Comments on Patrick Pintus’
Procyclical International Capital Flows, Debt Overhang and Volatility

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The paper

- Interesting and well-executed paper

- Studies the implications of the procyclicality of capital flows for:
  - Equilibrium determinacy
  - Output and consumption volatility
  - Welfare
Model

\[ \text{Max} \int_0^\infty e^{-\rho t} \frac{C(t)^{1 - \theta} - 1}{1 - \theta} dt \]

s.t. \[
\dot{H} + \dot{K} - \dot{D} = wL + (R_K - \delta)K + (R_H - \delta)K - rD - C
\]

\[ D = \lambda K \]

\( \lambda > 0 \) is the credit multiplier
Main Findings

- Countries with high debt-GDP ratios are prone to boom-bust episodes and sunspot equilibria

- These economies also exhibit large consumption and output volatility

- Consumption allocations in these economies are Pareto dominated by those prevailing in "stable" economies
Comments

• Assumptions
  – Procyclicality of capital flows
  – Binding borrowing constraint
  – Use of human capital as collateral

• Predictions
Assumptions: Procyclicality of capital flows

- How procyclical are capital flows?

In the model: binding borrowing constraint + linearization imply that the correlation between output and capital inflows is 1.

However, evidence reported by Kaminsky et al. (2004) suggests that the correlation between output and net capital inflows is rather weak (especially for low and middle-income countries).
Correlations between the Cyclical Components of Net Capital Inflows and Real GDP

<table>
<thead>
<tr>
<th>Countries</th>
<th>Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HP Filter</td>
</tr>
<tr>
<td>OECD</td>
<td>0.30*</td>
</tr>
<tr>
<td>Middle-High Income</td>
<td>0.35*</td>
</tr>
<tr>
<td>Middle-Low Income</td>
<td>0.24*</td>
</tr>
<tr>
<td>Low Income</td>
<td>0.16*</td>
</tr>
</tbody>
</table>

Note: An asterisk denotes statistical significance at the 10 percent level.
Sources: IMF, *International Financial Statistics* and *World Economic Outlook*. 
Assumptions: Binding borrowing constraint

• What do large values of $\lambda$ mean?
  
  – Large debt burden
  
  – Low level of financial development (small fraction of self-financed investment)
  
  – High financial integration
  
  – Easy access to international capital markets

Is it good or bad to have a large $\lambda$?
Assumptions: Binding borrowing constraint

- In countries with large values of $\lambda$,
  - It is more likely that debt overhang leads to under-investment
  - Consumption allocations are Pareto dominated

These results are counter-intuitive if we think of these countries as being less credit-constrained than those with smaller values of $\lambda$
Assumptions: Use of human capital as collateral

- Extension of the model: Use of human capital as collateral
  - Human capital is not easily repossessed or monitored
  - Hard to find real-world examples where human capital is used as collateral
Predictions

• Testable implication of the model: countries with large debt-GDP ratios should display high consumption and output volatility
Relationship between debt to output ratio and output volatility

0.020
0.025
0.030
0.035
0.040
0.045
0.050
0.055
0.060
0.065

0
30
60
90
120
150
180
210

Debt to output ratio (%)

Output volatility
Predictions

- What do the data say:

<table>
<thead>
<tr>
<th>$\text{Corr} \left( \frac{D}{Y}, \sigma_c \right)$</th>
<th>$\text{Corr} \left( \frac{D}{Y}, \sigma_y \right)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.41</td>
<td>0.39</td>
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</table>

⇒ The model is consistent with the data along this dimension