Discussion of
Credit Crunches and Credit Allocation in a Model of Entrepreneurship

by Marco Bassetto, Marco Cagetti, and Mariacristina De Nardi

Ali Shourideh

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Introduction

- Credit Crunch

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  - Key finding: Takes time for entrepreneurs to accumulate wealth

- My discussion:
  - Write down a much simplified version of the entrepreneurship model
  - Identifying key parameters to calibrate
  - Alternative calibration
  - Response of investment and consumption

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  - $z_t \in [0, \bar{z}]$; $z_t \sim F(z_t)$
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- Undiversified entrepreneurs: $\max \mathbb{E}_0 \sum_{t=0}^{\infty} \beta^t \log c_t$

- Workers: hand to mouth; inelastic labor supply

Simplified Model of Entrepreneurship

- Make my life easier: small open economy with interest rate r $\beta(1+r) < 1$

- Entrepreneur's optimization:

$$\max \quad \mathbb{E}_0 \sum_{t=0}^{\infty} \beta^t \log c_t$$

s.t.

$$c_t + a_{t+1} = (1+r)a_t + \max_{l_t, k_t \leq \lambda a_t} (z_t k_t)^{\alpha} l_t^{1-\alpha} - w l_t - (r+\delta)k_t$$

Simplified Model of Entrepreneurship

- Solve for Labor Demand by investors; profits net of depreciation and cost of capital

$$(\pi(w)z_t - r - \delta)k_t$$

- Demand for capital:
  - $k_t = \lambda a_t$ iff $\pi(w)z \geq r + \delta$
  - $k_t = 0$ otherwise.
  - cutoff: $\pi(w)z^* = r + \delta$

- log + constant returns to scale:

$$\begin{aligned} \text{savers}: \quad & a_{t+1} = \beta(1+r)a_t \\ \text{investors}: \quad & a_{t+1} = \beta\left(1 + r + \lambda(\pi(w)z_t - r - \delta)\right)a_t \end{aligned}$$

Steady State

- Total Assets remains constant - wages are pinned down

$$\beta(1+r) + \lambda \int_{z^*}^{\bar{z}} (\pi(w)z - r - \delta) dF(z) = 1$$

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Calibration

- Many more ingredients in the paper:
  - Decreasing return to scale
  - Corporate - (somewhat) diversified sector
  - Entry and Exit of entrepreneurs

- Key parameters: λ, $F(z)$

- Calibrate to cross-sectional evidence about entrepreneurs

- Main result: Takes time to recover independent of the source of shock

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- Alternative approach: calibrate to financial flows
  might help identify the type of shock (TFP vs financial)

Financial Flows

- Who uses external financing the most in the model?
  firms/entrepreneurs who switch from being savers to investors

