

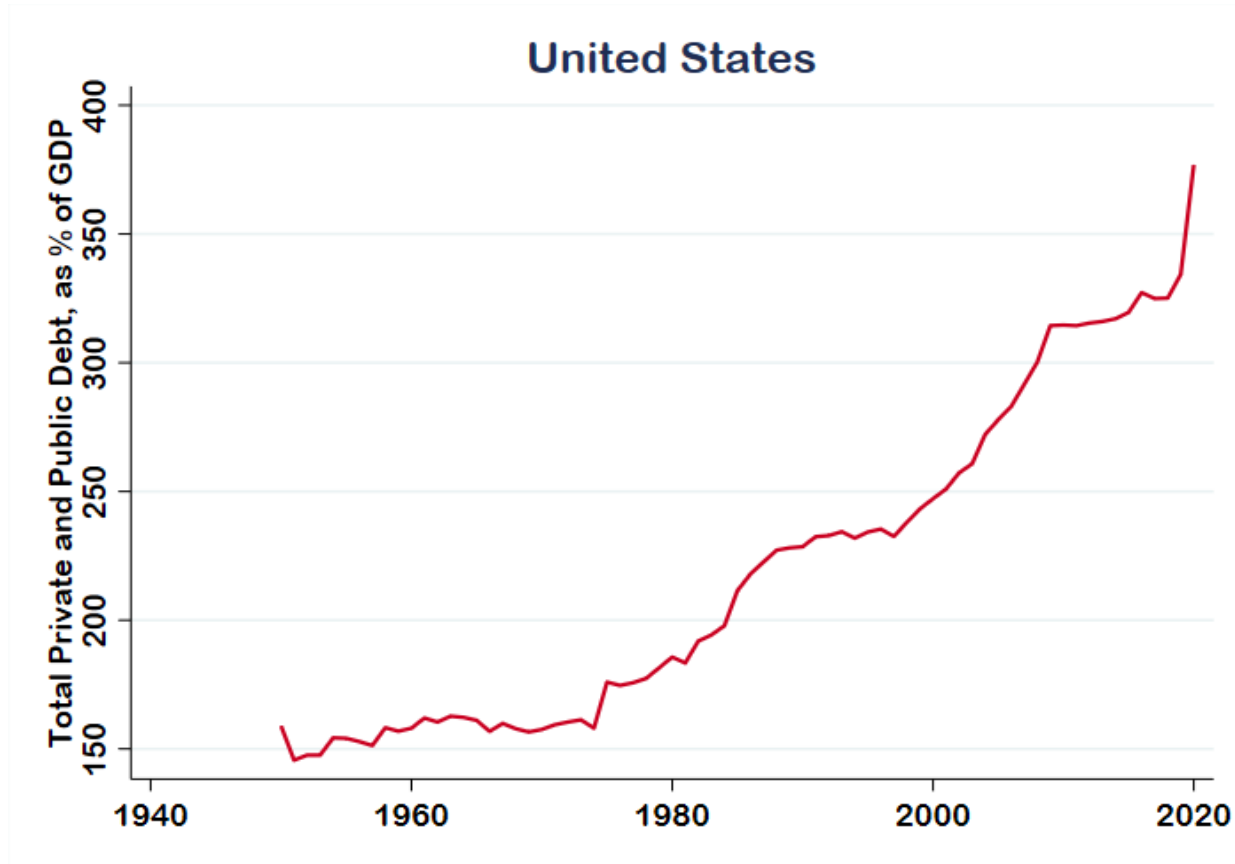
Debt and Interest Rates

Atif Mian

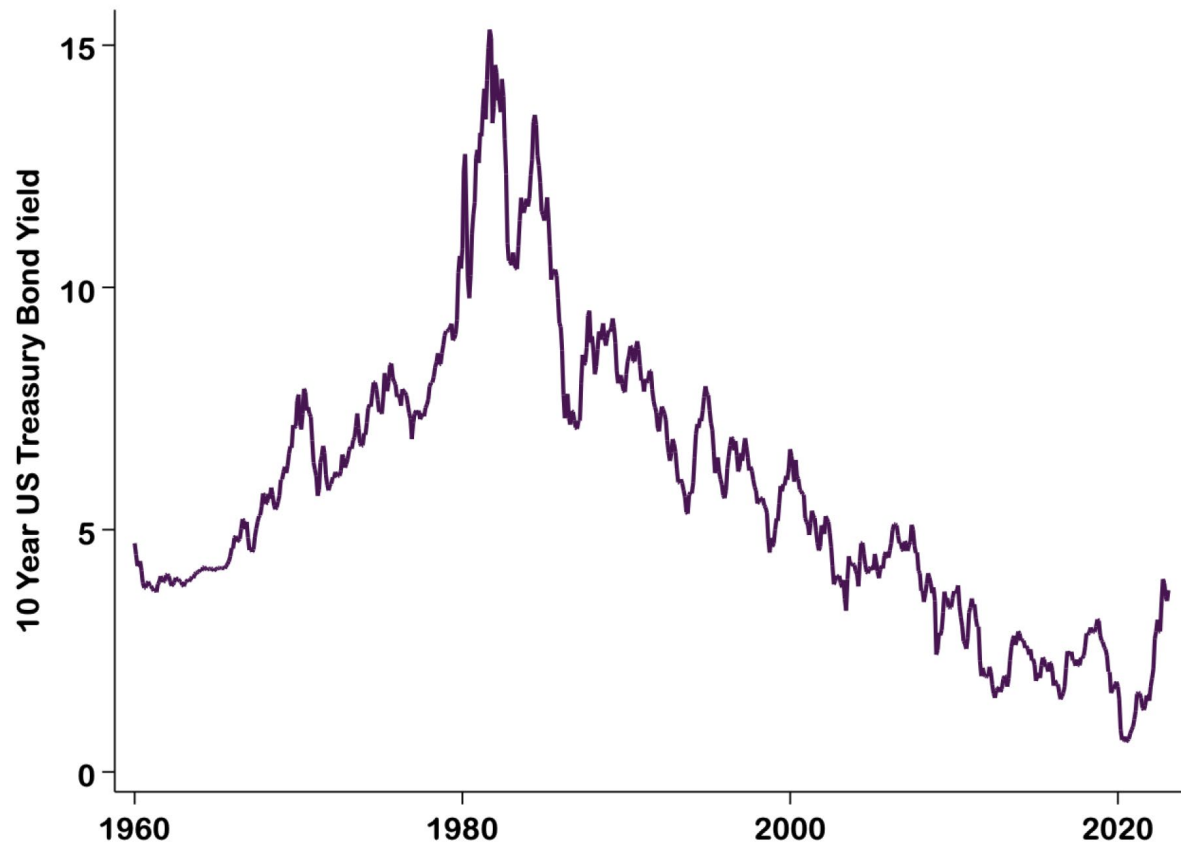
Princeton University

Korea Capital Market Institute

The rise of finance



