Growing (with Capital Controls) Like China

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Allocation Puzzle

- Capital flows out of countries where it commands the highest return
  - Allocation puzzle (Gourinchas and Jeanne ReStud 2013)
- China is a centerpiece of the allocation puzzle
  - Its foreign reserves amount today to ca. 3.5 trillion US Dollars
- Our previous work reconciles the allocation puzzle in China with
  - High productivity growth
  - Sustained returns to investments
  - Reallocation in manufacturing
  - Sluggish wage growth

Growing Like China (2011) - GLC

- Essence of the theory
  - *asymmetric* credit market imperfections
  - TFP growth in manufacturing is driven by reallocation
  - credit-constrained firms outgrow financially-integrated ones
  - the demand of external financing declines relative to savings
  - saving glut $\longrightarrow$ foreign surplus

FIGURE 5 (panel a): "Growing Like China": early transition (1998)

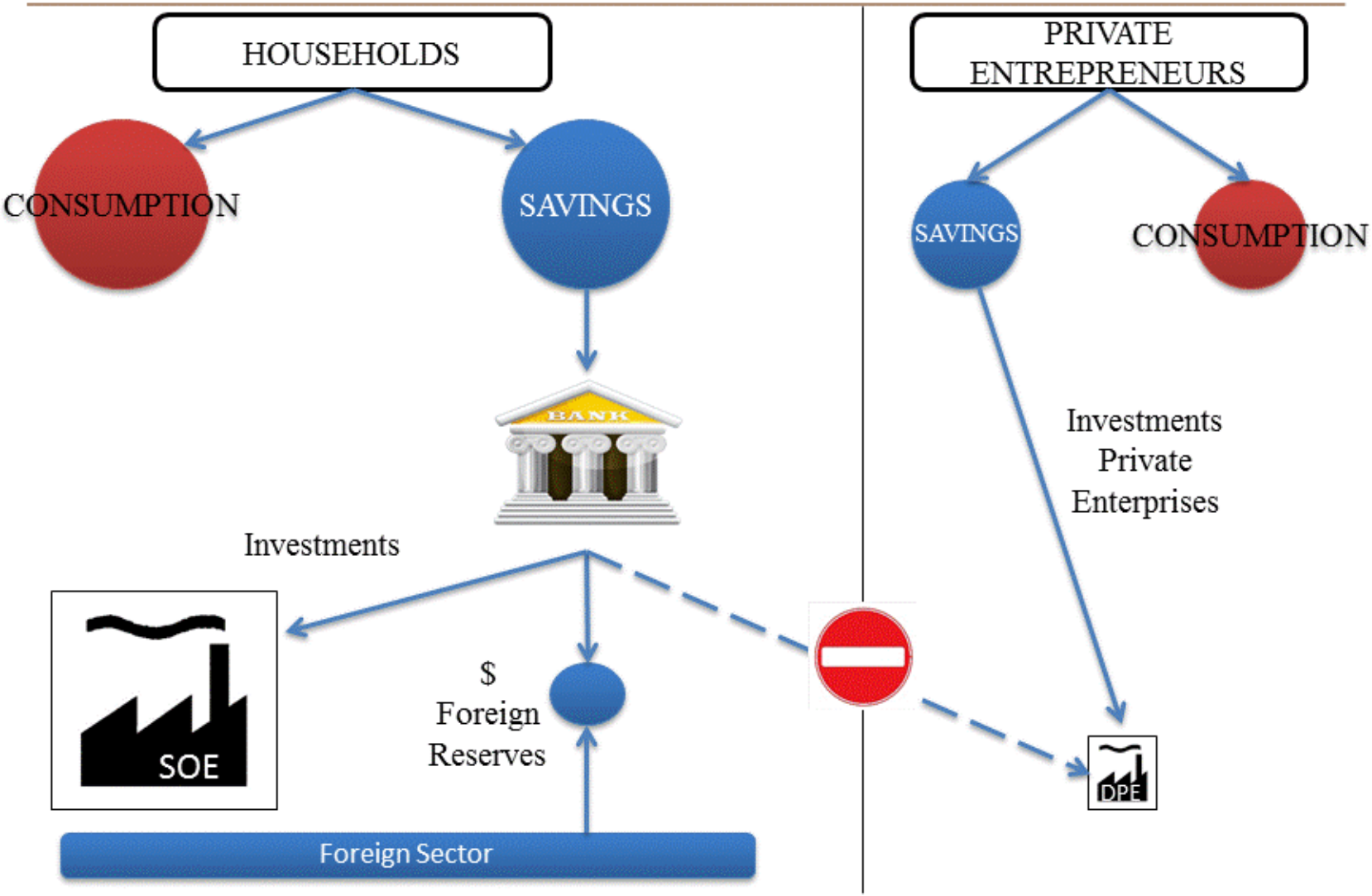


FIGURE 5 (panel b): "Growing Like China": mid transition (e.g., 2004)

