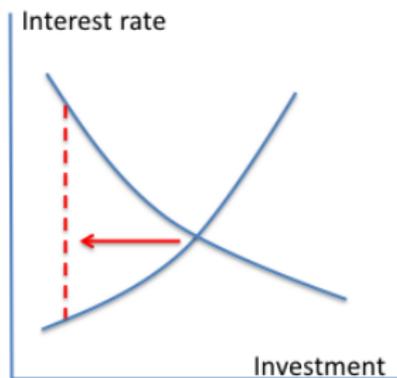# Comments on "Financial Shocks and Job Flows" by Neil Mehrotra and Dmitriy Sergeyev.

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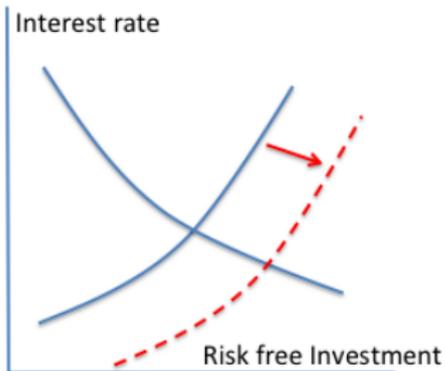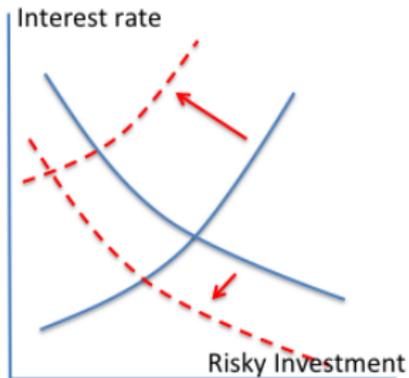
March 9, 2017

Credit frictions, discount rates, or...?

Paper (Part I only)

- Model calibrated to job creation/destruction observations
- Result: Decline in employment in Great Recession =
    - 15% financial friction shock χ;
    - 3% loss of firm value shock a_0;
    - 26% aggregate productivity shock A;
    - 58% discount rate shock ω.
- Implication: *Financial frictions don't matter for understanding the Great Recession*
- Questions:
    - What are these shocks?
    - How do you identify relative contributions of these 4 shocks from job creation and destruction?
    - (Some measure of statistical and model specification uncertainty?)

Basic Fact

Figure 1: US job flows

The figure shows aggregate US job flows for 2000Q1-2012Q4 from the Business Employment Dynamics.

Model

Model Firms

- Born randomly, with riskfree assets a. *Hire workers*.
- Rent capital from intermediaries.

$$\pi_{i,t} = Az_i \left(k_{i,t}^\alpha n_{i,t}^{1-\alpha} \right)^\phi - r_{k,t} k_{i,t} - w_t n_{i,t}$$

- Accumulate riskfree assets a.

$$\dot{a}_{i,t} = \pi_{i,t} + r a_{i,t}$$

- Randomly liquidated. Pay assets a to household owner *and fire all workers*.
- "Financial constraint" on rented capital. (Home depot)

$$k_{i,t} \leq \chi a_{i,t}$$

- "Constrained" firms are young, growing, born with too little a.
- Hire when born or growing, fire when contracting or liquidated.

Employment dynamics

Figure 3: Firm employment dynamics: comparative statics with respect to χ

Model

Model Firms

- ▶ Born randomly, with riskfree assets a. *Hire workers.*
- ▶ Rent capital from intermediaries.
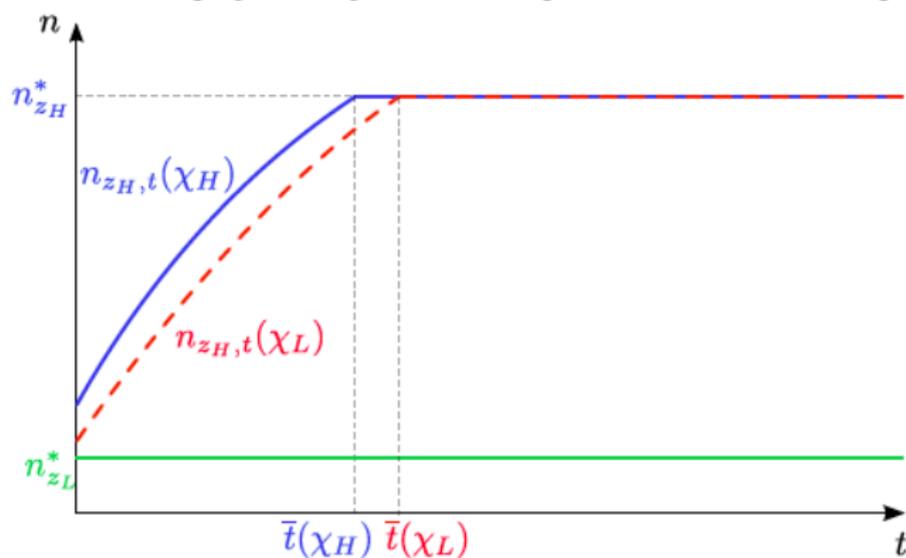- ▶ Accumulate riskfree assets a.
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$$k_{i,t} \leq \chi a_{i,t}$$

- ▶ "Constrained" firms are young, growing, born with too little a.
- ▶ Hire when born or growing, fire when contracting or liquidated.

