

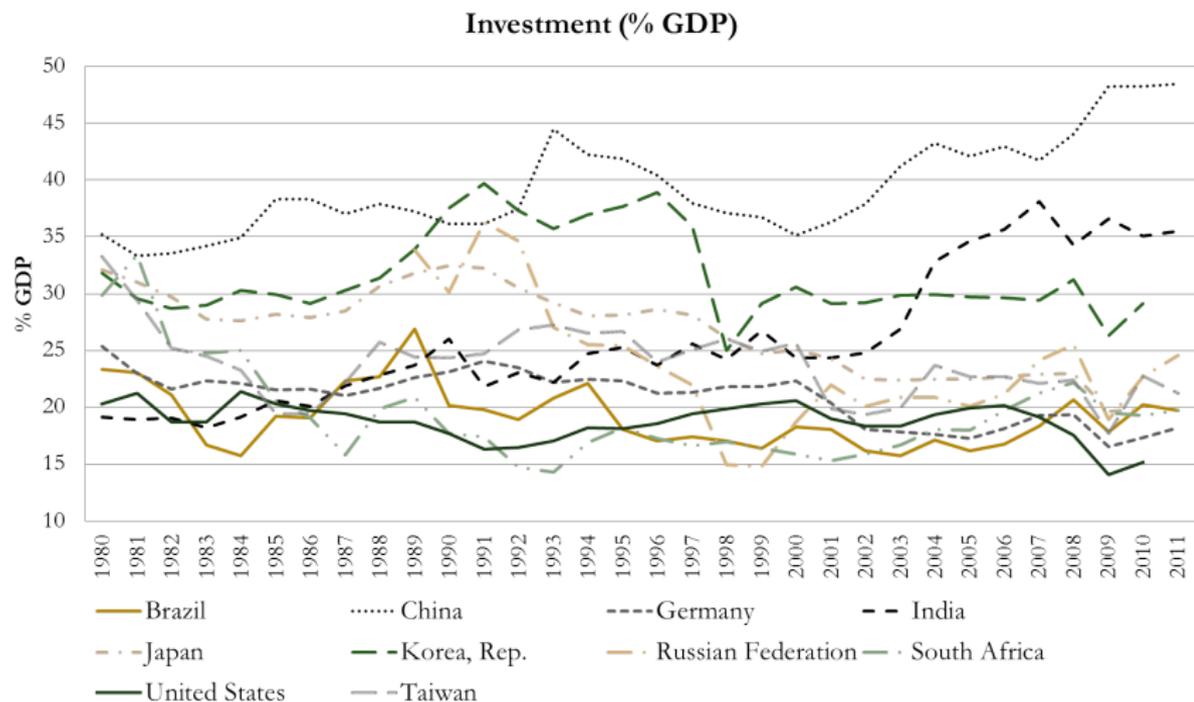
# China's Financial System and Economic Imbalances

