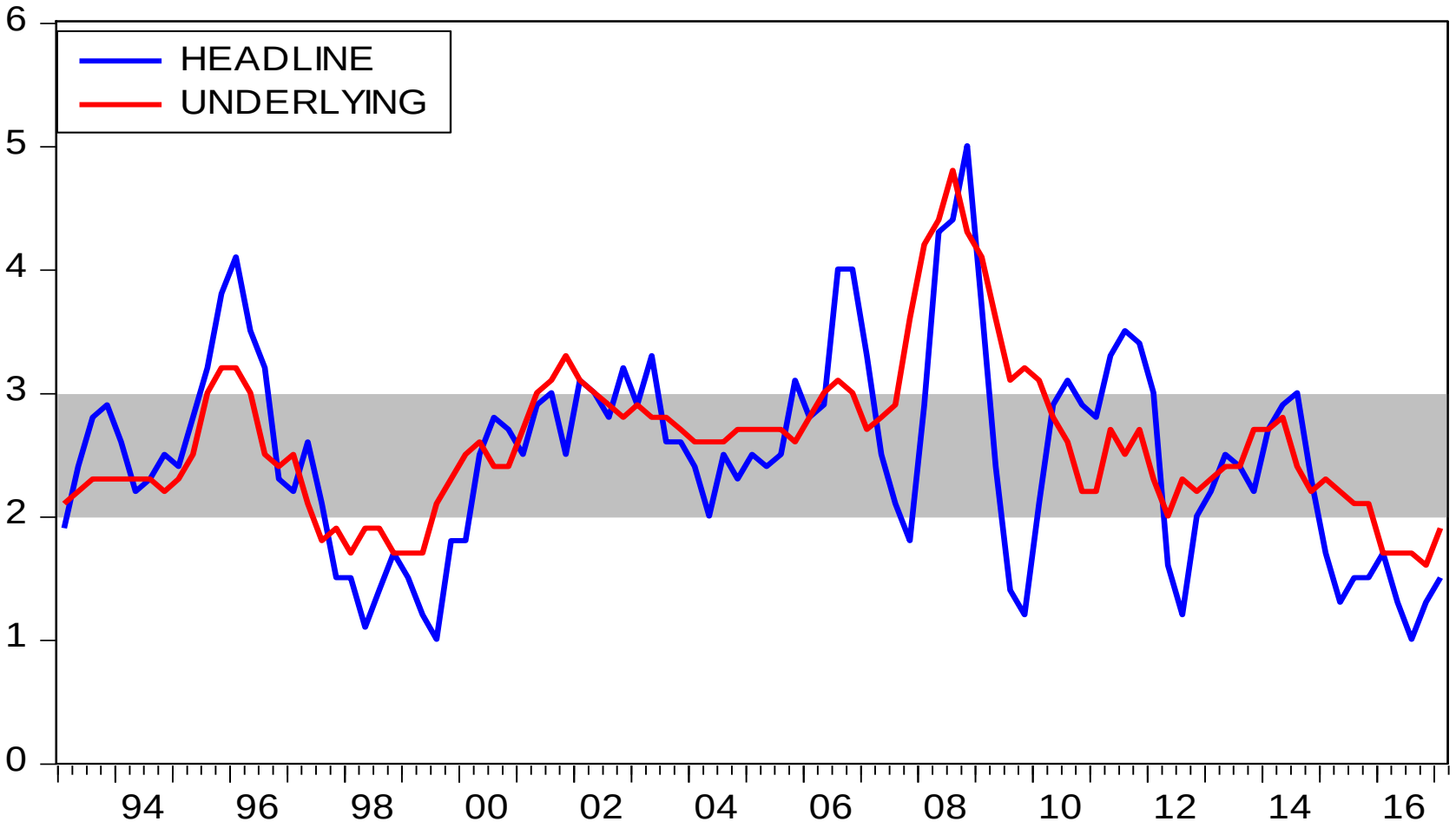
Source: IMF: World Economic Outlook

Monetary policy and Growth in Australia



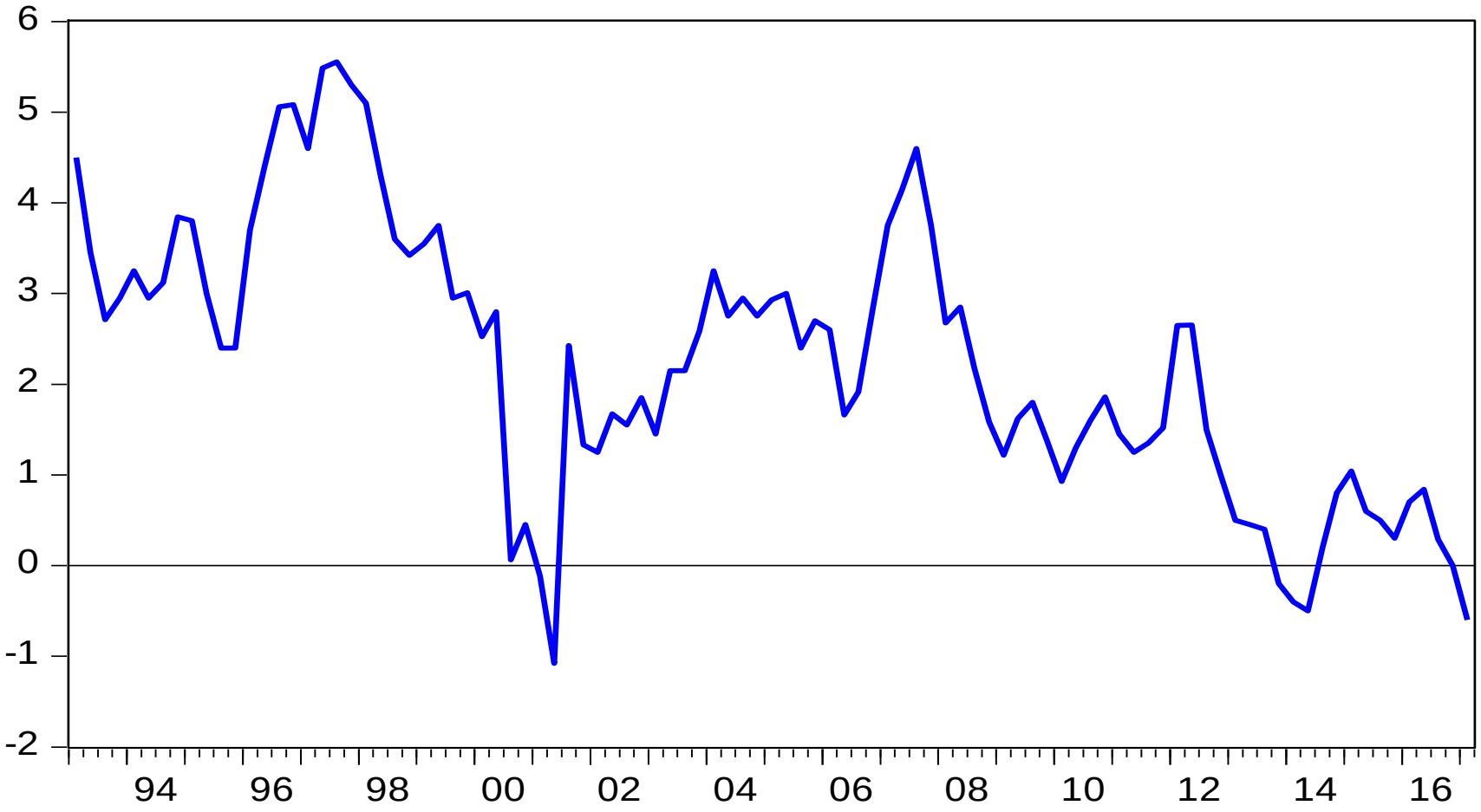
Source: ABS and RBA

Inflation in Australia (per cent)



Source: RBA statistical table G1

Official (real) cash rate (per cent)



Source: RBA Statistical Table F13

Holston, Laubach and Williams (2016)

- Reduced-from open economy version of NK Model:
- State-space estimation of the natural rate of interest