The point:

- ▶ Financial constraint shock χ largely hits small, productive, growing firms. Reduces creation & increases destruction.
- ▶ Aggregate productivity shock A, discount rate shock r_k hit all, just increases destruction.
- ▶ Creation vs. destruction can tell us which shock hit.

Effect of shocks

Figure 5: Job flows transition paths with permanent financial and productivity shocks
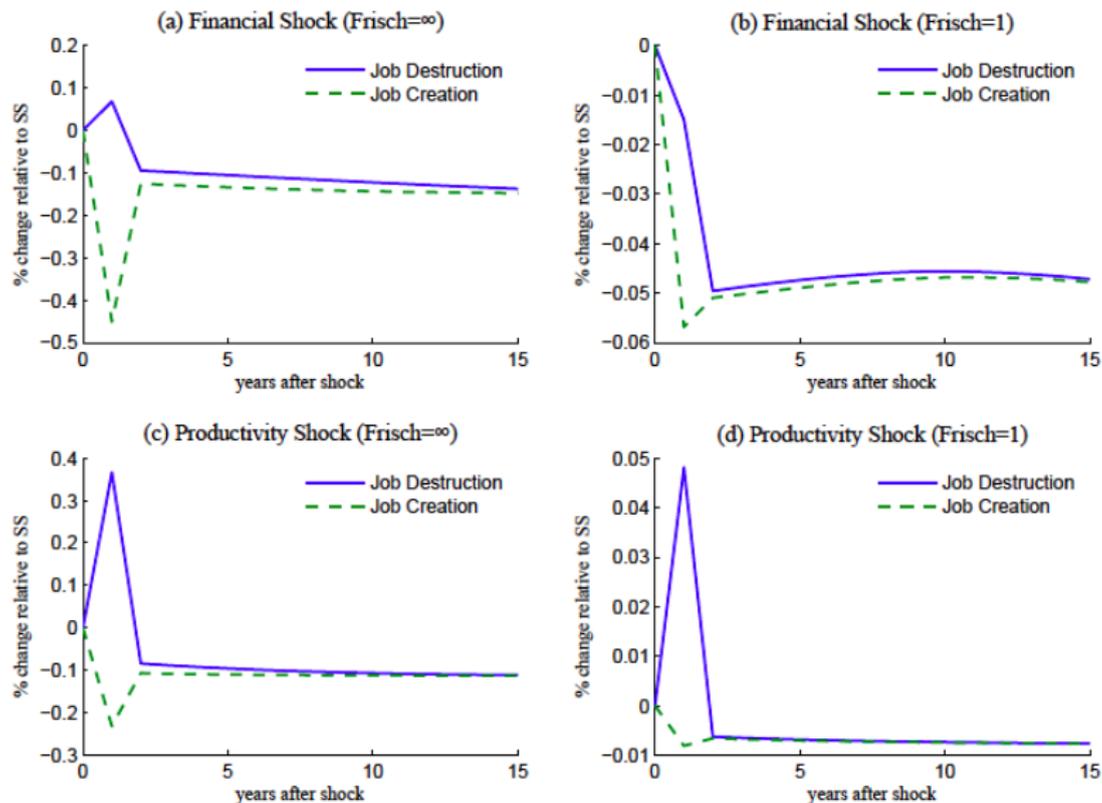
Whining

Real Firms

- Issue equity and *borrow* debt, not accumulate riskfree assets $= k$.
- k is collateral for $-a$, not the other way around.
- Get in trouble when they can't roll over short-term financing.
- Pay profits ongoing, not lump sum on liquidation.
- Shut down due to bad performance, not randomly.
- Hire and fire simultaneously. (Create and Destroy jobs).
- Recessions are neither A nor z_i – many but not all get bad "productivity" shock.
- Born with insufficient assets (Uber?)
- Small, new fast-growing firms not only financially constrained. (2008 in Reno, not Palo Alto).
- Grow substantially when not "financially constrained."

Does this matter? (Employment, frictions abstractions the most?)

