Discussion of ”Liquidity Regulation and Unintended Financial Transformation in China” by Kinda Hachem and Zheng Michael Song

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October 3, 2017
Conference on China’s Financial Markets and Growth Rebalancing
Paper Overview

- Objective: Trace the origins of China’s growth in WMP to stricter liquidity regulation enforcement.

To do this the paper...

1. Gives regulatory background on the Chinese financial sector and rules out capital requirements and deposit rate regulation.
2. Presents model with *cross-sectional* prediction: banks more subject to liquidity regulation issue more off-balance sheet WMP.
3. Tests prediction using bank-level data late 2000s and early 2010s, presents further evidence and discusses alternative explanations (fiscal and monetary policy).
My comments

1. Size of WMP with respect to total shadow banking sector in China.
2. Match between data and model.
3. Comments to empirical part.
4. Other issues.
1. WMP with respect to Total Shadow Banking Sector

- Estimates of overall size of shadow banking sector point to 43% of GDP in 2013. Other estimates are higher: 80 or even 120% of GDP (Financial Stability Board). All cited in Elliott, Kroeber and Yu (2015).
- Using first estimate, WMP would be about half of shadow banking.
1. WMP with respect to Total Shadow Banking Sector

- Estimates of overall size of shadow banking sector point to 43% of GDP in 2013. Other estimates are higher: 80 or even 120% of GDP (Financial Stability Board). All cited in Elliott, Kroeber and Yu (2015).
- Using first estimate, WMP would be about half of shadow banking.
- Fastest growing between 2007-2014.
- I think paper talks about growth. Somewhat less clear in alternative explanations’ section.
2. Match between model and data

- “Reserve requirement is a narrower type of liquidity regulation than loan-to-deposit cap because, unlike the latter, reserve requirements specify the form in which liquidity must be held.” (Section 2.2.2. in paper).
- Model’s liquidity regulation is a reserve requirement:

\[ R_j \geq \alpha (X(\xi_j) - S_j) \]  (1)

where \( R_j \) are reserves, \( X(\xi_j) \) are on-balance sheet savings, and \( S_j \) diverted savings off-balance sheet.
- Diverting makes (1) slacker. Less need for reserves.
2. Why not introduce a Loan-to-Deposit Ratio?

- Could use something more similar to a collateral constraint:

\[ L_j - A_j \leq \alpha(X_j - S_j) \]  \hspace{1cm} (2)

where \( L_j \) and \( X_j \) are total loans and savings attracted. \( A_j \) and \( S_j \) are assets and liabilities off-balance sheet.

- More constrained banks would still divert more savings, making (2) slacker.
2. Why not introduce a Loan-to-Deposit Ratio?

- Could use something more similar to a collateral constraint:

\[ L_j - A_j \leq \alpha(X_j - S_j) \quad (2) \]

where \( L_j \) and \( X_j \) are total loans and savings attracted. \( A_j \) and \( S_j \) are assets and liabilities off-balance sheet.

- More constrained banks would still divert more savings, making (2) slacker.

- Interest rate differential between \( L_j \) and \( A_j \) would come to forefront. Heterogeneity on this differential would make interpretations on relative interest rate with respect to holding reserves unnecessary.
3. Comments to Empirical Section

- Convincing case of using *average* loan-to-deposit holdings.
- Regulated ratio absorbed by bank fixed effects. No time variability between 2008 and 2009. Suggests banks were hitting regulated ratios, but still engaging in “window-dressing”.

