**Introduction**

- In a globally interconnected banking system, there can be spillovers from domestic macroprudential policies to foreign banks and vice-versa.
- The lack of reciprocity of some macroprudential instruments may result in an increase in bank flows to countries with lower regulatory levels.
- This may decrease the effectiveness of macroprudential policies in the pursuit of global financial stability.

**Research Questions**

- How do macroprudential policies change the composition of debt between domestic and foreign?
- How does the lack of reciprocity affect welfare and financial stability?
- What is the optimal macroprudential policy that maximizes welfare?

**Model Overview**

- Two-country DSGE with entrepreneurs (borrowers) and households (savers).
- Collateral constraints for entrepreneurs.
- Entrepreneurs choose whether to borrow from domestic or foreign households.
- ALPHA is the share of borrowing which is pledged to domestic lenders.
- In the steady state, ALPHA will be positively related to the domestic LTV (mH) and inversely related to the foreign LTV (mF).

*Figure: Steady state value of alpha for different domestic and foreign LTVs.*

- Dynamically, under a benchmark calibration, a domestic technology shock makes the proportion of domestic borrowing increase.

**Macropolicy**

- Countercyclical rule on the LTV (m) responding to house prices (q)

\[ m = m_{SS} \cdot \alpha(q) \]

- NO RECIPROCITY: The rule applied only to domestic LTV (mH) -> \( \phi_f = 0 \)
- RECIPROCITY: The rule applied to domestic LTV (mH) and foreign LTV (mF)

**Results**

**Optimal MPru Policy**

<table>
<thead>
<tr>
<th>( \phi_h^* )</th>
<th>( \phi_f^* )</th>
<th>( \text{stdev(b)} )</th>
<th>Welfare gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.5</td>
<td>0.2</td>
<td>0.102</td>
<td>1.32</td>
</tr>
</tbody>
</table>

**Financial Stability and Welfare**

<table>
<thead>
<tr>
<th>( \phi_h )</th>
<th>( \phi_f )</th>
<th>( \text{stdev(b)} )</th>
<th>Welfare gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>No MPru (Benchmark)</td>
<td>6.90</td>
<td>0.101</td>
<td>5.16</td>
</tr>
<tr>
<td>MPru No Reciprocity</td>
<td>5.48</td>
<td>0.106</td>
<td>3.818</td>
</tr>
<tr>
<td>MPru Optimal</td>
<td>1.45</td>
<td>0.011</td>
<td>0.104</td>
</tr>
</tbody>
</table>

- Non reciprocity in macroprudential policies can partly "undo" their purpose of achieving financial stability and high welfare.

**Conclusions**

- DSGE model with domestic and foreign lending.
- Borrowing tends to migrate to the less regulated country.
- When macroprudential policies are applied just to domestic borrowing, financial stability and welfare increase but not as much as if foreign branches are also regulated (reciprocity).
- Optimal macroprudential policy involves regulating both domestic and foreign banks.
- In order to enhance the effectiveness of macroprudential policies and achieve its goal of global financial stability, reciprocity is desirable.

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**Figure: Impulse-Responses to a Domestic Productivity Shock**

**Figure:** Output, Domestic Borrowing, Foreign Borrowing, Mortgaged Houses, House Prices, periods.