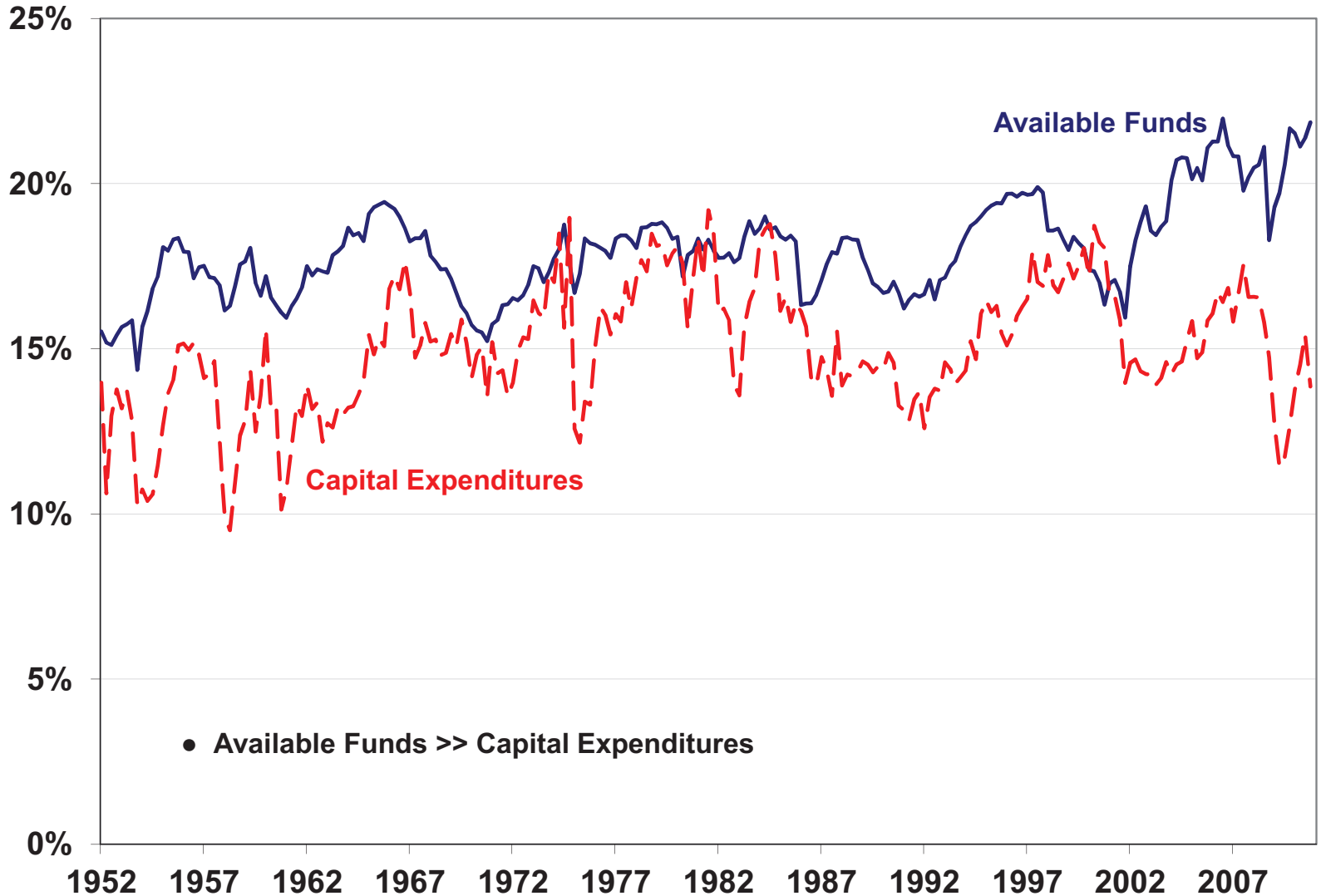
- Can define a measure of available funds and compare with investment:

$$\begin{aligned} AF_t &= y_t - wl_t - r(k_t - a_t) \\ X_t &= k_{t+1} - (1-\delta)k_t \end{aligned}$$

- $AF_t < X_t$: Financial Inflows
- $AF_t > X_t$: Financial Outflows

Financial Flows in the Aggregate

- U.S. Flow of Funds, 1952-2010



Financial Flows at the Firm Level

- Construct measures of inflows and outflows:

$$\text{Inflows} = \frac{1}{T}\sum_{t=1}^{T}\frac{\sum_i (X_{it} - AF_{it})\mathbf{1}_{[X_{it} \geq AF_{it}]}}{\sum_i X_{it}}$$