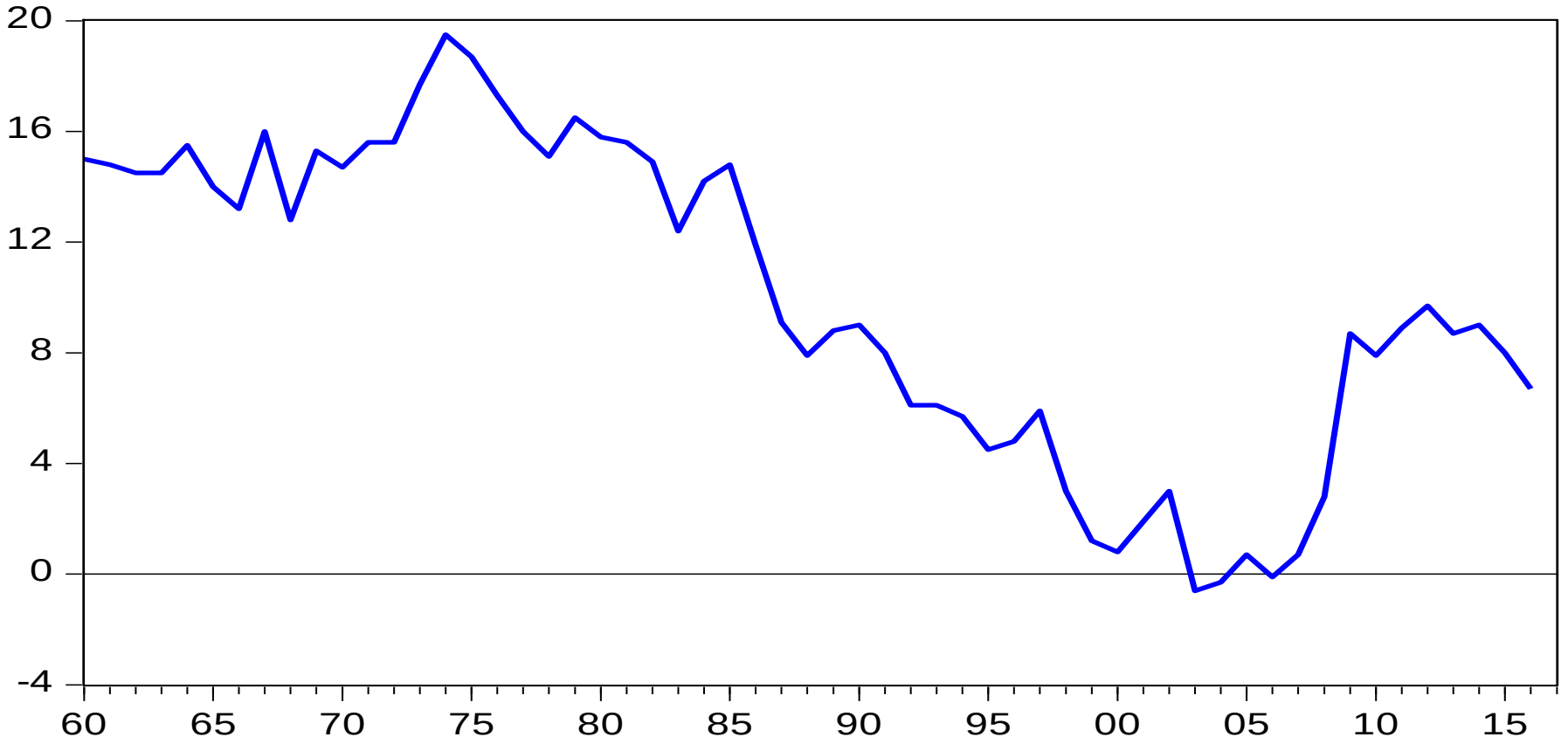
$$\tilde{y}_t = \alpha_{y1}\tilde{y}_{t-1} + \alpha_{y2}\tilde{y}_{t-2} + \frac{\alpha_r}{2}\sum_{j=1}^{2}(r_{t-j} - r^*_{t-j}) + \varepsilon_{\tilde{y}t}$$

$$\pi_t = b_\pi \pi_{t-1} + (1-b_\pi)\pi_{t-2,4} + b_y \tilde{y}_{t-1} + \varepsilon_{\pi t}$$