Table 1:
Non-Guaranteed WMP Issuance

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDR</td>
<td>8.793***</td>
<td>9.764***</td>
<td>8.815**</td>
<td>2.720*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.719)</td>
<td>(2.623)</td>
<td>(3.283)</td>
<td>(1.381)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maturity</td>
<td>-0.145***</td>
<td>-0.138***</td>
<td>-0.181***</td>
<td>-0.045</td>
<td>-0.136***</td>
<td>-0.184***</td>
</tr>
<tr>
<td></td>
<td>(0.016)</td>
<td>(0.018)</td>
<td>(0.042)</td>
<td>(0.045)</td>
<td>(0.022)</td>
<td>(0.052)</td>
</tr>
<tr>
<td>MinROR</td>
<td>-0.171</td>
<td>-0.135</td>
<td>-0.108</td>
<td>-0.171</td>
<td>-0.127</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.105)</td>
<td>(0.082)</td>
<td>(0.089)</td>
<td>(0.097)</td>
<td>(0.099)</td>
<td></td>
</tr>
<tr>
<td>WinDress</td>
<td>6.907*</td>
<td>6.179*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3.583)</td>
<td>(2.938)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RegRatio</td>
<td>10.676***</td>
<td>8.175</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.491)</td>
<td>(5.874)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Observations 41 31 31 79 31 31
Year Dummies ✓ ✓ ✓ ✓ ✓ ✓
Bank Dummies × × ✓ ✓ × ✓
R-squared 0.583 0.654 0.965 0.793 0.658 0.963

Notes: The dependent variable is the log of the total number of non-guaranteed WMPs issued by a bank in a year scaled by the average balance of deposits at the bank in that year. LDR is the loan-to-deposit ratio based on average balances of a bank in a year. Maturity and MinROR are respectively the average maturity and expected return floor on non-guaranteed WMPs issued by a bank in a year. WinDress is the percent difference between the average balance and year-end loan-to-deposit ratios of a bank in a year. RegRatio is the year-end ratio of a bank in a year. In all columns except (4), the sample period is 2008-2010. In column (4), the sample period is 2008-2014. Standard errors, clustered at the bank level, are in parentheses. ***p<0.01, **p<0.05, *p<0.1
3. Comments to Empirical Section

- Comment on size: 1% increase in LDR implies an 8% increase in WMP/deposits. Large effect. (?)
- Choice of dependent variable: WMP/Deposits. Possible positive association if loans/deposits increase due to a drop in deposits.
- Inclusion of monetary policy and fiscal policy measures as control variables to limit concerns about competing explanations?
  - Monetary policy should be easy. Measure of money growth.
  - Fiscal policy, given local channel of stimulus, any within province variability to be exploited? Province instead of bank FE?
4. Other comments/open questions

- Do WMP have any exposure to real estate (directly or indirectly)? Regulation in 2011 limited exposure to real estate to 35% (MGI Report). Timing is close to stricter enforcement of loan-to-deposit ratio. Probably limited concern. Maybe future work?

- Role of government’s implicit guarantee of WMP. Interesting ex post optimal policy considerations and possible moral hazard ex ante?

- Role the lack of international saving vehicles for Chinese savers play in WMP growth.
• Interesting and well-executed paper about the origins of the growth in the shadow banking sector in China.
• Learnt a lot about Chinese financial sector regulation and about shadow banking in China.
• Clear model with clean (and intuitive!) prediction which is then brought to the data.
• Useful insights on how to approach a sector that by definition is opaque. Among others, window-dressing, average instead of end-of-period balances, looking at maturity.
### Exhibit 42

**China’s shadow banking sector provides credit from four major sources**

<table>
<thead>
<tr>
<th>Type of non-bank lending</th>
<th>Debt balance 2Q14 $ trillion</th>
<th>Credit growth 2007–2Q14 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wealth management products</td>
<td>1.7</td>
<td>86</td>
</tr>
<tr>
<td>Entrusted loans</td>
<td>1.6</td>
<td>38</td>
</tr>
<tr>
<td>Trust loans</td>
<td>0.8</td>
<td>59</td>
</tr>
<tr>
<td>Financing companies and other loans¹</td>
<td>2.4</td>
<td>23</td>
</tr>
</tbody>
</table>

¹ Includes loans from world co-operatives, microcredit institutions, Internet peer-to-peer lending, and informal loans.

**SOURCE:** People’s Bank of China; expert interviews; McKinsey Global Institute analysis

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**Figure:** China’s Shadow Banking Sector. Source: Debt and (not much) Deleveraging. MGI Report. February 2015.