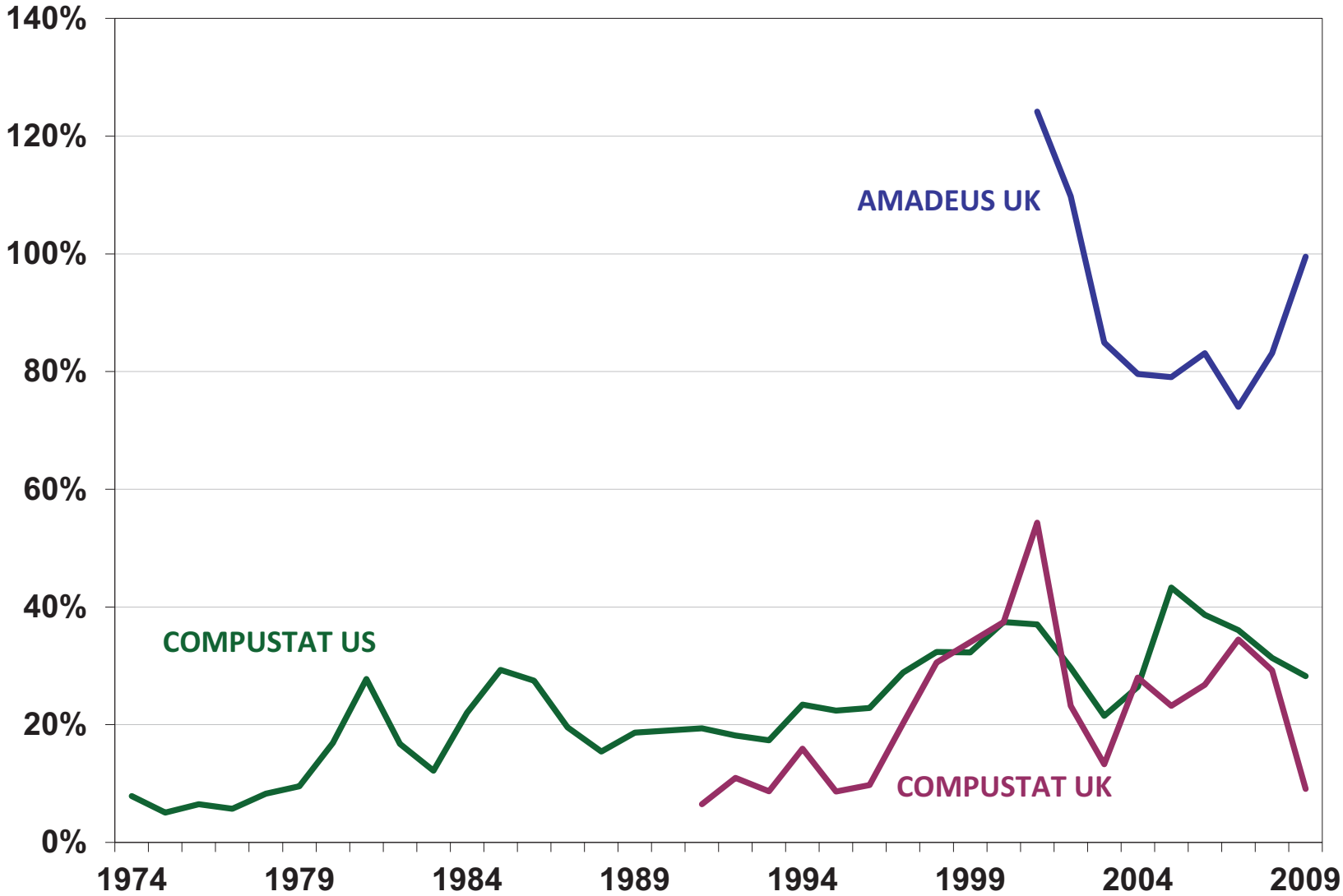
$$\text{Outflows} = \frac{1}{T}\sum_{t=1}^{T}\frac{\sum_i (AF_{it} - X_{it})\mathbf{1}_{[AF_{it} > X_{it}]}}{\sum_i X_{it}}$$

Large Heterogeneity in Net Financial Inflows

Sample	Obs	Inflows	Outflows
Amadeus UK (PRI)	980,000	.93	1.4
Compustat UK (PUB)	10,000	.20	.68
Compustat US (PUB)	51,000	.23	.45