$$r^*_t = g_t + z_t; \quad g_t = g_{t-1} + \varepsilon_{gt}; \quad z_t = z_{t-1} + \varepsilon_{zt}$$

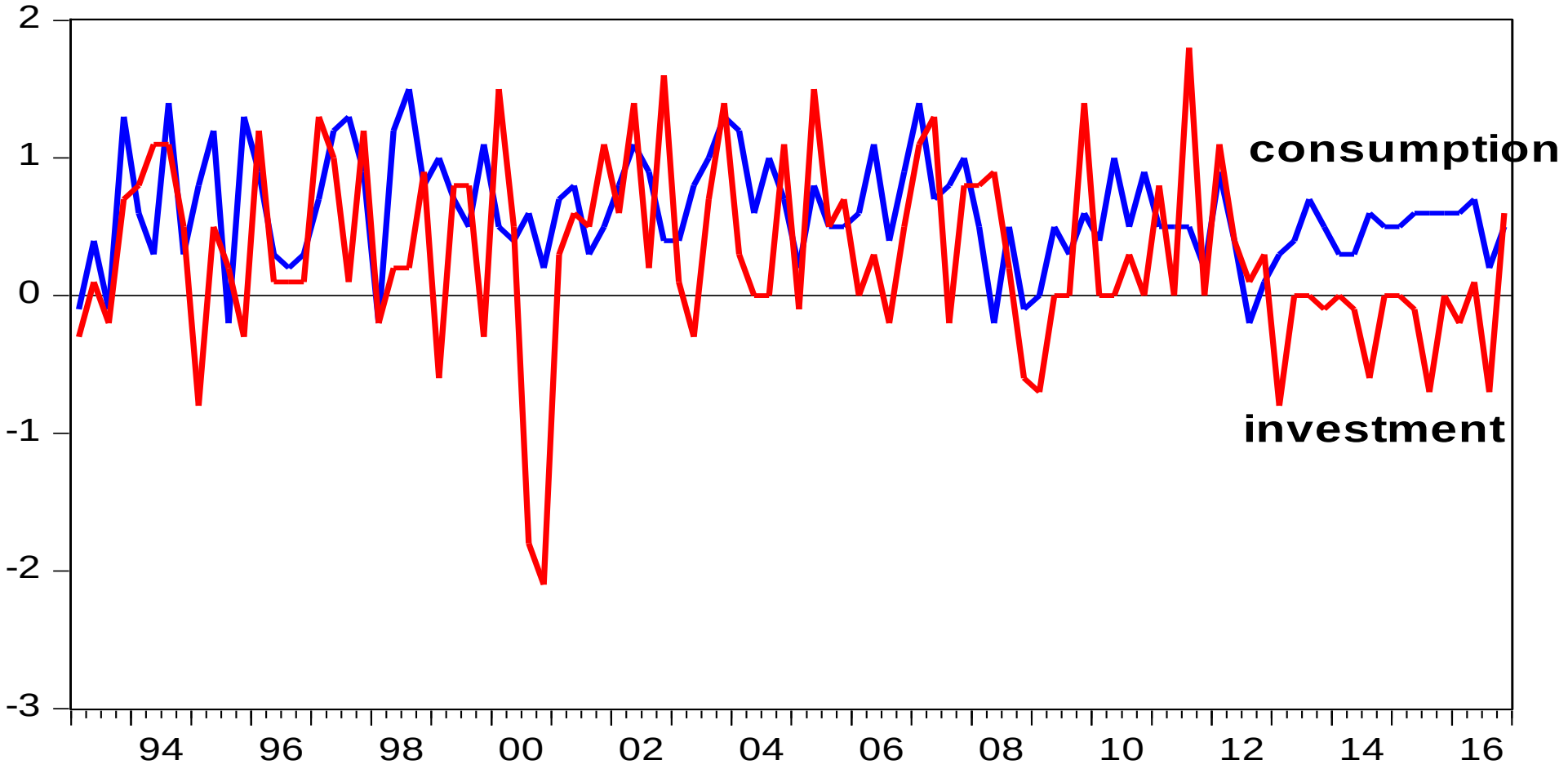
$$\tilde{y}_t = 100(y_t - y^*_t); \quad y^*_t = y^*_{t-1} + g_{t-1} + \varepsilon_{y^*t}$$