Long Fall in Rates

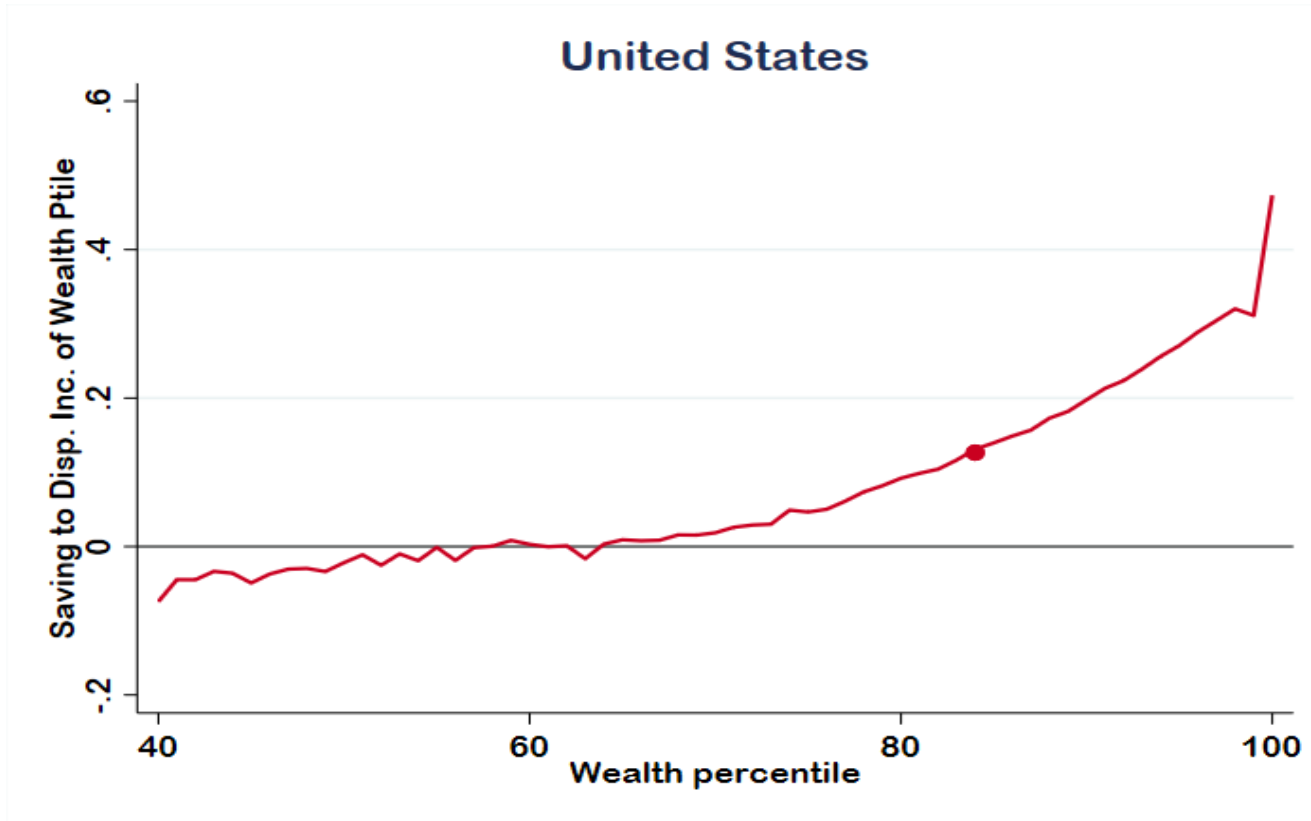


How large debt burden affects aggregate demand and equilibrium interest rate?

What are the consequences and implications for monetary policy?