Heterogeneity in Net Financial Flows

- Financial Inflows over time



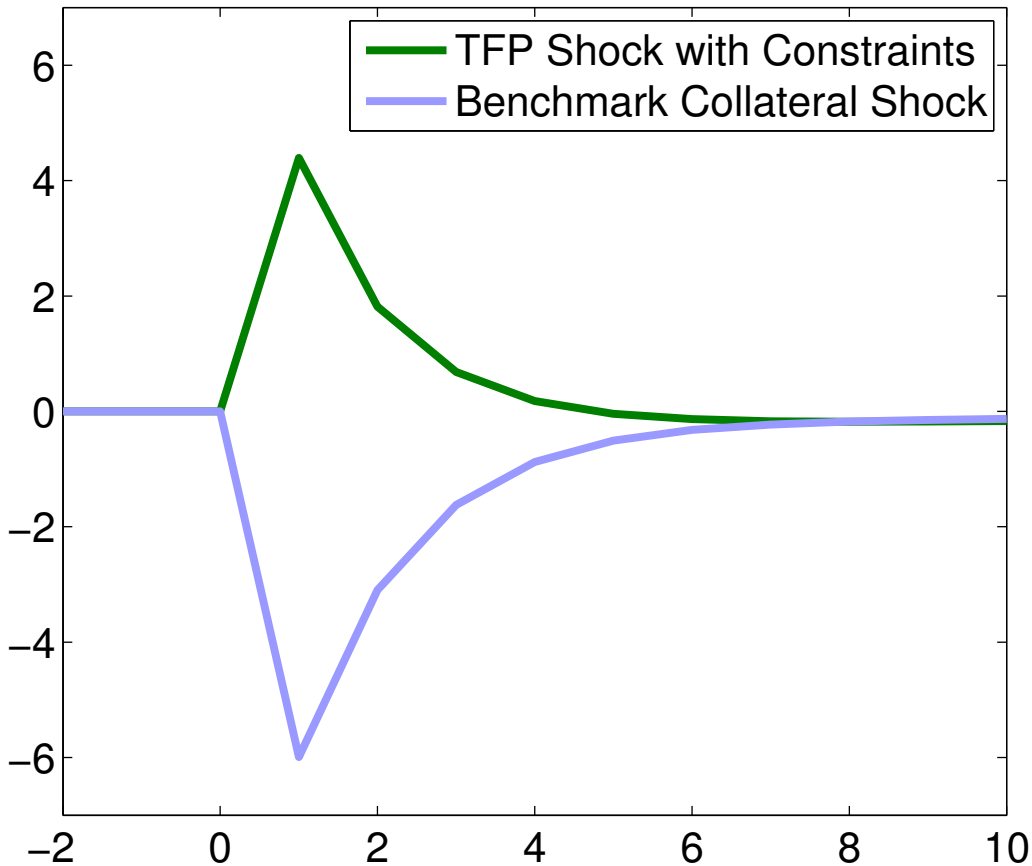
Financial Flows

- Calibration in Shourideh and Zetlin-Jones(2012): 0.2 is small; 0.93 is large

- In a model with both firms: 1 sd shock to Debt/Asset $\rightarrow$ 0.45% decline in GDP; Trade linkages makes it persistent

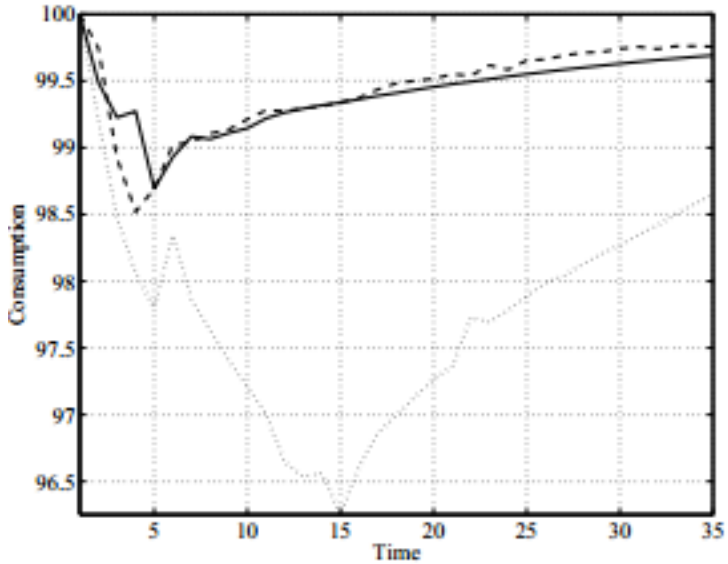
External Financing and Type of Shock

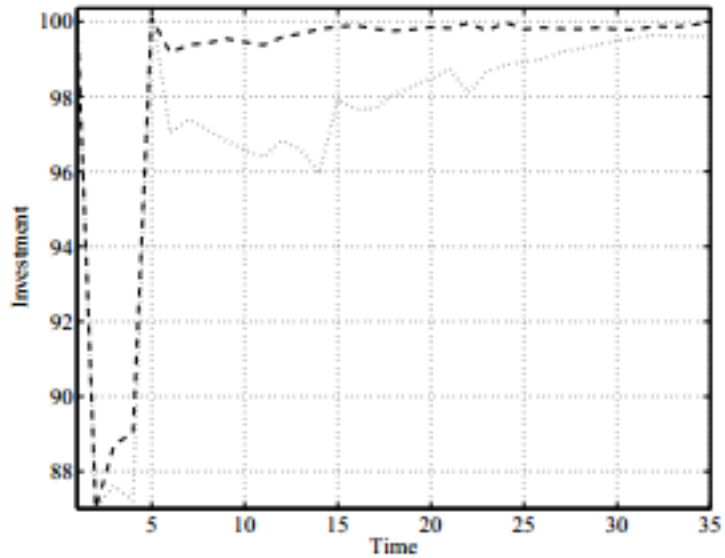
- Response of Ex-fin to shocks (TFP vs Financial)