Household Savings Ratio (per cent)



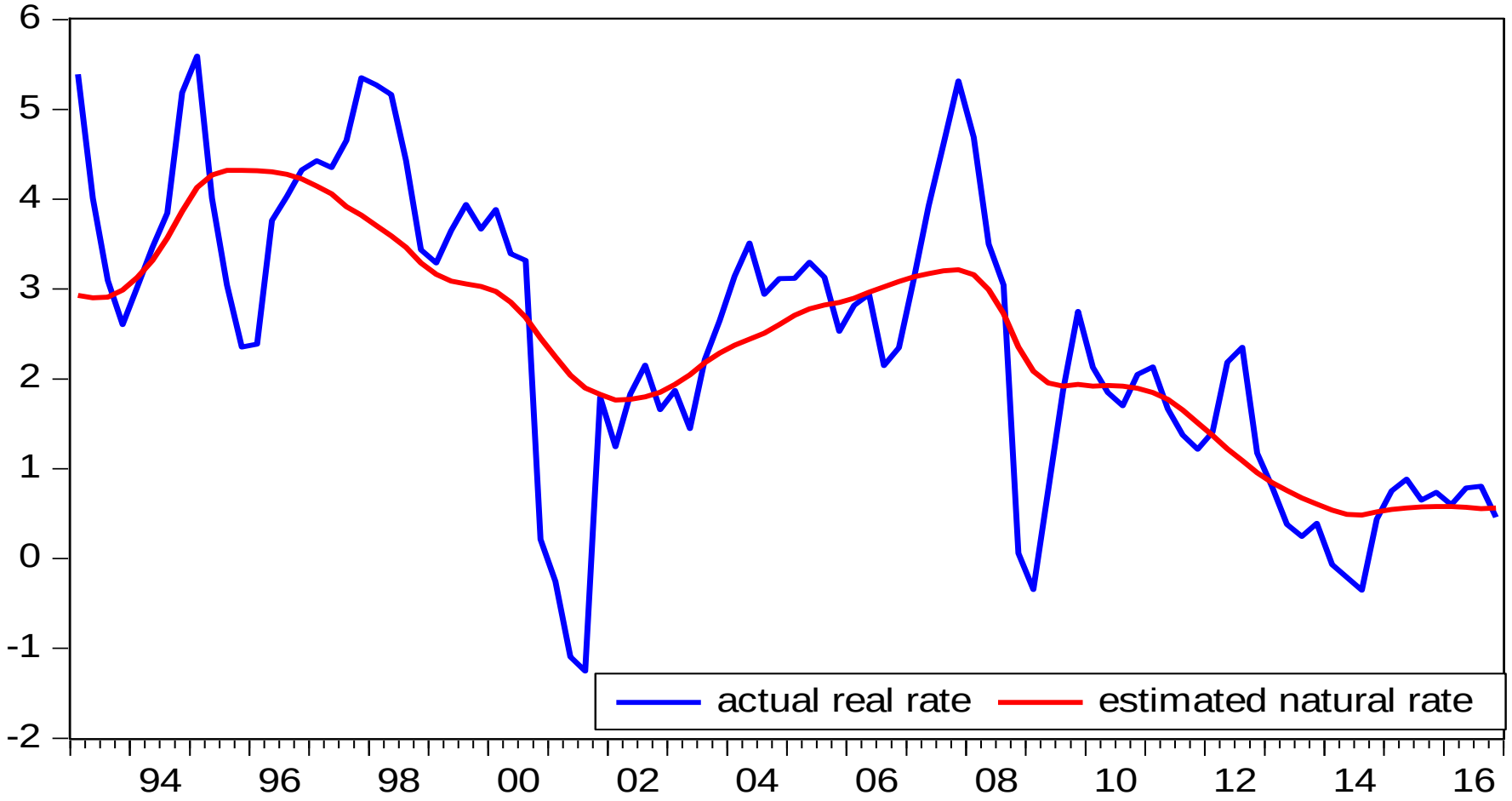
Source: ABS

Contributions to growth (per cent)



Source: ABS

Estimated Natural Rate of Interest



Chairman Ben S. Bernanke
Stamp Lecture, LSE; January 13, 2009

- **Credit Easing versus Quantitative Easing**

- … QE regime, the focus of policy is the quantity of bank reserves

- … credit easing approach focuses on the mix of loans and securities

- … focus on reducing credit spreads and improving the functioning of private credit markets

Unconventional fiscal policy

- Feldstein, M. (2003), "A Role for Discretionary Fiscal Policy in a Low Interest Rate Environment"; in 2002 Federal Reserve Bank of Kansas City Annual Conference volume, *Rethinking Stabilisation Policy*.

- Farhi, E., Correira, I., Nicolini, J.P., and Teles, P. (2013), "Unconventional Fiscal Policy at the Zero Bound", *American Economic Review* 103(4), 1172-1211.

Unconventional Monetary and Fiscal Policies in Interconnected Economies: Do Policy Rules Matter? Lim and McNelis