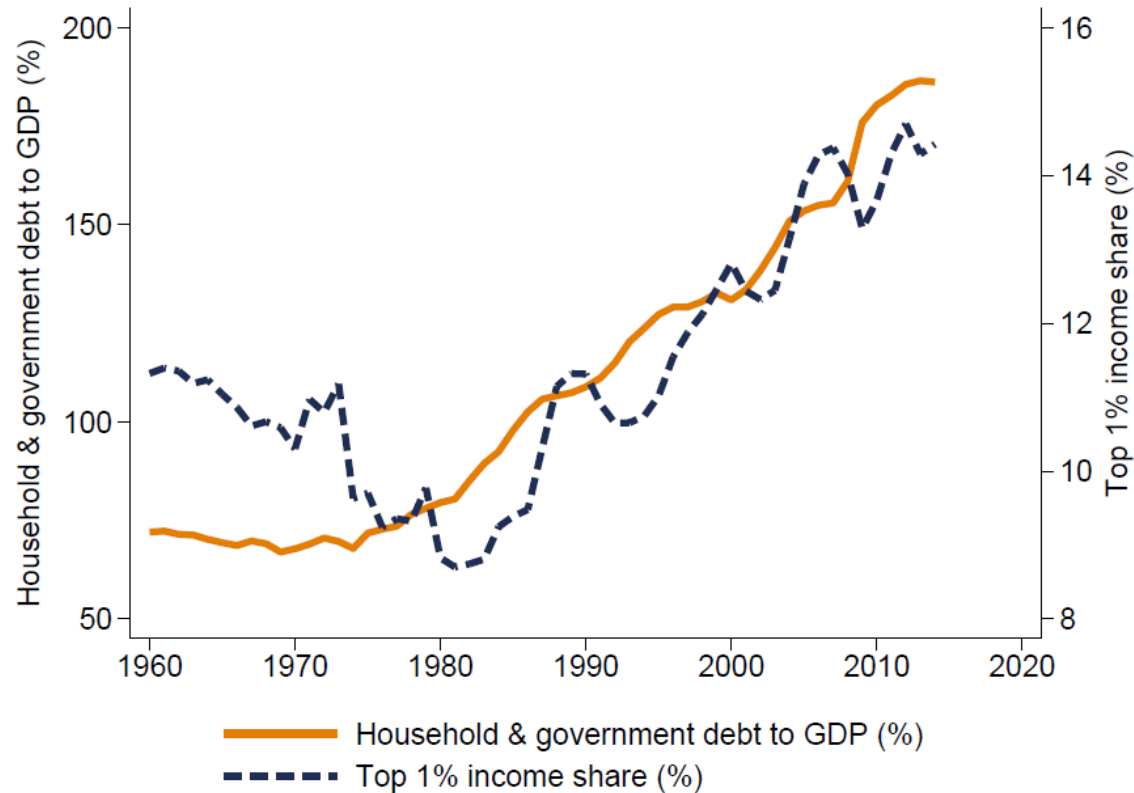
Implications for Korea?

Household Saving Rates: '83-'16

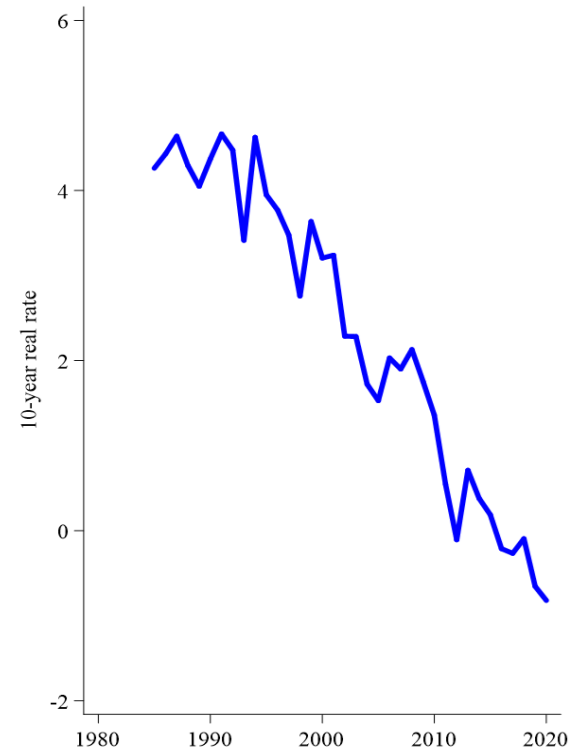


Mian, Sufi and Straub, "Saving glut of the rich"

Rising inequality is associated with rising debt



.... and falling rates



Indebted Demand

- When rich save more out of lifetime income, and extreme inequality rises
 - ... need to stimulate demand today through debt creation: rich save/lend, non-rich borrow [Why is higher saving not equal to higher investment?]
 - ... but that reduces demand in the future when borrowers have to repay the debt
 - ... only solution is for interest rate to fall, so non-rich could borrow even more!
 - ... this **indebted demand** cycle continues, until interest rate hits zero lower bound (ZLB)
 - ... if extreme inequality persists, remain stuck in perpetual **debt trap**

Indebted Demand model

- **Non-homothetic** preferences
... people derive greater utility from accumulating wealth (a) as they get richer