Investment and the Great Recession

Response of Consumption and Investment





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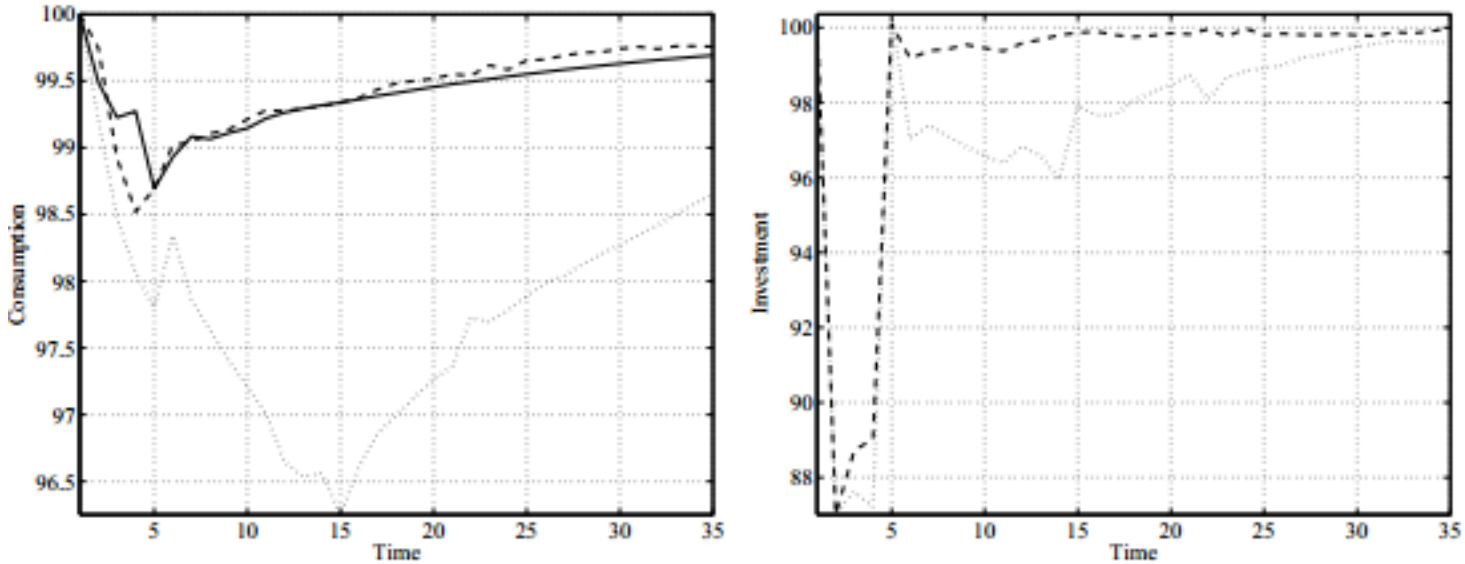

- Corporate sector is less affected by the shock - substitutes for the entrepreneurial sector

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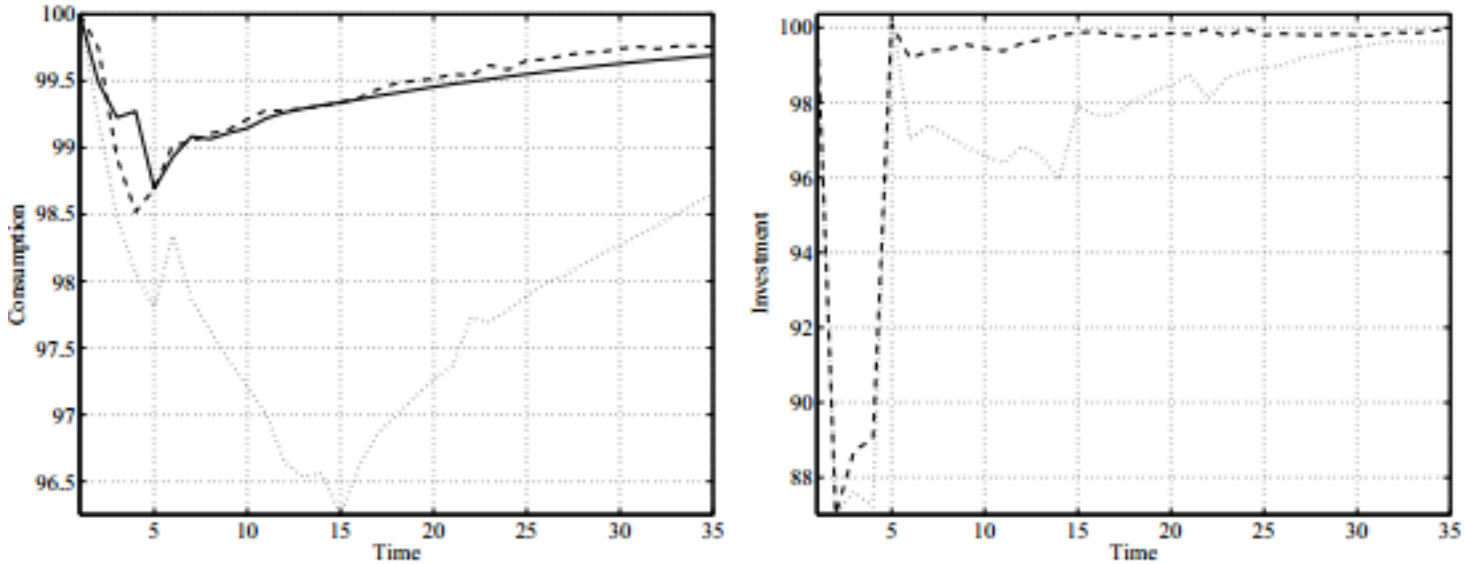

