Discussion of

Financial Sector Origins of Economic Growth Delusion

by Frederic Malherbe and Michael McMahon

Vadim Elenev

NYU Stern; JHU Carey

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Big Picture

How do financial frictions affect the capital and output levels of an economy?

- Credit constraints: too little borrowing, investment, output relative to first-best
  - ► Tightening of constraints → output drop; bigger inefficiency e.g. Favilukis, Ludvigson, Van Nieuwerburgh 2017

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 - ▸ Boom too high

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- **This paper:** over-investment relative to **first-best**
  - ▶ Source of inefficiency: government guarantees make private cost of capital lower than social cost of capital
  - ▶ Trend too high
  - ▶ Removal of guarantees leads to a drop in investment, capital, and output. But this is good for the economy.
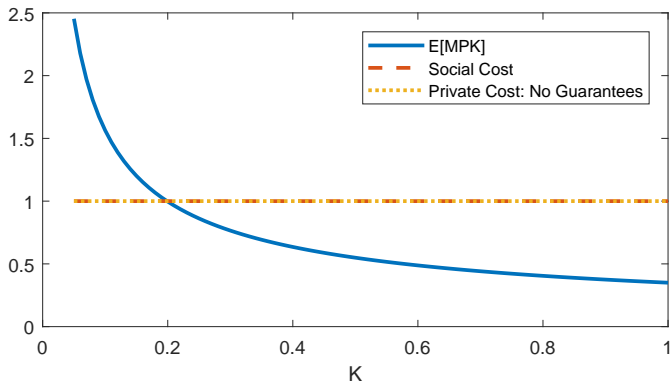
Over-Investment

- Planner: $E[MPK] = 1 \implies K^*$
- Equilibrium: $E[MPK] = \frac{\bar{A}}{A}$
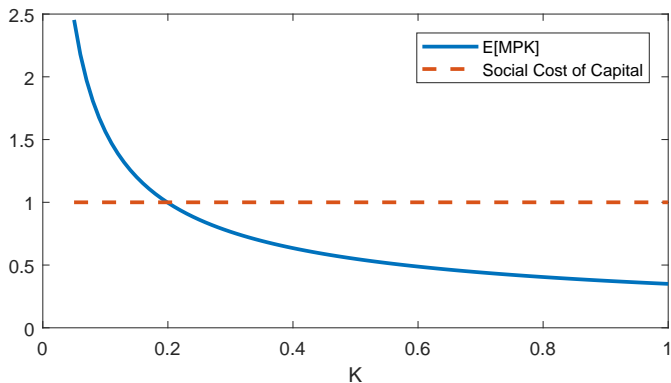
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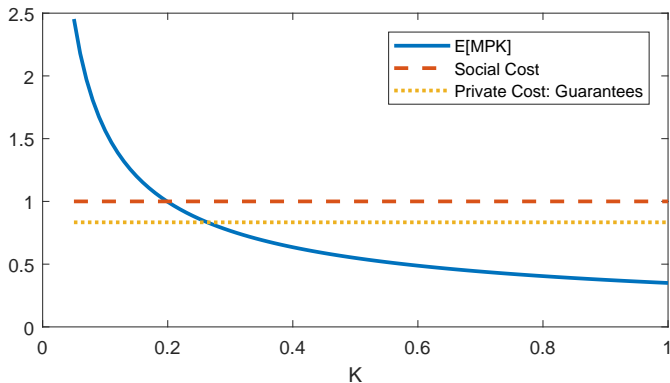
- Planner: $E[MPK] = 1 \implies K^*$
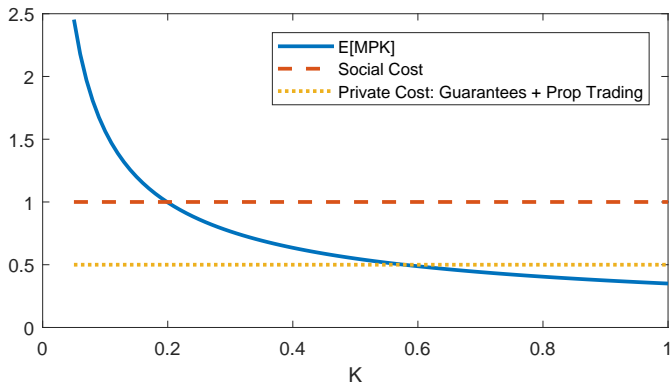- Equilibrium: $E[MPK] = \frac{\bar{A}}{A} = \frac{\bar{A}}{A}$ (No Guarantees)