- Aim: to understand effectiveness of unconventional policies for economies that are highly integrated in trade and finance
- Novel Feature: optimal tax rate rules as alternative to QE
- Model: Dedola, Karadi, Lombardo (2013). Global implications of national unconventional policies. JME 60 (1), 66-85.

Shocks: productivity and financial incentive

Shock scenarios:

- both countries are subjected to productivity (A) shocks
- both countries are subjected to financial incentive (λ) shocks;
- country 1 - productivity shocks; country 2 - financial shocks
- country 1 - financial shocks; country 2 - productivity shocks

$$W_t = N_t + D_t; \qquad W_t = [\eta_t/(\lambda_t + \nu)]N_t; \qquad V_t \geq \lambda_t W_t;$$

$$V_t = \max \beta \mathrm{E}_t\{\Lambda_{t,t+1}[(1-\theta)N_{t+1} + \theta V_{t+1}]\}; \qquad V_t = \nu_t W_t + \eta_t N_t;$$

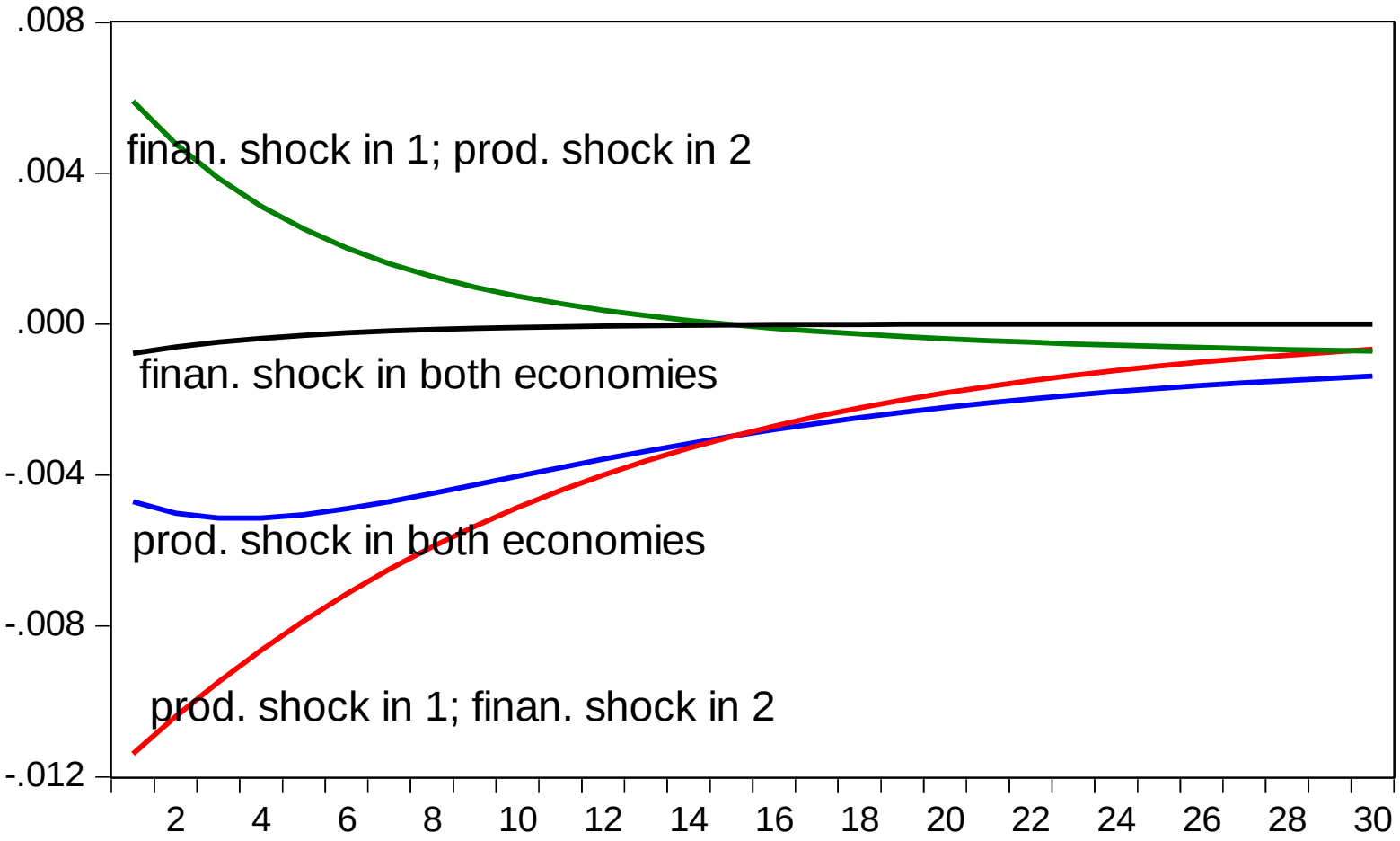
$$\nu_t, \eta_t \rightarrow f(...spreads...); \qquad N_t = \theta\{f(...spreads...)N_{t-1}\} + \omega W_{t-1};$$