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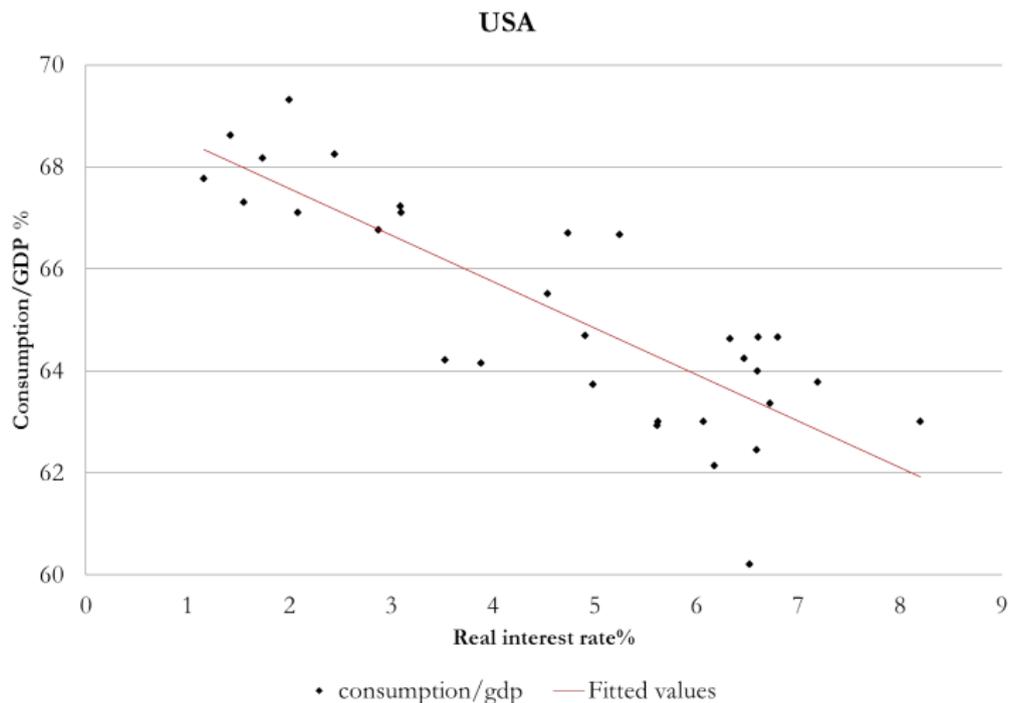
# China's Economic Imbalances



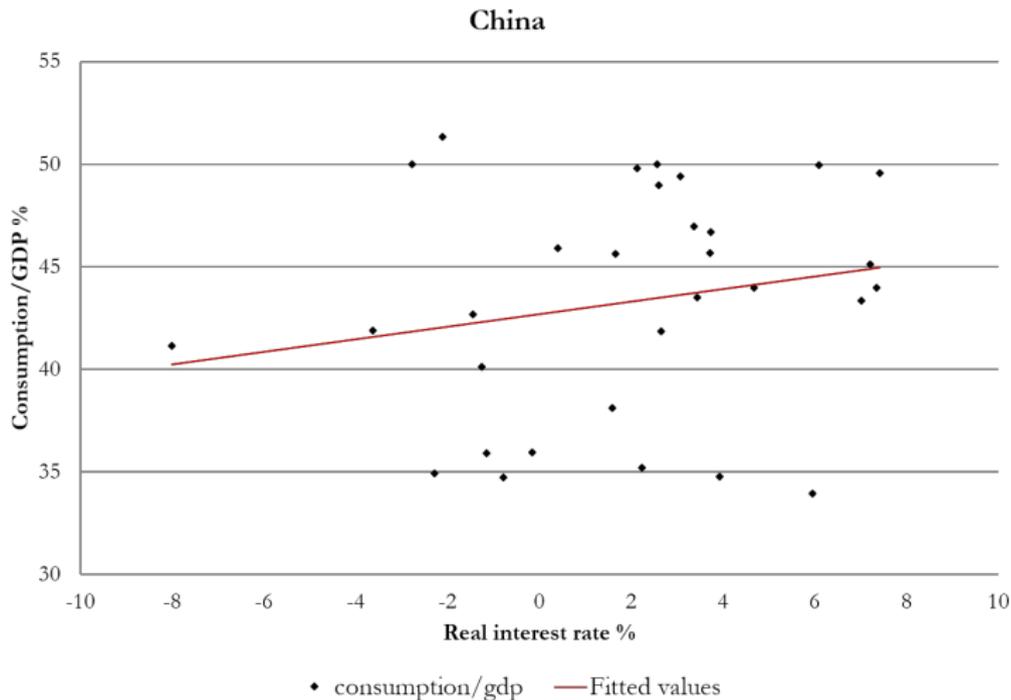
# Economic Imbalances and Financial Frictions

- **Economic imbalances**
  - High investment share and **low consumption** share of GDP
  - **Booming housing** market v.s. **hollowed-out industrial** sector
- **Frictions in the financial system**
  - **Financial repression: low interest rate** of household savings
  - **Financially connected state firms** vs **constrained private firms**
  - **Households constrained** in housing purchases and health expenditures
- Are the Imbalances **related to/caused by** financial frictions?