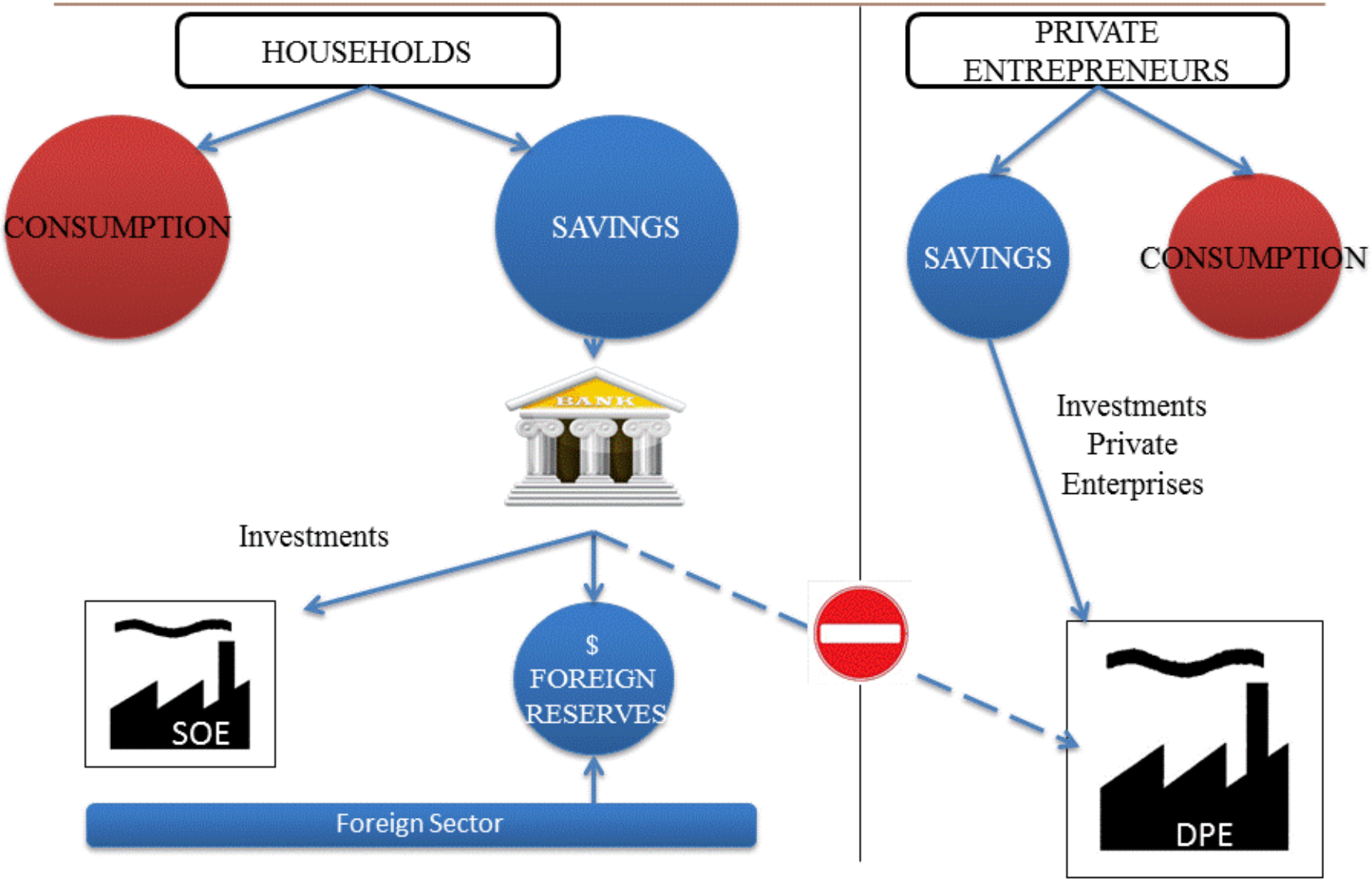
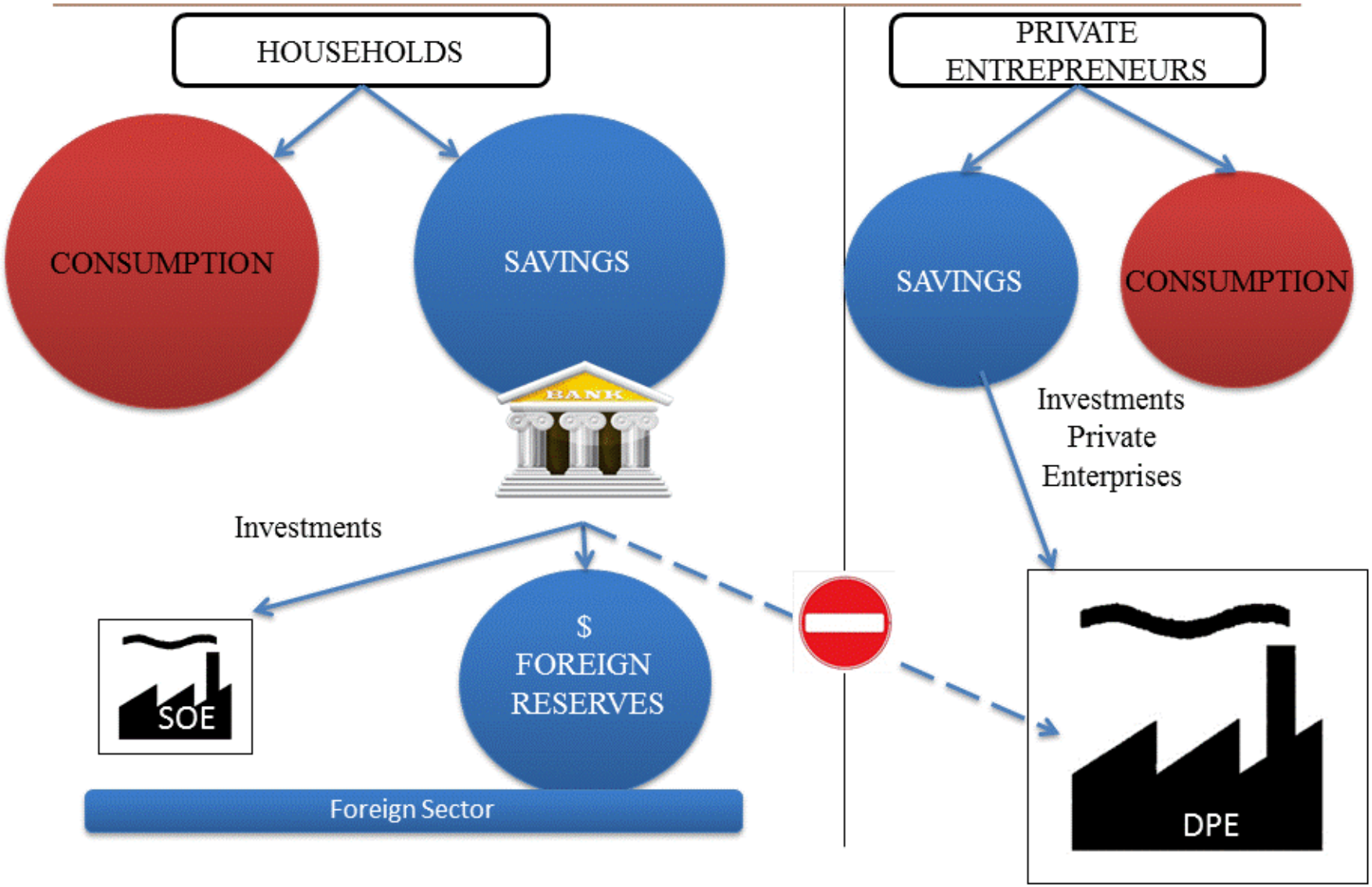