Policy Scenarios and Results

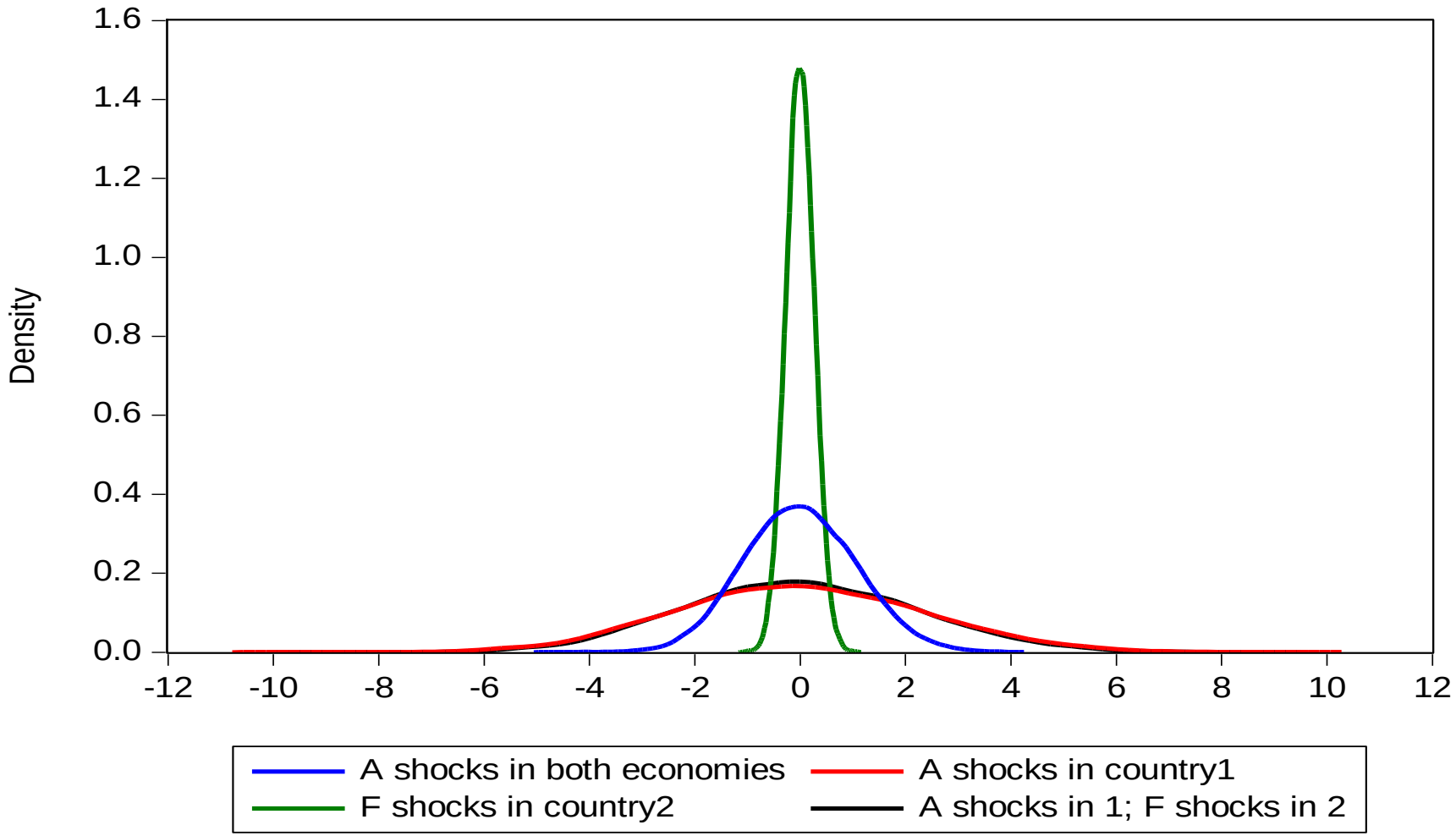
- Policies
  - base case: no policy response in either country
  - Country 1 adopts QE;
  - Country 2: (1) do nothing (2) adopts optimal tax-rate rule