# Interest Rate v.s. Consumption, US



# Interest Rate v.s. Consumption, CN



# Questions

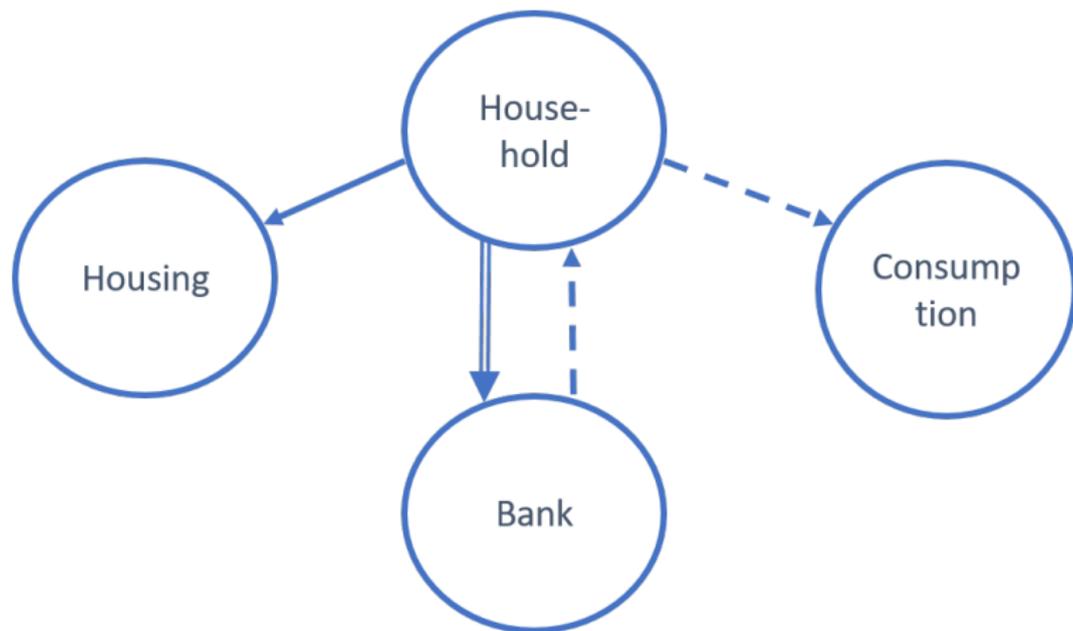
- The relation between **financial frictions** and economic **imbalances**?
  - Why **lower interest rate, lower consumption**?
  - What causes **housing boom** and hollow-out of the industrial sector?
- **Rebalance** the economy?
  - **Policies** directly **targeting symptoms**
  - **Reforms** that fundamentally **change the financial system**

# Financial Frictions Creates Economic Imbalances

Three channels

1. **Repressed interest rate**, low consumption
  - Households need to save for some **future necessary expenditures**: housing, health
2. **Misallocation of loans** contributes to housing boom and hollows out the industrial sector
  - Banks give **most loans to connected/state firms**
  - Financial resource flows into the real estate, through connected/state firms
  - Not to private firms who are willing to invest in industrial production
3. **High risk in the shadow banking sector** increases precautionary saving
  - Undiversified risks in shadow banks: size/region limitation
  - High risk for households who lend to shadow banks

## Channel 1: Repressed Interest Rate



# Channel 1: Repressed Interest Rate

- Households need to **finance future expenditures**, e.g., housing purchases
- **Repressed interest rate**
- Households need to **save more**
- **Low consumption**