FIGURE 5 (panel c): "Growing Like China": late transition (e.g., 2010)



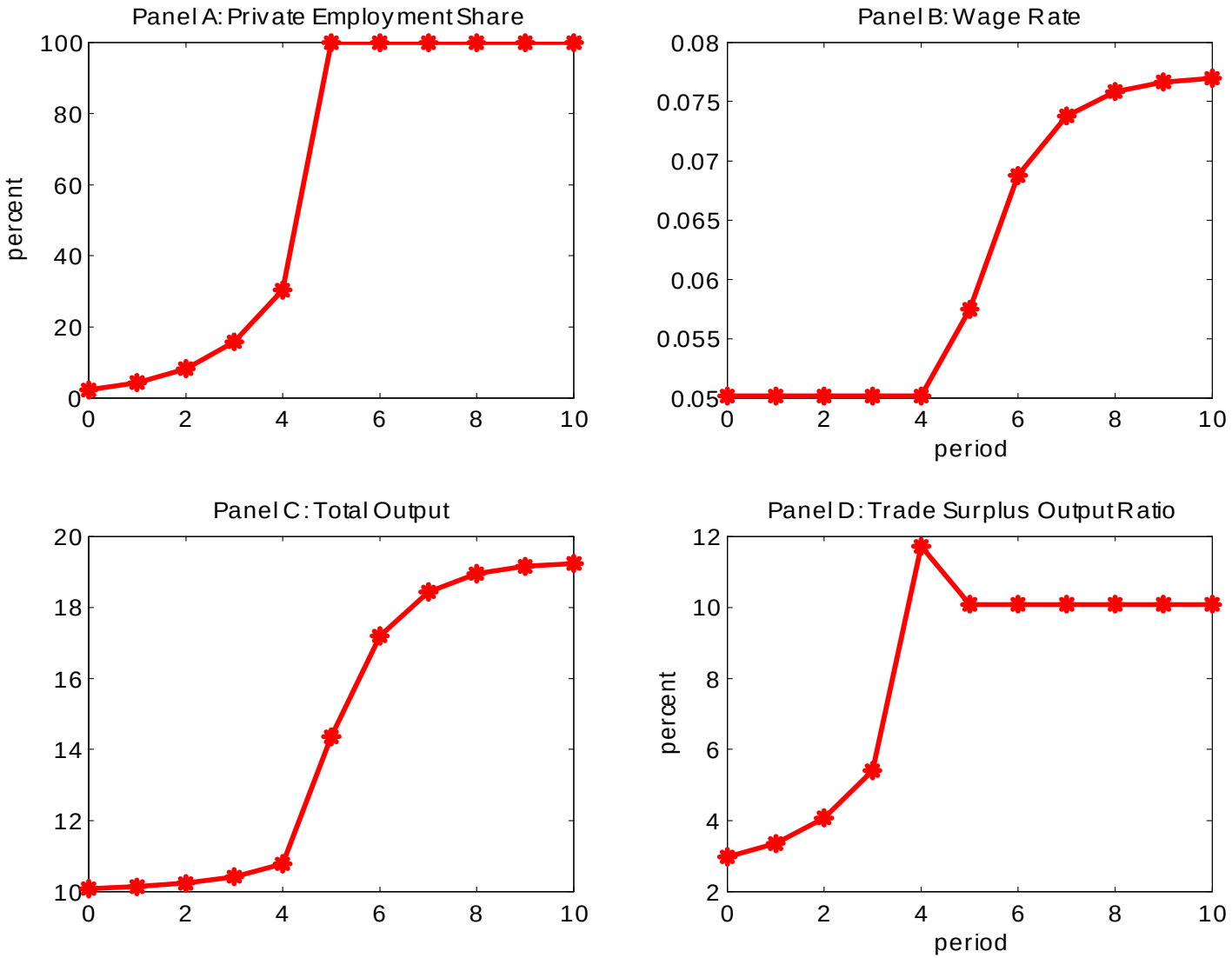


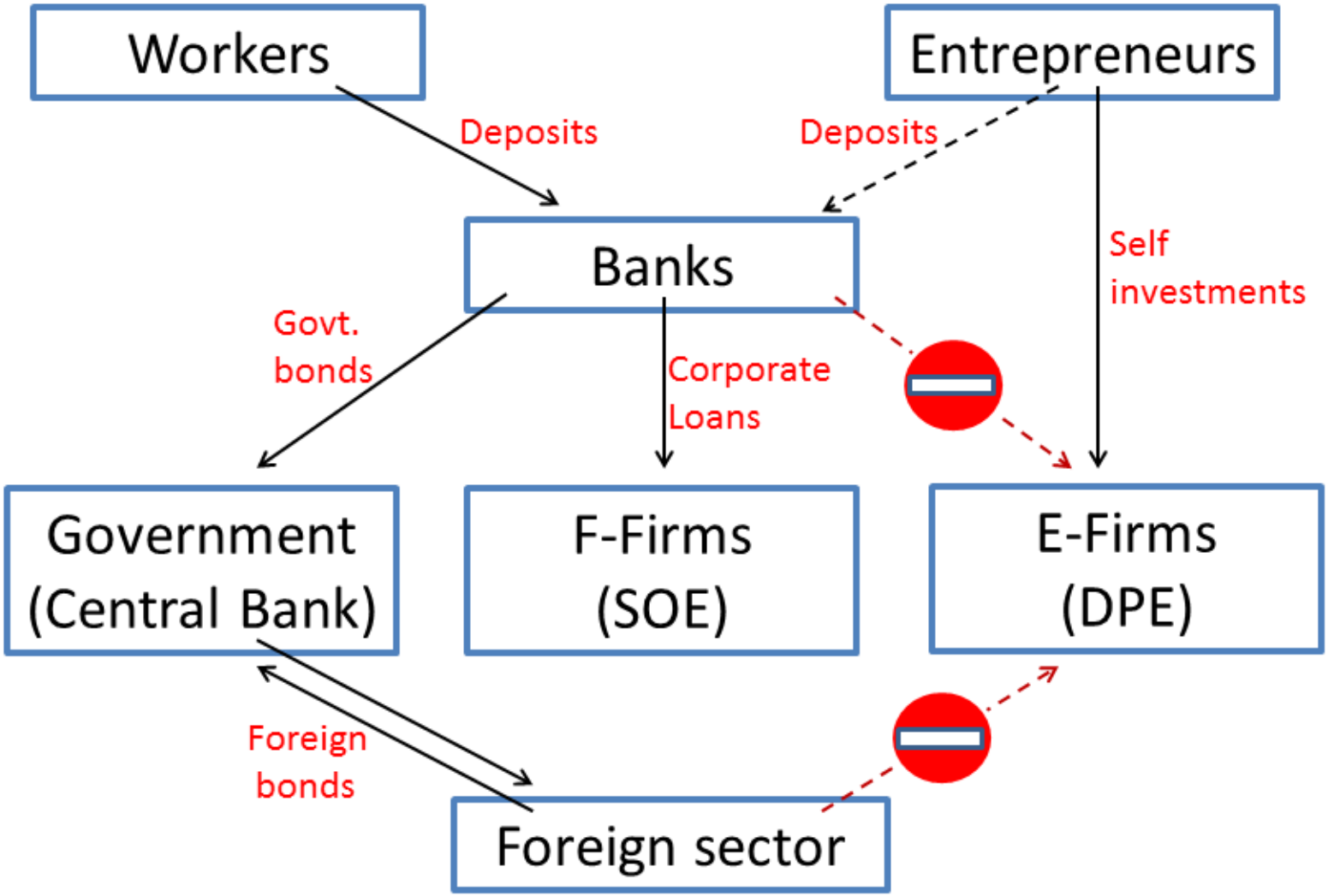
Figure: Dynamics of: employment share of private firms (Panel A), wage rate (Panel B), total output (Panel C) and surplus output ratio (Panel D)

Government policy

- Missing in GLC 2011: government policy
- China has extensive capital controls
  - regulation of domestic interest rates
  - tight restrictions on cross-border portfolio investments
  - non-convertibility of RMB (except for trade transactions)
- What are the effects of capital controls
  in the environment (transition) laid out in GLC?