- Results
  - impulse responses
  - simulation of recurring shocks - kernel distributions
  - zoom in on outcomes during crisis - dark corner analysis

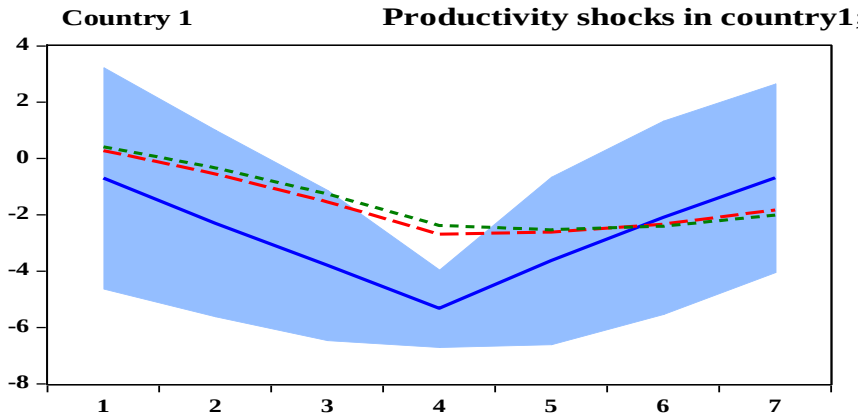
Impulse Response Functions

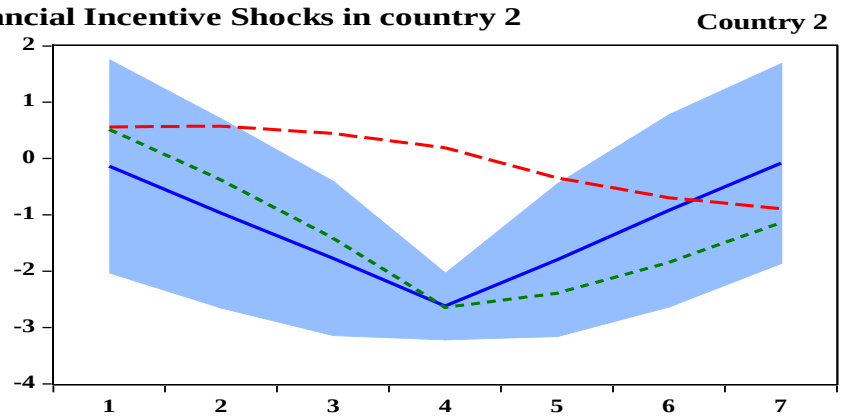


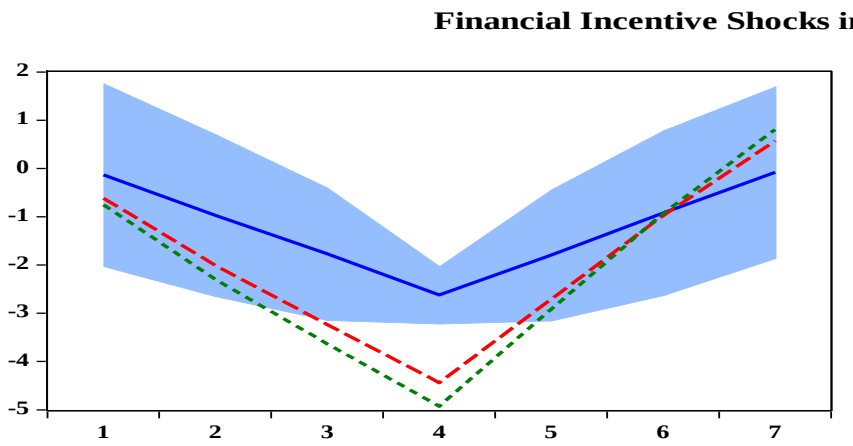
Kernel Distribution of Simulated Results

