Discussion on "Firm Balance Sheet Channel of Uncertainty Shocks" by Wentao Zhou

Ding Dong
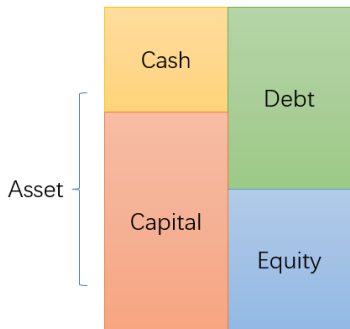
Hong Kong University of Science and Technology

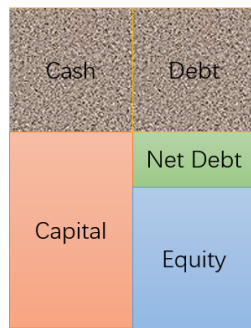AMES 2023, Beijing

Awesome paper!

- Uncertainty $\rightarrow$ firm-level responses $\rightarrow$ aggregate outcomes
  - freeze hiring (Leduc-Liu,16; Schaal,17;Ilut-Kehrig-Schneider,18)
  - cut intangible and physical investment (Bloom,07; Bachmann-Bayer,13)
  - increase cash and other liquidity (Bates, Kahle, & Stulz, 2009)
  - deleveraging process (Gilchrist et al., 14; Arellano et al., 19)

- This paper: a unified theory of "balance sheet" choice
  - incentive to hold cash + debt
  - important and enlightening work!

Question: cash = net debt?

Data & This Paper

Existing Work

Balance Sheet Channel

1. shrink in balance-sheet: asset ↓ + liability ↓
2. compositional change: capital → cash

Financial frictions in the economy

$$d = \underbrace{l(z, k, c, b) - (1 + r)b}_{\text{liquidity gap} \equiv m} - s(m) + (1 - \delta)k + b' - k' - c'$$

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2. collateral constraint: $(1 + r)b' \leq \theta(1 - \delta)k'$

3. debt adjustment cost (asymmetric):

$$R\left(b, b'\right) = \begin{cases} (1 - \eta)\left(b' - b\right) - rb, & \text{if } b' > b \\ b' - (1 + r)b, & \text{if } b' < b \end{cases}$$

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4. equity issuance cost (asymmetric):

$$\Phi(d) = 1_{d<0} \cdot \left(\kappa_0 + \frac{\kappa_1}{2}d^2\right)$$

Incentives for Cash holding

- Debt and equity issuance cost
  - high z' $\rightarrow$ target k'' $\uparrow$
  - $\rightarrow$ external finance: costly to issue d' or to raise b''
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  1. Costly debt roll-over: raise b' to cover $(1 + r)b$

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- Comment 2: Cost liquidity shortfall = two frictions at work
    1. Costly debt roll-over: raise b' to cover $(1 + r)b$
        - collateral constraint: no default risk
    2. Costly capital (downward) adjustment: cannot decrease k' to cover $(1 + r)b$

Other Incentives for Cash holding

- Adding a secondary capital market
  - large secondary market for capital, 1/4 of total investment $\sim$ Eisfeldt and Shi (18'); Cui, Wright and Zhu (23')
  - z dispersion $\uparrow \rightarrow$ "sales of property, plant and equipment" $\uparrow$
  - Oil-Hartman-Abel effect of uncertainty shock $\rightarrow$ *ex post* reallocation
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- Precautionary motive
  - exogenous discount factor: $\frac{1}{1+r} \rightarrow$ SDF
  - risk-neutral $\rightarrow$ risk-averse

Aggregate implication

- Comment3: Mechanism to generate output response not clear

$$y = z^{1-\nu} k^{\alpha} n^{\nu}$$

  1. z: unaffected today
  2. k: predetermined
  3. n: must decline, but why? (*n is more likely to increase*)

- How large is misallocation in the model ?

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- Comment 4: Co-movement (after adding household sector)

$$\hat{Y} \equiv F(\hat{A}, \hat{K}, \hat{N}) = \alpha \hat{C} + \beta \hat{I}, \quad \alpha, \beta > 0$$

  1. $\hat{K} = 0$: predetermined
  2. $\hat{N} \geq 0$: precautionary labor supply
  3. $\hat{A}$: must decline to generate co-movement in Y_t, C_t and I_t

- How large is misallocation in the model ?

Summary

- Great paper with clear goal, complete structure, well-crafted model, serious implementation !

- Great example of micro-to-macro approach with tight linkage b/w data and model !

- Great pleasure to read and discuss this paper by someone sharing similar research interest with me !

- Great job market candidate I will recommend to every potential employer !