Government policy

- Focus on three policies
  - Real interest rate (IRP) management
  - Real exchange rate (ERP) management
  - Banking Regulation


Workers
Entrepreneurs
Deposits
Deposits
Banks
Self
investments
Govt.
bonds
Corporate
Loans
Government
(Central Bank)
F-Firms
(SOE)
E-Firms
(DPE)
Foreign
bonds
Foreign sector

Interest rate policy (IRP)

- The government sets the interest rate on government bonds, and issues bonds so as to meet the demand at that rate
- The government covers eventual losses/gains through taxes/transfers

Wages and interest rates

- Wages are determined by F-firms' optimization ("neoclassical" firms with access to external loans)
- Profit maximization $\longrightarrow$ interest rate on loans pins down the capital-labor ratio of F-firms.
- Capital-labor ratio is decreasing in lendind rate, R^l
  - Hence, workers' wages is decreasing in R^l

$$w_t = w\left(R_t^l\right), \qquad w' < 0$$

Effect of wages (interest rates) on transition

- E-firms compete for workers with F-firms
- Entrepreneurs' profits are decreasing in wages
- Profits and the rate of return on investments determine the growth (through internal investments) of E-firms
- Thus, the speed of transition is increasing in R_t
  - High R_t reduces the competitive disadvantage of E-firms

A two-good economy

- OLG of two-period lived agents
- Agents consume a domestic (c) and a foreign good (c^*)

$$
\begin{aligned}
U_t &= \frac{1}{1-1/\gamma}\left(\left(c_{1,t}\right)^{\frac{\varepsilon-1}{\varepsilon}}+\left(c^*_{1,t}\right)^{\frac{\varepsilon-1}{\varepsilon}}\right)^{\frac{\varepsilon}{\varepsilon-1}(1-1/\gamma)} \\
&\quad +\beta\frac{1}{1-1/\gamma}\left(\left(c_{2,t+1}\right)^{\frac{\varepsilon-1}{\varepsilon}}+\left(c^*_{2,t+1}\right)^{\frac{\varepsilon-1}{\varepsilon}}\right)^{\frac{\varepsilon}{\varepsilon-1}(1-1/\gamma)}
\end{aligned}
$$

  where $\gamma > 1$

- World relative price of the two goods is given (small open economy)

Exchange rate policy (ERP)

- A non-monetary model of (real) exchange rate policy
- The government distorts the price at which the two goods are traded domestically
  - $e > 1$ (undervaluation) implies that the government makes foreign goods more expensive
- Markets do not clear
  - the distortion is implemented by a mkt. access restriction
- The government covers eventual losses out of its budget

