Corporate Saving in Global Rebalancing

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Overview

Paper’s main insights:

▶ Financially constrained firms hoard liquid assets to fund working capital (i.e., wage bill)
▶ Financial constraints and investment opportunities differ in emerging/developed countries
▶ Asymmetries create corporate net savings patterns, which imply:
  ▶ Global imbalances/rebalances across countries arising from corporate sector
    (i.e.: Chinese firms finance US firms)
  ▶ New mechanisms of international transmission and spillover effects
  ▶ New forces behind cross-country comovement

Outline of discussion:

▶ Overview of model’s central ingredients and equilibrium conditions
▶ A quick data consistency check
▶ Suggestions
Model Setup

- \(\infty\)-lived entrepreneurs; 2T-projects; perfect foresight environment

- At \(t\): Make capital (\(K_{t+1}\)), consumption (\(c_t\)), and savings (\(A_{t+1}\)) choices

- At \(t + 1\): Finance wage bill (\(w_{t+1} \cdot l_{t+1}\)) with savings and loans (\(L_{t+2}\)); consume (\(c_{t+1}\))

- At \(t + 2\): Output: \(Y_{t+1} = F(K_{t+1}, Z_{t+1} \cdot l_{t+1})\); pay loan; consume; new projects...

- Entrepreneur’s problem:

\[
\max \sum \beta^{t+s} u(c_s), \quad \text{s.t.}
\]

\[
Y_{t-1} - r_t \cdot L_t = c_t + K_{t+1} + A_{t+1}
\]

(BC period t)

\[
r_{t+1} \cdot A_{t+1} = c_{t+1} + w_{t+1} \cdot l_{t+1} - L_{t+2}
\]

(BC period t+1)

\[
r_{t+2} \cdot L_{t+2} \leq \phi \cdot Y_{t+1} \quad (\phi < \phi^*)
\]

(Collateral C period t+1)

- Equilibrium conditions:

\[
K_{t+1} + \frac{w_{t+1} l_{t+1}}{r_{t+1}} = \beta^2 W_t + \phi \frac{Y_{t+1}}{r_{t+1} r_{t+2}} \quad \text{(PV inputs = S + PV loans)}
\]

\[
l_{t+1}^d = \left( \frac{1 - \alpha}{\alpha} \frac{r_{t+1}}{w} K_{t+1} \right)^{\eta+1} = l_{t+1}^s = (w_{t+1}/\overline{w})^\eta \quad \text{(Labor mkt. eq.)}
\]

\[
B_{t+1} = A_{t+1} - L_{t+1}; \quad B_{t+1}^* = A_{t+1}^* - L_{t+1}^*; \quad B_{t+1} + B_{t+1}^* = 0 \quad \text{(Bond mkt. equilibrium)}
\]
Key result: novel spillover effects

**Shock 1:** Growth slowdown developed country (\(Z^*\) declines 1% form 10 periods)

- Effect developed: lowers \(Y^*\), tightens credit constraint
  - Borrow, invest, and hire less
  - Net bond demand \(B^*\) increases (less negative); CA improves; \(r\) decreases.

- Effect emerging: 3 forces
  - Substitution: fall in \(r\) increases \(K\), lowers \(l\)
  - Liquidity: fall in \(r\) reduces return on savings \(A\), increasing labor cost
  - Collateral: borrowing constraints loosens
  - In benchmark calibration, \(Y\) falls

**Shock 2:** Growth slowdown emerging country (\(Z\) declines 1% form 10 periods)

- Effect emerging: Lower \(Y\), \(l\), \(K\)
  - Lower liquidity needs reduce savings \(A\). Net bond demand \(B\) falls; \(r\) increases.

- Effect developed:
  - Higher \(r\) lowers \(K^*\), \(l^*\), \(Y^*\); CA improves
Assessment of results: 1

Central idea of the paper is new...

- Collateral constraints are central in macro-finance models of fluctuations
- That they can lead to higher corporate liquid balances is perhaps less appreciated
- **Contribution of paper:** in the aggregate, can explain global imbalances/rebalances

...and its policy implications potentially important

- Lower MP rates are assumed stimulate domestic economy
- ...and its spillover impact on other economies generally assumed to be expansive
- **This paper offers a digression:** beware of effect on credit-constraint economies
Assessment of results: 2

Let developed = US; emerging = China

- Q1: are Chinese firms more financially constrained than US firms?
- Poncet et al. (2010): test financial constraints with investment-cash flow regressions
  - Private firms (36% of sample) appear credit constrained
  - State owned + collective owned + foreign firms (64% sample) are NOT


A. Regression results (dep variable: Investment over lagged assets)

<table>
<thead>
<tr>
<th></th>
<th>Private Firms</th>
<th>State owned</th>
<th>Foreign</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash-flow/assets (lagged)</td>
<td><strong>0.134</strong>*</td>
<td><strong>0.09</strong></td>
<td>-0.019</td>
</tr>
<tr>
<td></td>
<td>(0.025)</td>
<td>(0.087)</td>
<td>(0.033)</td>
</tr>
</tbody>
</table>

B. Mean summary statistics

<table>
<thead>
<tr>
<th></th>
<th>Private Firms</th>
<th>State owned</th>
<th>Foreign</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number in sample</td>
<td>5,669</td>
<td>2,357</td>
<td>5,301</td>
</tr>
<tr>
<td>Assets</td>
<td>1,273,416</td>
<td>3,461,728</td>
<td>699,955</td>
</tr>
<tr>
<td>Employment</td>
<td>1,829</td>
<td>4,623</td>
<td>1,367</td>
</tr>
<tr>
<td>Investment/capital</td>
<td>0.086</td>
<td>0.075</td>
<td>0.063</td>
</tr>
<tr>
<td>Cash flow/capital</td>
<td>0.069</td>
<td>0.051</td>
<td>0.109</td>
</tr>
<tr>
<td>Asset-weighted participation</td>
<td><strong>0.36</strong></td>
<td><strong>0.46</strong></td>
<td><strong>0.18</strong></td>
</tr>
</tbody>
</table>
Assessment of results: 3

- Q2: are Chinese firms net savers?
- Bayoumi et al. (2012):
  - while CS rates are higher in China, NET saving rates \((S_{t+1} - K_{t+1} = B_{t+1})\) are negative
Suggestions

- **Model:** Does uncertainty play any role in model?
  - It appears that model is solved assuming perfect foresight
  - But then, are the shocks anticipated?
  - Probably not a crucial point, but worth clarifying

- **Data:** Which countries’ corporate sectors are net savers?
  - Study macro and micro (firm level) data in emerging/developed countries more closely