Model: households and intermediaries

- Model Households

$$c_t + a_{t+1} = w_t + n_t + (1 + r)a_t + \Pi_t$$

- Intermediaries

$$r_{k,t} = r + \delta + \omega \leftarrow \text{discount rate shock}$$

  Hold no risk, send profits lump sum to households.

- Households invest only riskfree. No decision to start firms. No risk/return decision. Receive liquidation & intermediary profits Π lump sum.

- Does this matter? Is it a "discount rate" shock or an "intermediated capital" shock? (No?)

Model: shock calibration and simulation

> *we .. examine the effect of one-time unanticipated* and permanent *financial and aggregate productivity shocks ..(p. 15)*

Permanent?

> *Following the failure of Lehman Brothers in 2008, short-term credit markets including commercial paper experienced acute disruptions. However these markets normalized rapidly and are unlikely to account for the multiyear decline in job flows in which we are interested. A recent literature ... has drawn a distinction between the financial shocks we consider here and these shorter term liquidity shocks. (p. 14)*

So what's the answer?

> *We consider... a permanent 20% tightening of the collateral constraint ...* χ. *This tightening conforms to the magnitude of the drop experienced in US housing prices..*

What do house prices have to do with firm financing for all but the tiny non-vc startup? What is this permanent firm financial shock? Definition? Independent measurement? (Not just "well, they fired people so it must have hit.")

Model: calibration and simulation

> [We calibrate] the initial level of assets a_0 and the collateral constraint parameter χ... to best match the distribution of employment by firm age and size...97% of firms have less than 100 employees and 12% of firms are credit-constrained. Most constrained firms are small/medium-sized firms (91%) but the vast majority of small and medium-sized firms are financially unconstrained (89%).

▶ No financial information. Frictions lovers might say weak, model-dependent, far too small.

▶ With only 12% constrained, most small, no wonder constraints don't do much!

Bottom line

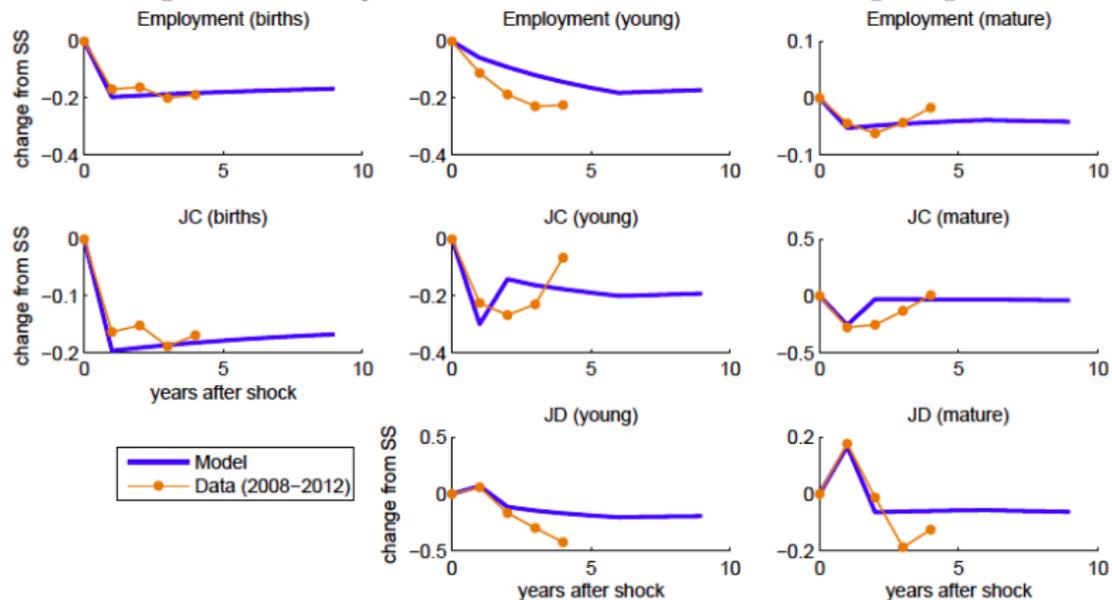Result: Decline in employment in Great Recession =

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How do you identify 4 shocks from 2 facts (creation, destruction)?

> *We nonlinearly estimate a financial, productivity, discount rate, and initial asset shock .. to best match initial changes in aggregate job flows* and job flows across firm age categories *in the Great Recession.*

Moments

Figure 7: Job flows paths in the model and in the data across firm age categories

Bottom line

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- ▶ Comment: leans a lot on dynamic structure of a simplified model.
- ▶ Job flows across age categories; no financial information → model → effect of constraints on employment.
- ▶ Good: This is what models are for!
- ▶ Question: Robust to simplifications/abstractions?