# Channel 1: Repressed Interest Rate

- Households

$$\max \frac{c_{t,y}^{1-\sigma}}{1-\sigma} + \beta \frac{c_{t+1,o}^{1-\sigma}}{1-\sigma}$$

$$\text{s.t. } c_{t,y} + s_{t+1} = w_t,$$

$$c_{t+1,o} = R_{t+1}s_{t+1},$$

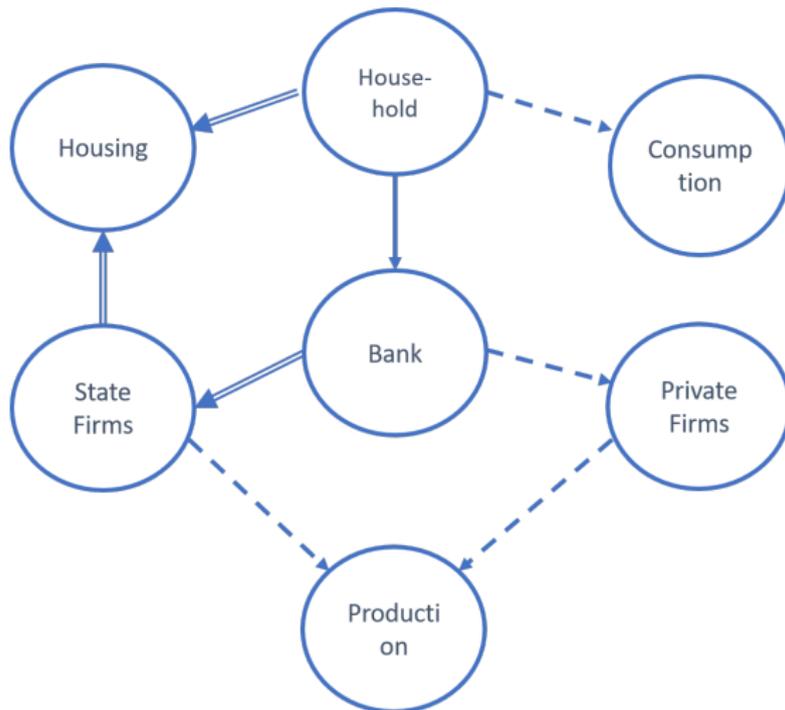
$$c_{t+1,o} \geq P_{t+1,h}.$$

- Solution

$$s_{t+1} = \begin{cases} \frac{P_{t+1,h}}{R_{t+1}}, & \text{binding constraint, high } w_t \\ \left( 1 - \frac{1}{1 + \beta \frac{1}{\sigma} R_{t+1}^{\frac{1-\sigma}{\sigma}}} \right) w_t & \text{nonbinding} \end{cases}$$

- If the constraint is binding, lower  $R_{t+1}$ , higher  $s_{t+1}$ , lower  $c_t$
- If not, the opposite, given that  $\sigma \leq 1$

## Channel 2: Financial Misallocation



## Channel 2: Financial Misallocation

- Bank loans are mostly **allocated to state firms**, but not much to private firms
  - **Low interest rate for bank loans**
  - Safer to lend to state firms
- State firms, with more financial resource than needed in production, invest in housing and hold houses
- **Housing price goes up**
  - Households need to save more for housing purchases
  - **Low consumption**
- **Financial resources**
  - **Not allocated to** more productive **private firms**
  - **Hollow out the industrial sector**