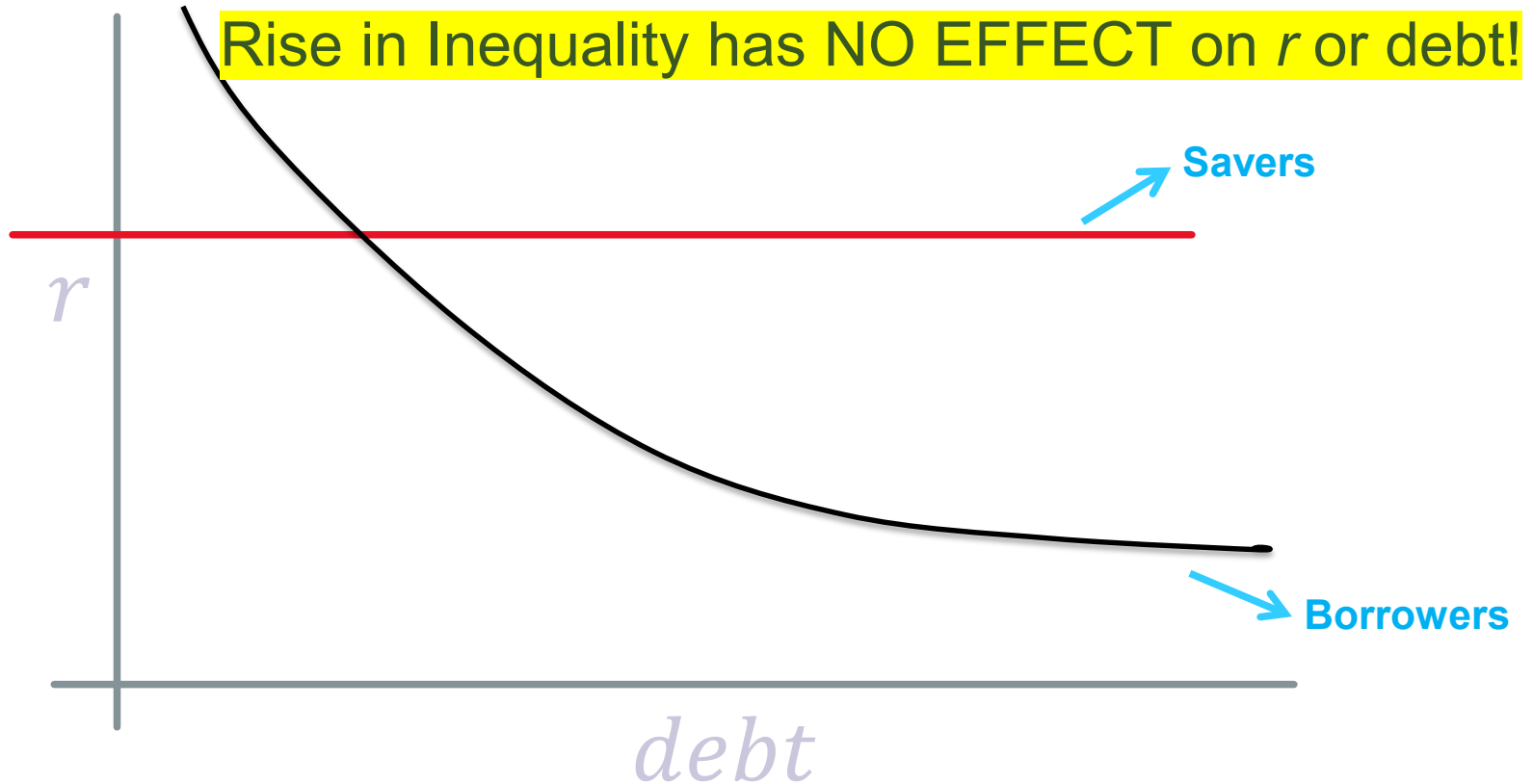
$$\int_0^{\infty} e^{-(\rho+\delta)t} \left\{ \log c_t^i + \frac{\delta}{\rho} \cdot v(a_t^i) \right\} dt$$

- Euler equation in steady-state for the rich