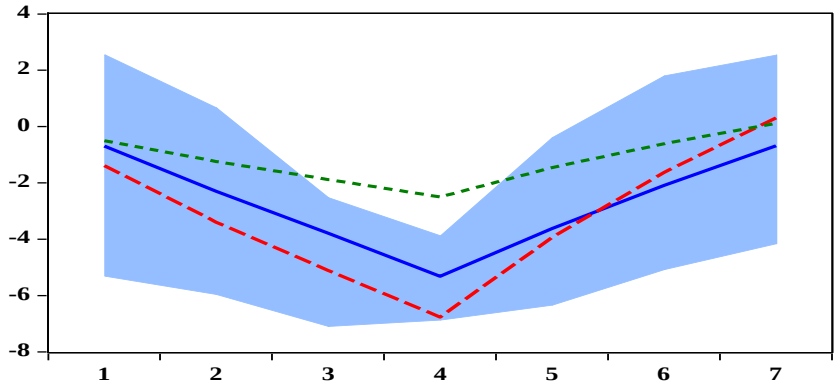


Dark Corner Analysis









Concluding remarks

- Low growth and low interest rates
- Secular stagnation, savings glut, natural rate of interest
- Unconventional monetary and fiscal policies in interconnected economies

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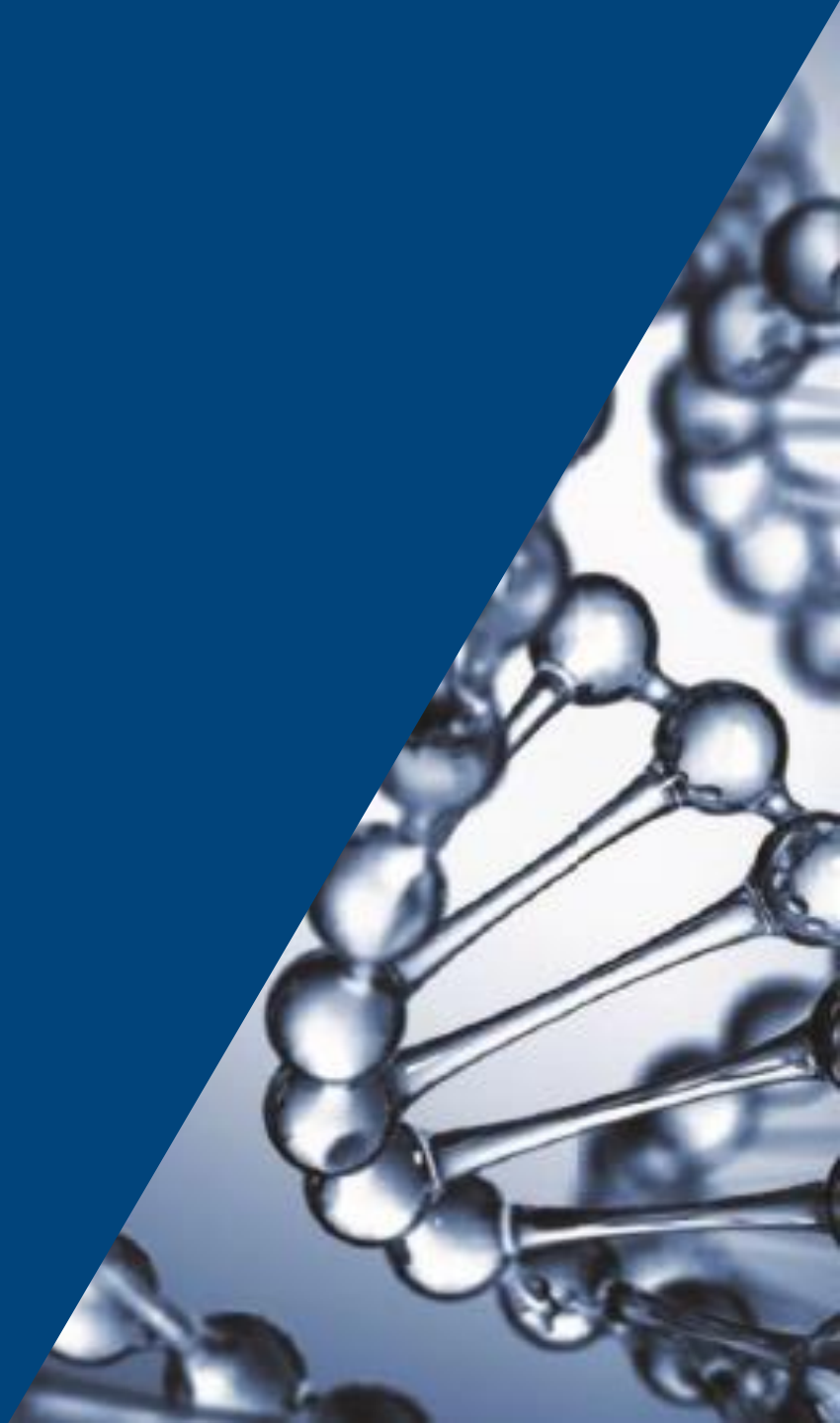

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