## Channel 2: Financial Misallocation

- State firms

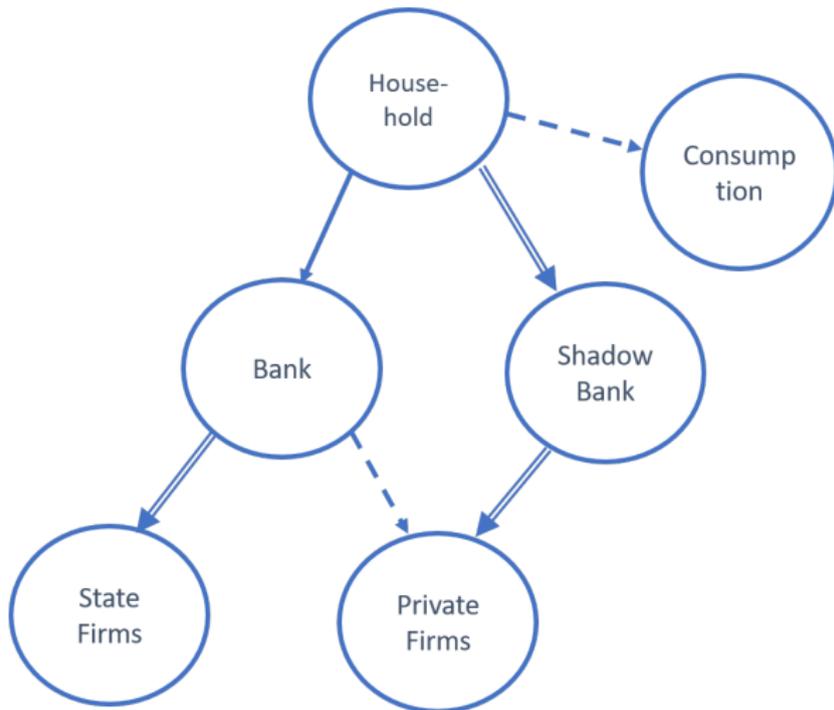
$$\begin{aligned}\max K_S^\alpha - R_S K_S &\Rightarrow \\ K_S &= R_S^{-\frac{1}{1-\alpha}}, \\ I_h &= B_S - K_S > 0.\end{aligned}$$

- Private firms:

$$\begin{aligned}\max Z_P K_P^\alpha - R_P K_P \\ \text{s.t. } K_P &\leq B_P, \\ \Rightarrow K_P &= B_P < (R_P/Z_P)^{-\frac{1}{1-\alpha}}.\end{aligned}$$

- Large  $B_S$ , large  $I_h$ , high  $P_h$
- High  $s$  given  $s = \frac{P_h}{R}$

## Channel 3: High Risk in Shadow Banking System



## Channel 3: High Risk in Shadow Banking System

- **Private firms** do not get much loan
- **Borrow from shadow banks**
- Shadow banks **are less capable of diversifying risk**
- **High risk**: for shadow banks, but also for private firms
- High risk for household investment in shadow banks
- **Low consumption**

## Channel 3: High Risk in Shadow Banking System

- A shadow bank from a region can not diversify risk by investing in other regions
- Return (to the private firm/the shadow bank/households) is risky:

$$R_{sbi} = \begin{cases} R_h & \text{if firm production is high enough} \\ 0 & \text{if not} \end{cases}$$

- Households

$$\begin{aligned} \max u(c_{t,y}) + \mathbb{E}u(c_{t+1,o}), \\ c_{t+1,o} = R_{t+1}s_t + R_{t+1,sbi}s_{t,sbi}. \end{aligned}$$

- Precautionary saving kicks in

# Implications

- Symptoms
  - Low consumption
  - High risk
  - Financial constraints
- **Root causes**
  - **Interest rates** are **not determined by the market**
  - **Misallocation** of financial resource

# Policies Targeting Symptoms

- Low consumption: **reduce interest rate**
  - Effective policies in mature economies, e.g., U.S.
  - **Opposite effect in China**
- Risks: **government guarantees for firms**
  - Covers the short-term risk
  - **High implicit debt**
  - **Long-term risk**

# Reforms Changing Financial System

- **Market-determined interest rate: higher**
- Higher rate for **household savings**
  - **Less saving** needed for future expenditures
  - Higher consumption
- Higher rate for **bank loans**
  - Less efficient state firms want less loan
  - **Lend to private firms**
  - **Smaller shadow banking sector**
  - **Smaller risk**

# Reforms Changing Financial System

- In the model that **combine all three parts**
  - **Market determined interest rate:** competition
  - Banks lend to private firms
  - **Regional risks are diversified**
  - Shadow banks lose the importance
  - **Interest rate increases**
  - **Consumption goes up**

# Conclusion

- **Frictions in the financial system** causes **economic imbalances**
  - Repressed interest rate
  - Misallocation of financial resource
  - Risk in the shadow banking sector
- **Reforms correcting** the inefficient **financial system** help to rebalance the economy