- Corporate sector is less affected by the shock - substitutes for the entrepreneurial sector
- Everyone wants to be an entrepreneur: consumption is very slow

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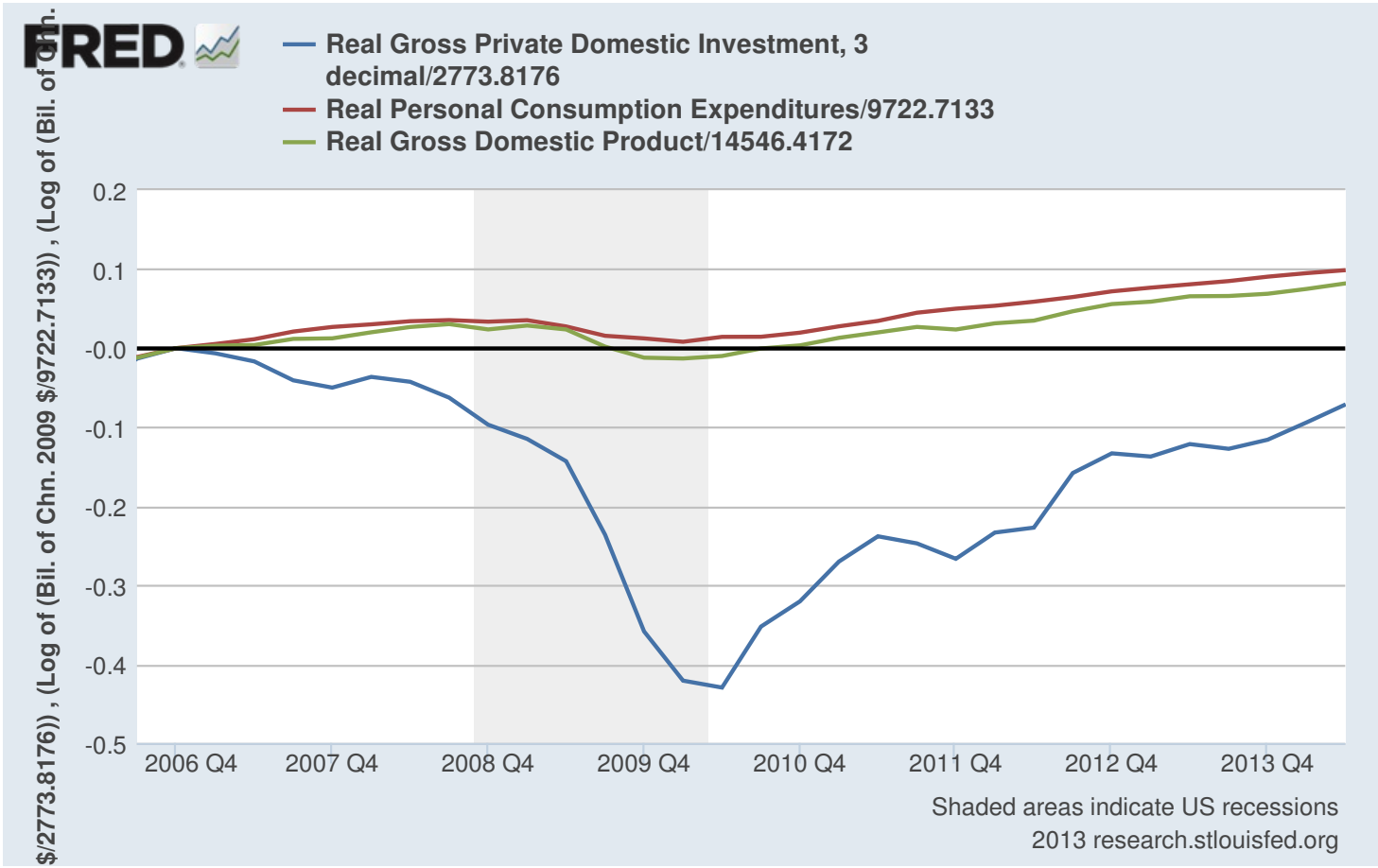