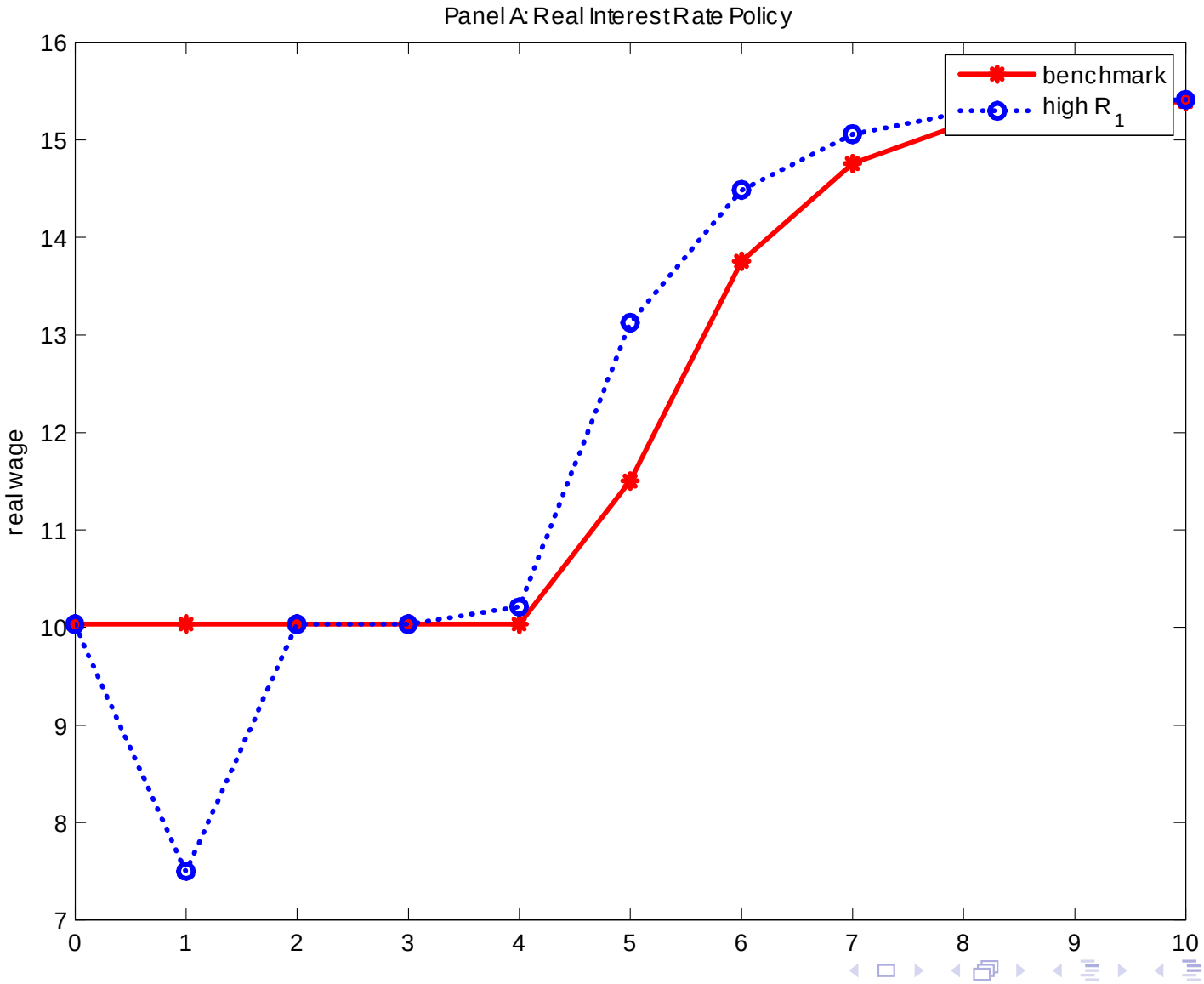
Activist policies

- Focus on activist IRP and ERP "during transition"
  - at time zero the govt. has no surplus
  - the government adopts temporary activist policies:
    - $R_1 > R_w$ (IRP)
    - $e_0 > 1$ (ERP)
  - the government reverts to laissez-faire ($R_{t+1} = R_w$ and $e_t = 1$) for $t \geq 1$
    - losses from activist policies are covered by taxes/subsidies

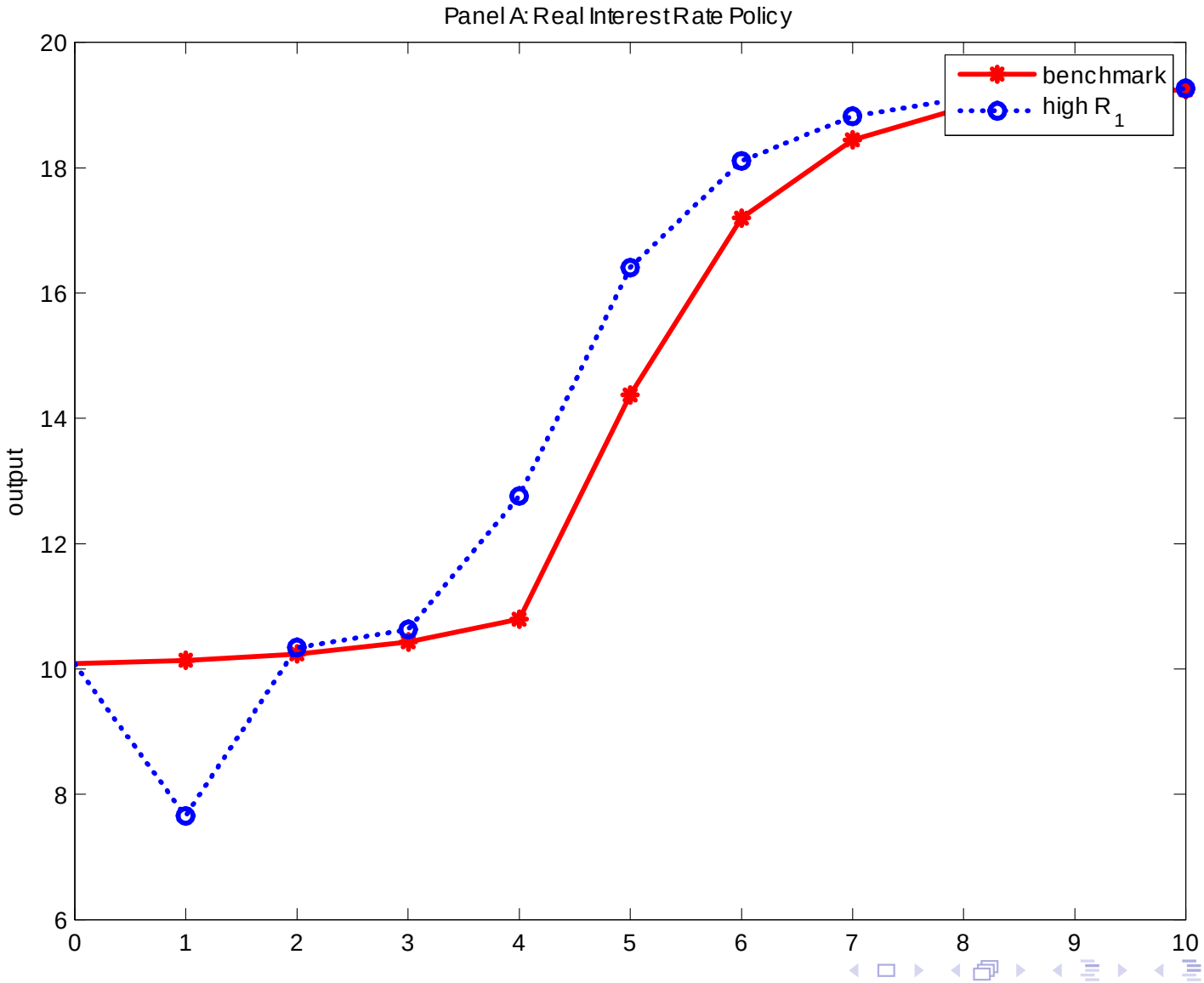
Effect of interest rate policy

- Relative to laissez faire, setting $R_1 > R_w$ implies
  1. F-firms investments fall ($K_{F,1} \downarrow$) since:
     1. $R_1 \uparrow \Rightarrow$ lower capital labor ratio ($\frac{K_{F,1}}{N_{F,1}} \downarrow$)
     2. $R_1 \uparrow \Rightarrow$ higher investment of entrepreneurs $\Rightarrow N_{F,1} \downarrow$
  2. Savings increase ($s_1 \uparrow$) due to a substitution effect
  3. Lower real wages