... determines the **long-run saving supply schedule**

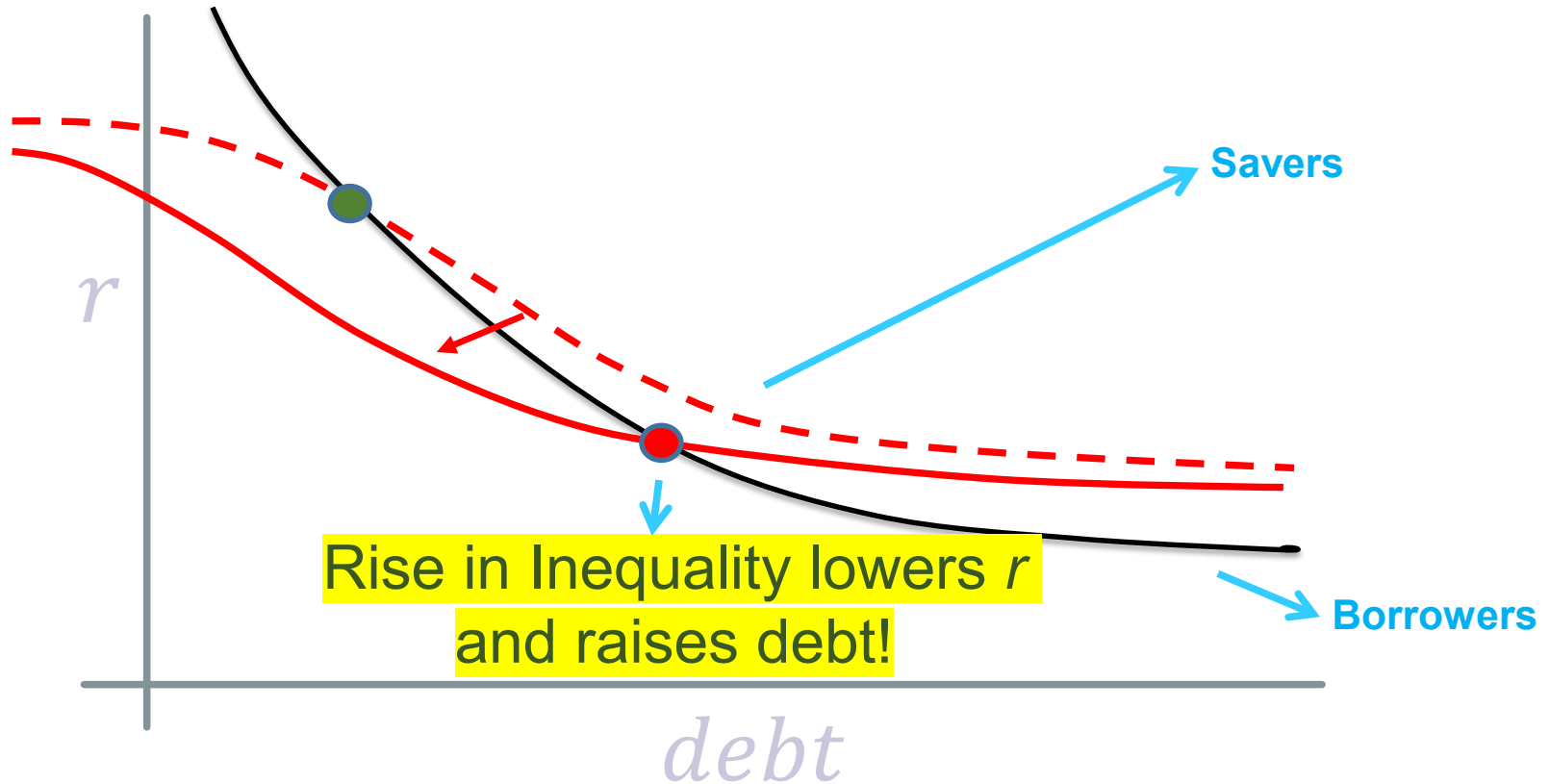
$$r = \rho \cdot \frac{1 + \rho/\delta}{1 + \frac{\rho}{\delta} \cdot av'(a)}$$