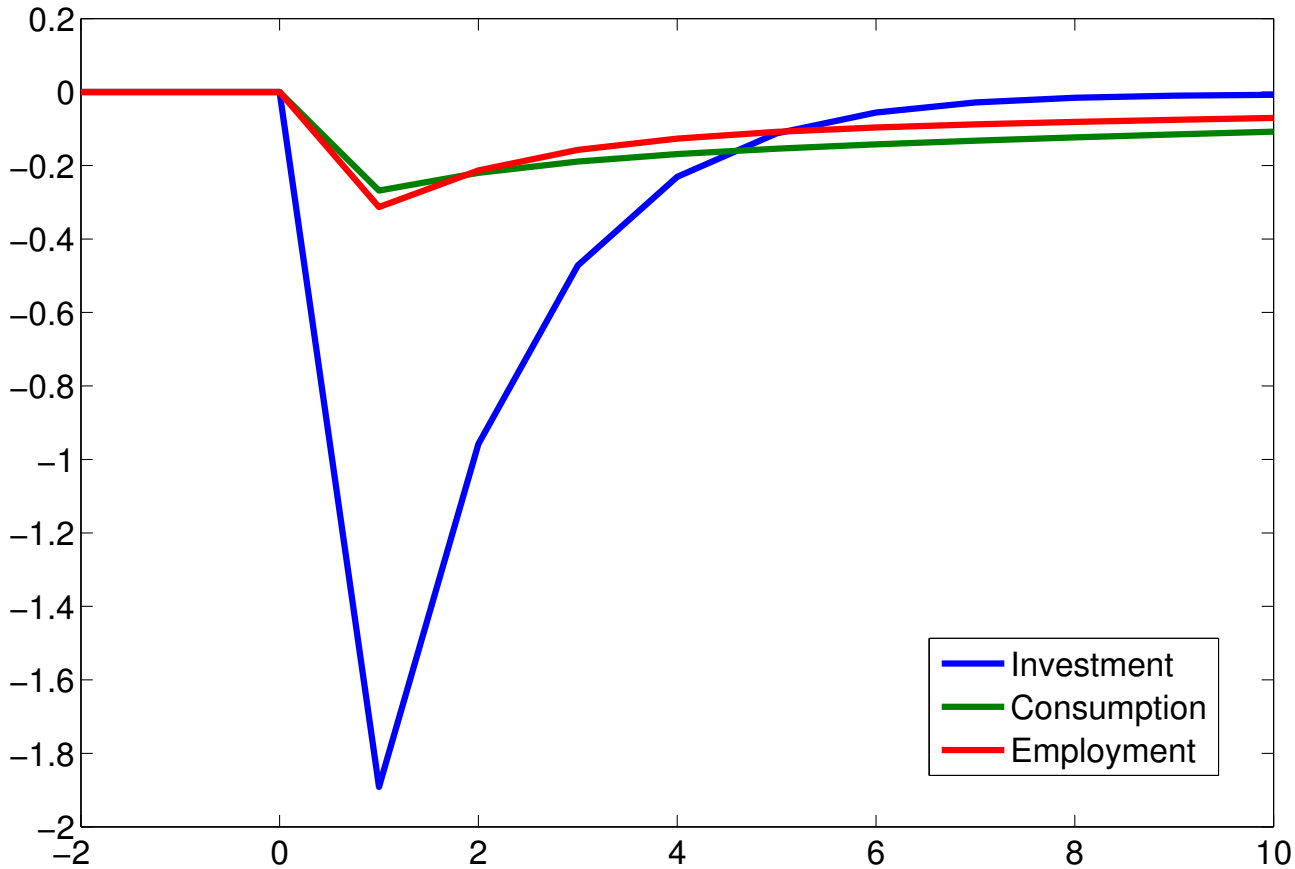
Response of Investment

Possible Explanations:

- Adjustment costs

- Trade linkages across the two sectors

Trade Linkages

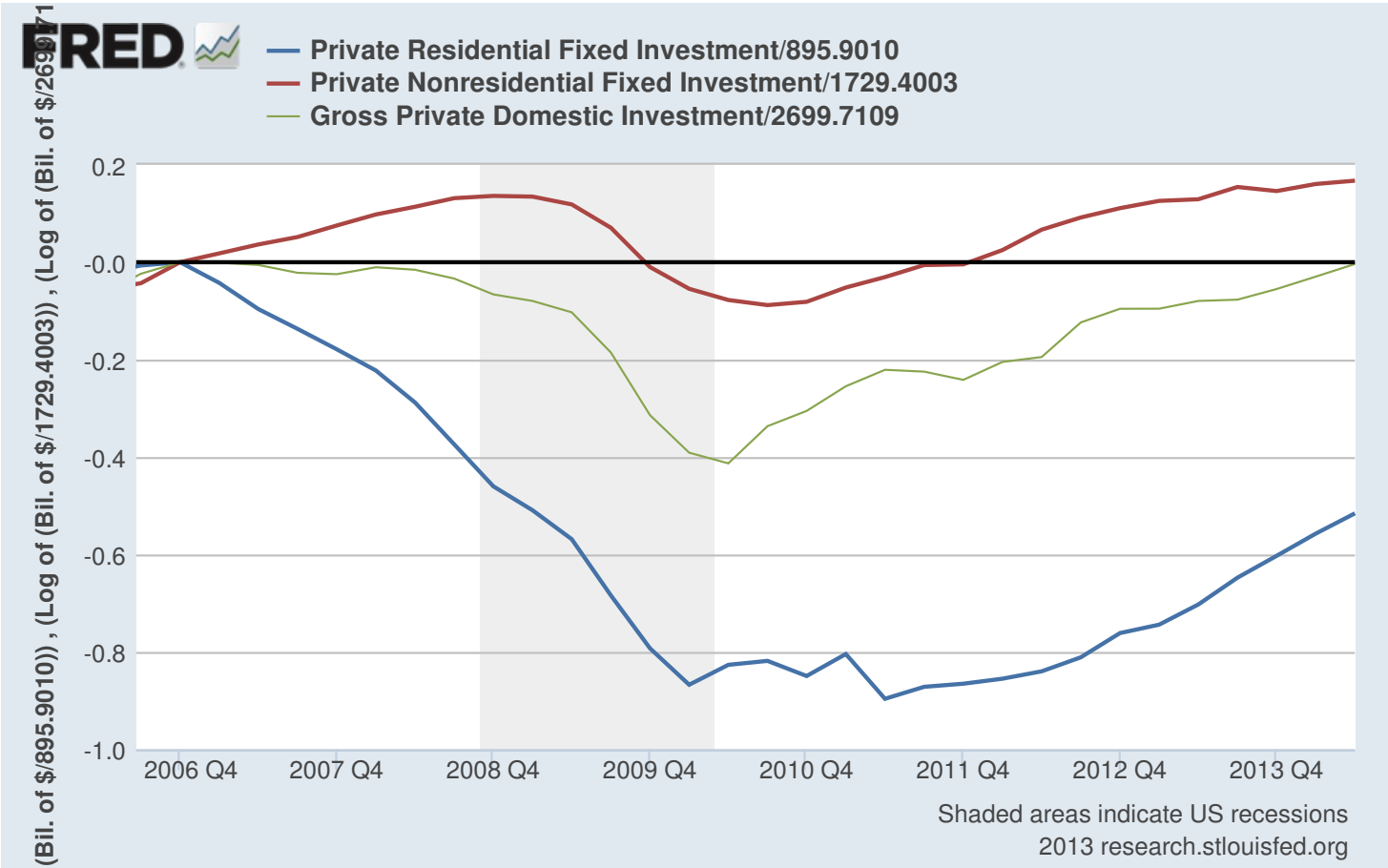


Response of Investment

Possible Explanations:

- Adjustment costs
- Trade linkages across the two sectors
- Credit friction on the side of households and spill-over to demand

Components of Investment in the Great Recession



Conclusion

- Important contribution in disciplining financial frictions models
- Recovery in investment is too fast
- Perhaps reallocation of funds across households are equally (or more) important in the great recession