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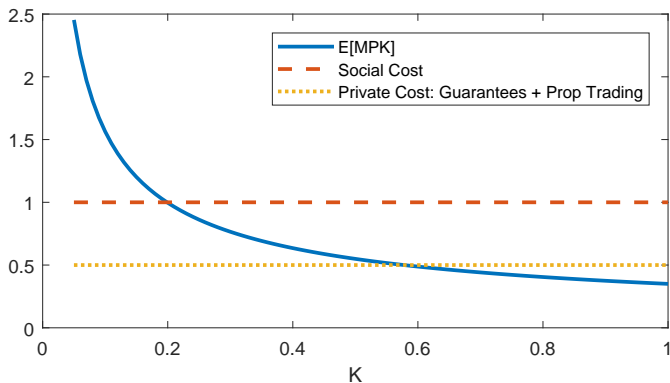
Over-Investment

- Planner: $E[MPK] = 1 \implies K^*$
- Equilibrium: $E[MPK] = \frac{\bar{A}}{A} = \frac{\bar{A}}{A_H + (1-p)/p A_L}$ (Guarantees + Trading)

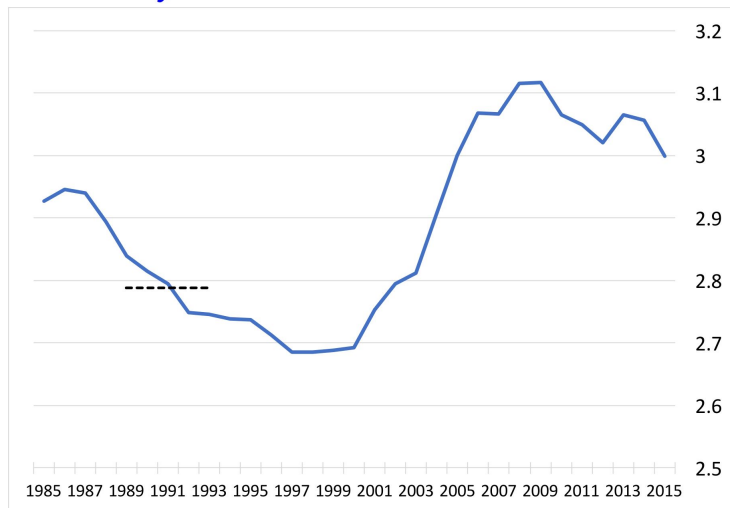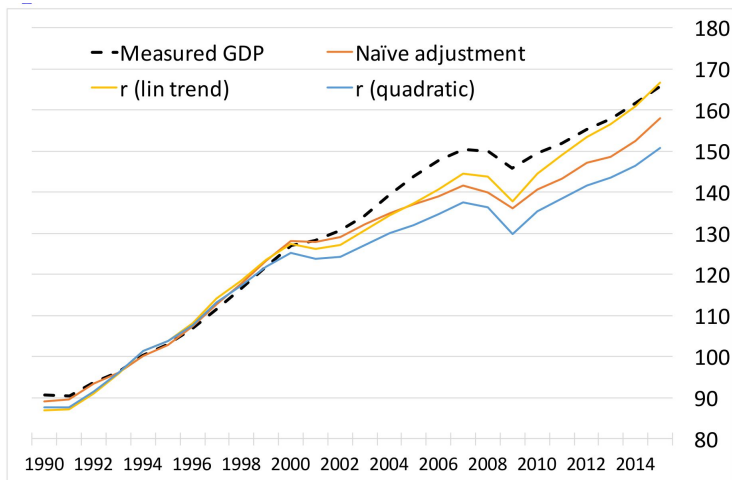# Over-Investment

- Planner: $E[MPK] = 1 \implies K^*$
- Equilibrium: $E[MPK] = \frac{\bar{A}}{A}$
- Capital-Output Ratio $\frac{K}{E[Y]} = \frac{1}{A} K^{\alpha}$ increasing in K