See Mian, Sufi and Straub (QJE 2021) for formal details

Standard homothetic models



Indebted Demand model



How large debt burden affects aggregate demand and equilibrium interest rate?

What are the consequences and implications for monetary policy?

Implications for Korea?

Implications for monetary policy

- Rising inequality **forces the hand of monetary policy** by lowering r^*
... reduces space for monetary policy to operate
- Easy monetary policy often raises demand through debt creation
... but that creates indebted demand, putting downward pressure on future rates:
monetary policy has **limited ammunition**.

“the sustainability of debt burdens depends on interest rates remaining low” –
Mark Carney
- Persistent extreme inequality pushes monetary policy against ZLB, and
economy stagnates inside a **debt trap**

Monetary Policy and Indebted Demand

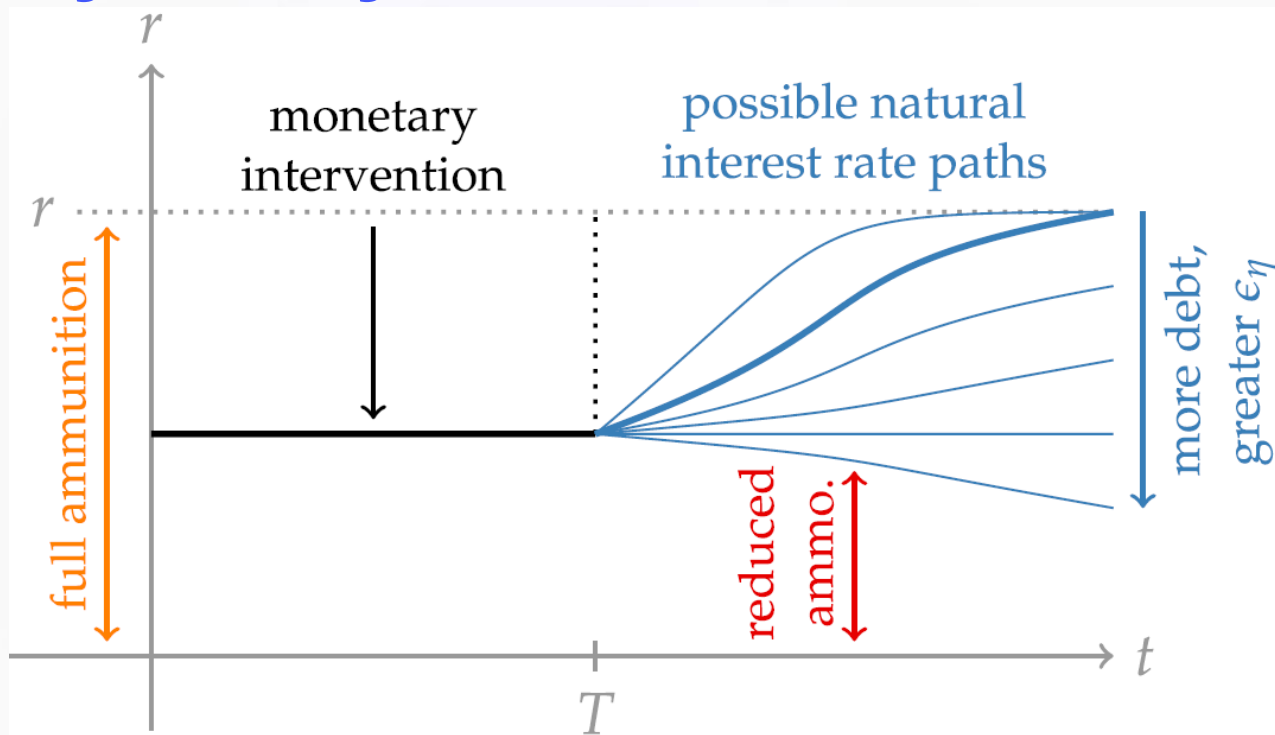


FIGURE XII

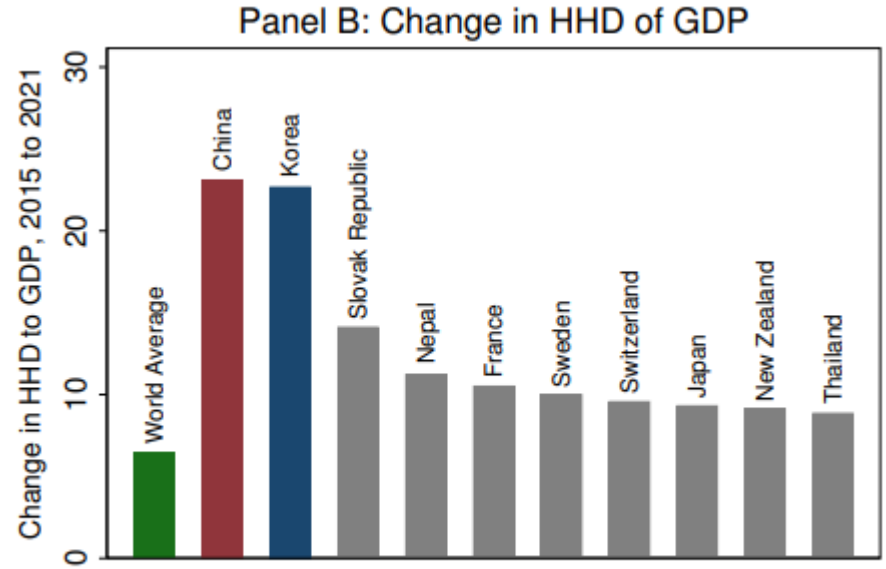
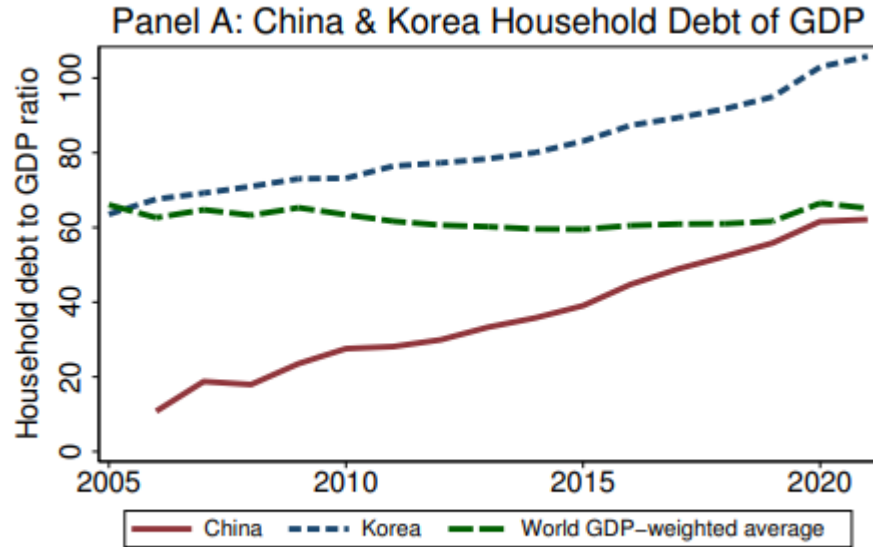
Debt Limits the Ammunition of Monetary Policy

How large debt burden affects aggregate demand and equilibrium interest rate?

What are the consequences and implications for monetary policy?

Implications for Korea? (Sufi 2023)