Effect of interest rate policy: wage dynamics



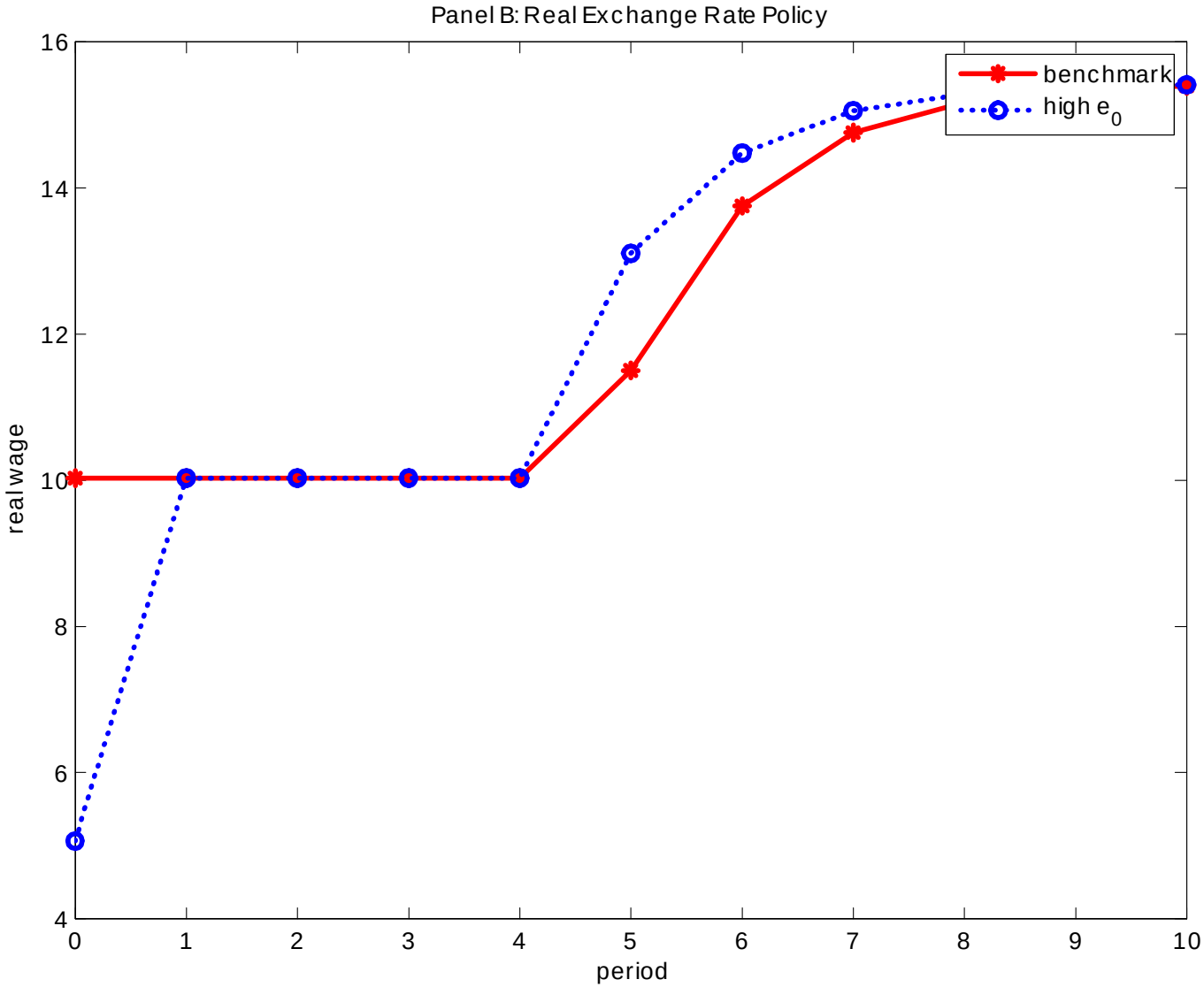
Effect of interest rate policy: output dynamics