Empirics: Capital-Output Ratio has increased

Empirics: Adjusted GDP recovered back to Trend

Major Comments

- Nice paper: simple model pours cold water on the goal of returning to pre-crisis trend GDP

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- Empirical Challenge #1: were government guarantees removed/weakened in 2008?
  - Authors: no, but banks' ability to exploit guarantees diminished
  - E.g. Volcker rule banned prop trading: in 2010, so after big GDP drop
  - E.g. capital requirements tightened: currently outside the model
  - Put them in and test relationship between capital requirements and measure of over-investment.
  - Did shadow cost of capital requirements go up? (Kisin Manela 2016)

Major Comments

- Nice paper: simple model pours cold water on the goal of returning to pre-crisis trend GDP
- Empirical Challenge #1: were government guarantees removed/weakened in 2008?
- Empirical Challenge #2: lots of evidence establishes link between ease of credit and Y or K/Y. But is it *underpriced* credit leading to *too much* output?
  - ▶ Or welfare-increasing constraint relaxation? Or inefficient credit booms?
  - ▶ Need to measure underpricing of bank risk more directly
  - ▶ Idea: exploit market-implied expected size of bailout i.e. $E[\tau]$ in the model ▶ Kelly, Lustig, Van Nieuwerburgh

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  Why not stick to K/Y in the empirical discussion?
- Extension: Redistributional effects
  - ▶ Who pays bailout taxes vs. who consumes cheap output? Household heterogeneity and international trade

Conclusion

- Important Question: is post-crisis trend GDP too low or was pre-crisis trend GDP too high?
- Simple and elegant model of a plausible channel for why the latter can be true
- More evidence needed to show this channel at work

Model Overview

- Setup
    - Small open economy with world gross expected return 1
    - Households with preferences $E[u(c)]$, asset holdings, inelastic labor income
    - Competitive banking sector that (1) invests and lends out capital, (2) issues equity and deposits, (3) can trade A-D securities backed by loan collateral
    - Firms borrow capital k and hire workers n to produce $Ak^{1-\alpha}n^{\alpha}$,
    - Shock: $A \in \{A_H, A_L\}$, $A_H > A_L$ realized after trading and investment

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- Setup
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    - ▸ M-M holds
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- Bank Cost of Capital: Guarantees
  - ▸ $LGD = 0$ from investors perspective, so $R_H = 1$
  - ▸ Expected cost of deposit financing for banks $pR_H < 1$, deposits dominate
  - ▸ Cheap cost of financing passed on to firms
  - ▸ Ex-post cost of bailing out deposits paid by households through lump-sum taxes τ

Model Overview

- Setup
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- Extensions
  - ▸ Positive interest rates and partial depreciation to match data
  - ▸ Downward-sticky wages to get overshooting dynamics when guarantees removed
  - ▸ 2 kinds of capital – elastic and inelastic – to highlight both price and quantity responses

Option-Implied Expected Bailout

Figure 6: BASKET-INDEX SPREADS IN BAILOUT MODEL
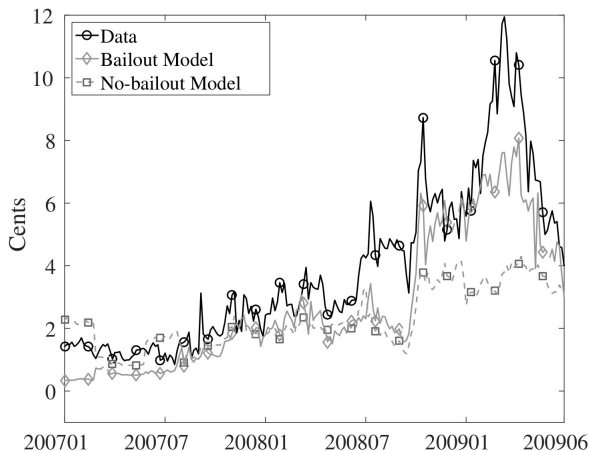
Source: Kelly, Lustig, Van Nieuwerburgh (2016)

GDP 1% below trend during benchmark period

HP-Filtered Log GDP and NDP

GDP — NDP — Avg GDP 89-93

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