Household Debt to GDP in China and Korea



Comparison with 2001-07 cycle

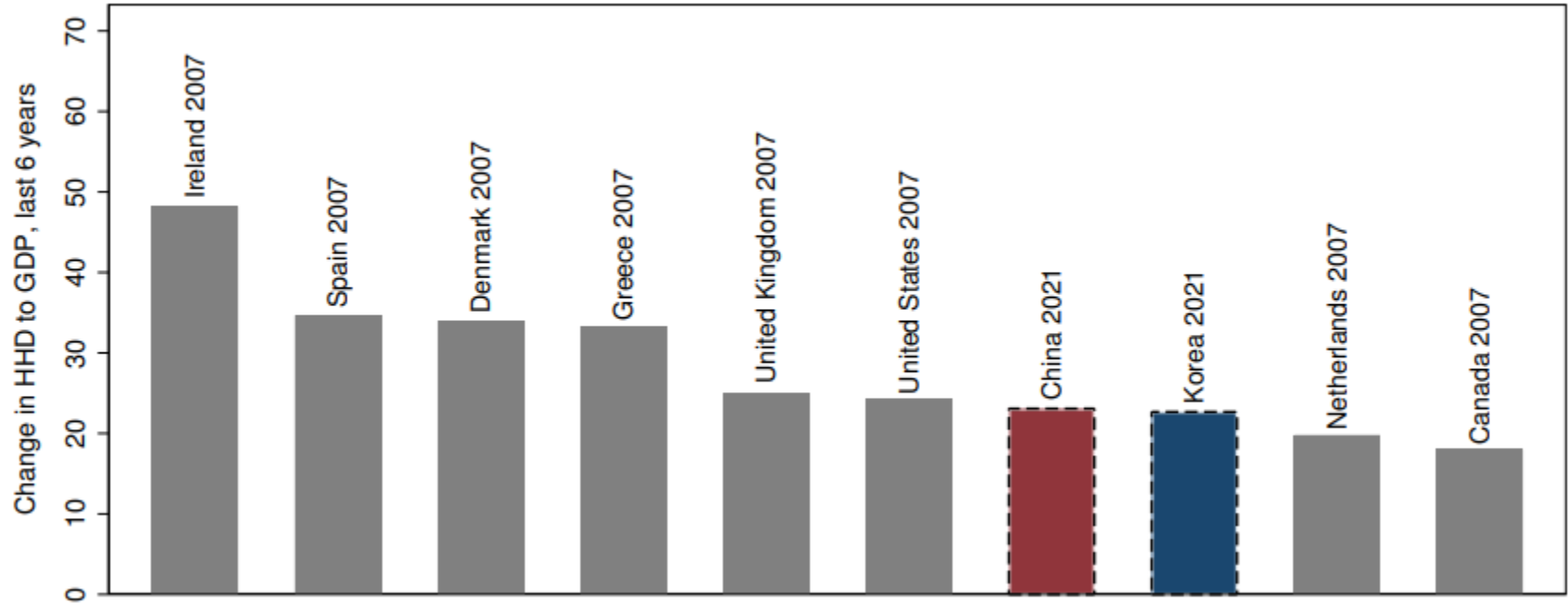
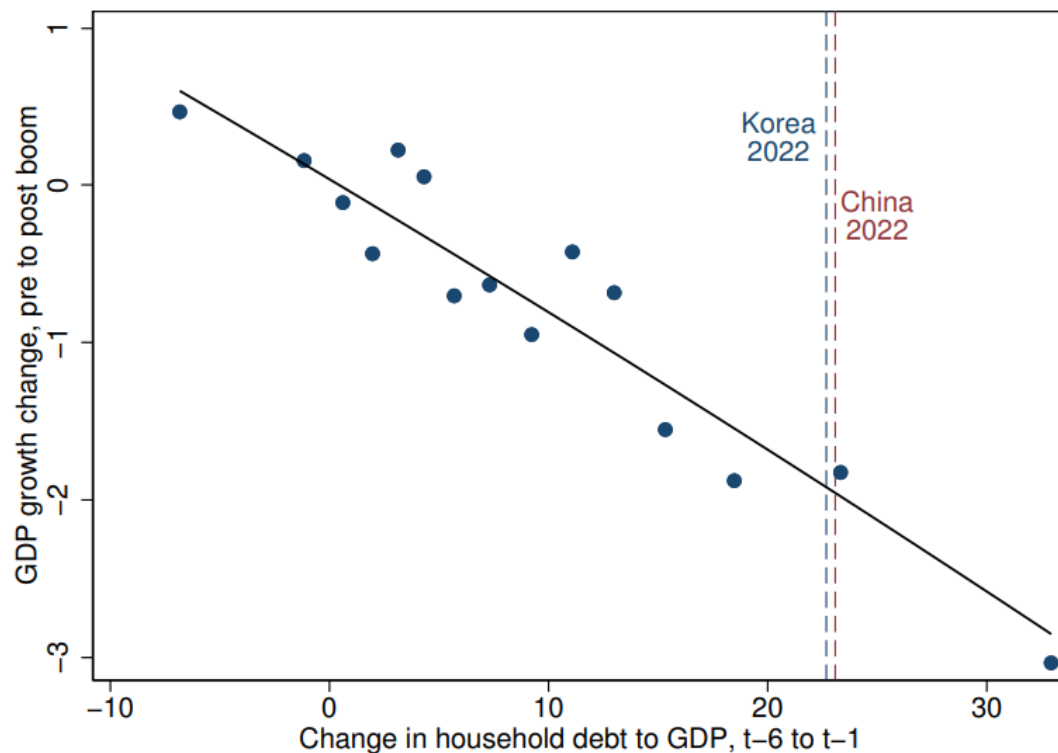


Figure 3: Household debt booms and GDP growth: The core relationship



This figure is a binscatter of the unweighted version of the regression specification in equation 1. The left hand side variable is the average annualized real GDP growth in the three years including $t + 1$ to $t + 3$ minus average annualized real GDP growth in the six years before t including $t - 7$ to $t - 1$. The sample for the regression is all countries from 1962 to 2015. The two dotted lines show the rise in household debt to GDP for China and Korea from 2015 to 2021.