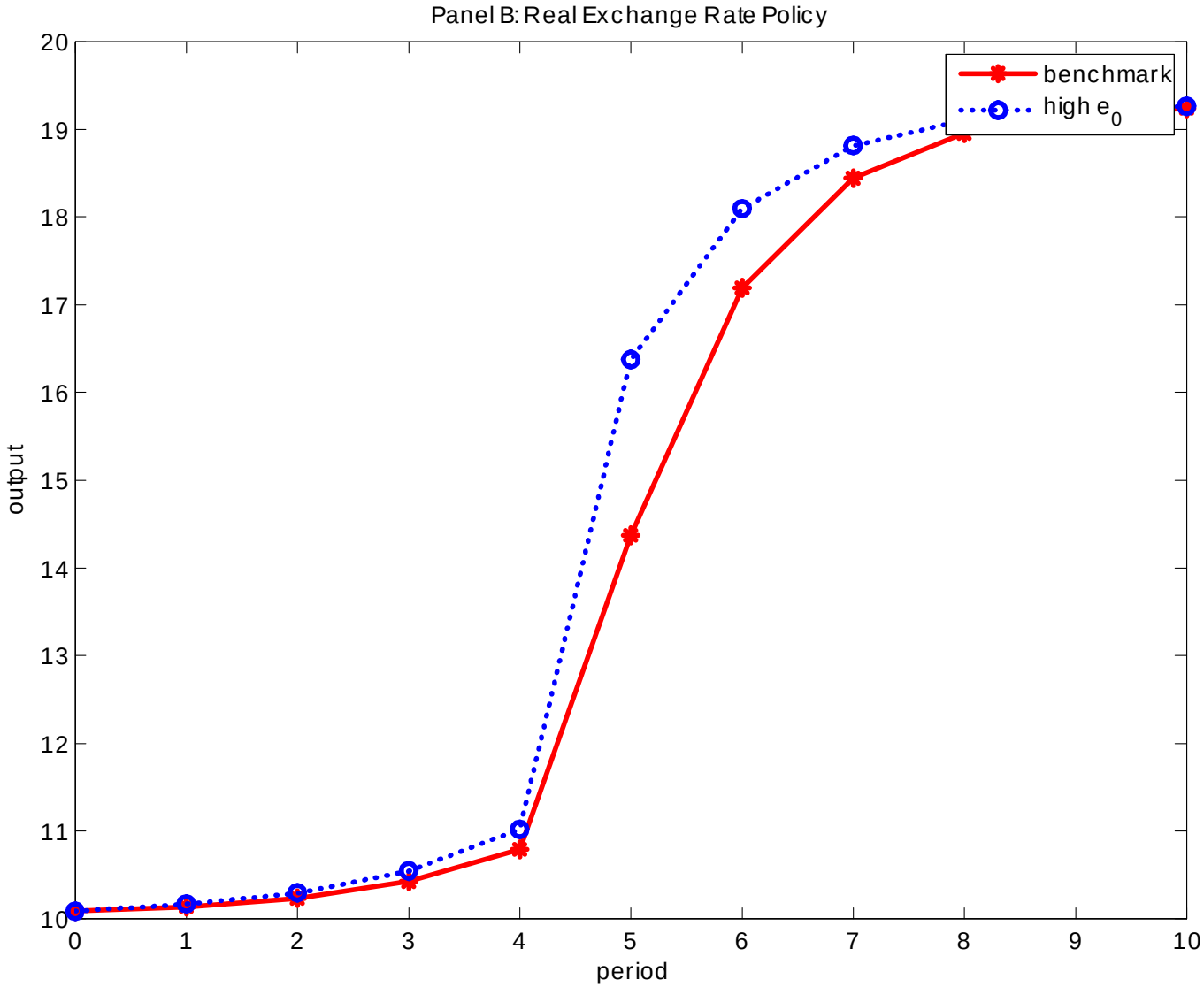
Effect of exchange rate policy

- $e_0 > 1$ implies that the consumption is unusually expensive at t=0 (foreign goods are more expensive today than in future)
- Relative to laissez faire, setting $e_0 > 1$ implies:
  1. $s_1 \uparrow$ (people wait to consume until foreign goods are cheaper)
  2. higher entr. savings/investments $\Rightarrow N_{F,1} \downarrow \Rightarrow K_{F,1} \downarrow$
  3. Lower real wages

Effect of exchange rate policy: wage dynamics



Effect of exchange rate policy: output dynamics



Foreign surplus

- In the short run, activist policies increase the savings gap, and thus the foreign surplus

$$\underbrace{-b_1^f}_{\text{foreign surplus}} \quad \uparrow = \quad \underbrace{(s_1 \uparrow - K_{F,1} \downarrow)}_{\text{saving gap households \& firms}}$$

- Note that, in the long run, the government must raise taxes (or do other contractionary fiscal policies) to cover the initial losses run to sustain the activist policy
  - foreign surplus reverts and is lower in the long run

Domestic interest rate regulation

- In China, domestic banking activity has been heavily regulated
- Banks could not compete in setting deposit or loan rates
- Large market power to insiders (four major banks)
- Deregulation is on its way

Domestic interest rate regulation

- We focus on ceilings on deposit rates
- Two types of banks: *incumbent* and *fringe*
- Fringe is less attractive to depositors, but less biased against private domestic firms (or better at monitoring them)
  - fringe banks lend to private firms up to a credit limit

Domestic interest rate regulation

- The regulation of deposit rates keeps the fringe out of business
  - they could finance high-yield projects...
  - ... but cannot attract depositors because of cap on deposit rates
- Liberalization triggers the entry of fringe banks
  - they attract depositors by offering higher rates
  - they can still break even by financing high-yield projects
- Liberalization speeds up privatization, productivity, and growth, as long as it promotes the entry of a "different" type of banks
- Removing foreign capital controls can achieve the same goals

Conclusions

- In an environment with *asymmetric* credit market imperfections, there are novel channels through which fiscal and monetary policy affect growth and current account surplus
- Important distributional effects
  - trade-off between current wages and speed of reallocation and productivity growth
- Government policy may have fostered growth but also exaccerbated inequality and lowered consumption
- Deregulation of internal domestic interest rate may be a win-win policy (except for SOE...)
- Removing capital controls may promote further financial development (but we ignore here potential risks)