Figure 4: Comparing with previous booms: the current account position

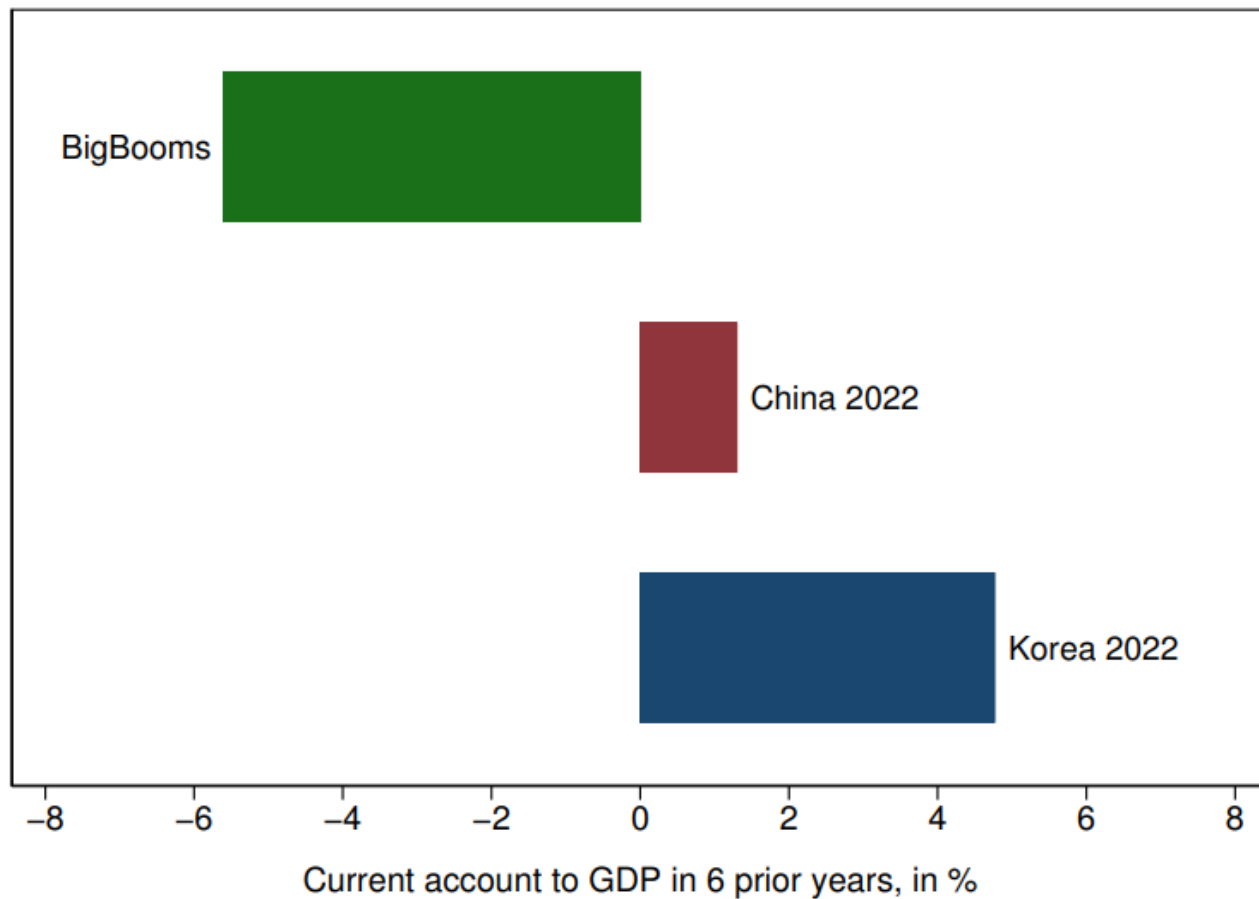
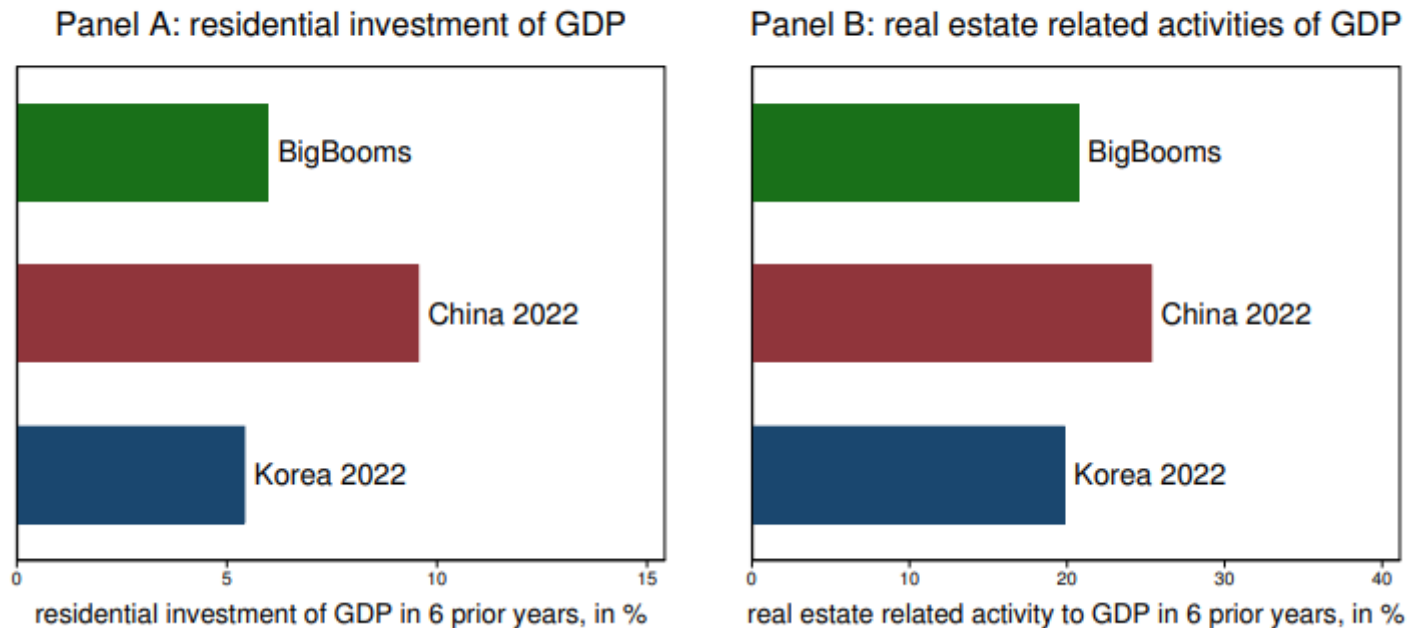


Figure 6: Magnitude of the housing construction boom



Thank you!