Repo Market Effects of the Term Securities Lending Facility

Discussion by

Lasse H. Pedersen

NYU, CEPR, NBER
The Repo Market

- **Treasury**
  - Haircut: $m_{^\text{Treasury}}$
  - Repo rate: $repo_{^\text{Treasury}}$
- **Cash**
- **Other security**
  - Haircut: $m_{^\text{other}}$
  - Repo rate: $repo_{^\text{other}}$

- **Bank**
- **Lender**
Illiquidity in the Repo Market

Funding liquidity problem:

\[ \text{repo}^{\text{other}} \gg \text{repo}^{\text{Treasury}} \text{ and } \text{m}^{\text{other}} \gg \text{m}^{\text{Treasury}} \]
Term Securities Lending Facility (TSLF) and the Repo Market

Federal Reserve  \[\text{TSLF}\]  Bank

Treasury  
Other security  
Cash

Lender

Haircut: \(m_{\text{Treasury}}\)
Repo rate: \(r_{\text{Treasury}}\)

Haircut: \(m_{\text{other}}\)
Repo rate: \(r_{\text{other}}\)

Funding liquidity problem:

\(r_{\text{other}} \gg r_{\text{Treasury}}\) and \(m_{\text{other}} \gg m_{\text{Treasury}}\)
Hypotheses

Funding liquidity problem:

\[ \text{repo}^{\text{other}} \gg \text{repo}^{\text{Treasury}} \quad \text{and} \quad m^{\text{other}} \gg m^{\text{Treasury}} \]

This paper’s hypotheses on the effect of TSLF:

H1) \text{repo}^{\text{Treasury}} \text{ goes up?}
H3) \text{repo}^{\text{other}} \text{ goes down?}
H2) \text{repo}^{\text{other}} - \text{repo}^{\text{Treasury}} \text{ goes down?}
Schedule 1: other security = agency debt securities, agency MBS

Schedule 2: other security = above + other investment grade securities (CMBS, CMO, ABS, etc.)

Funding liquidity problem:

repo^other >> repo^Treasury and m^other >> m^Treasury

This paper’s hypotheses on the effect of TSLF:

H1) repo^Treasury goes up?
H3) repo^other goes down?
H2) repo^other – repo^Treasury goes down?
H4) weird stuff: repo^Agency and schedule 2 auctions…?
H5) repo^other goes down more for worse collateral?
H6) Effects are stronger during times of more illiquidity?
### Table 2: TSLF Effects on Repo Rates and Spreads

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Treasury Rate</th>
<th>Agency Rate</th>
<th>Agency MBS Rate</th>
<th>Agency Spread</th>
<th>Agency MBS Spread</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-1.03</td>
<td>-1.06</td>
<td>-0.90</td>
<td>-0.03</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>(1.94)</td>
<td>(1.54)</td>
<td>(1.54)</td>
<td>(1.85)</td>
<td>(2.02)</td>
</tr>
<tr>
<td>TSLF</td>
<td>0.97***</td>
<td>0.66***</td>
<td>0.43***</td>
<td>-0.31*</td>
<td>-0.54***</td>
</tr>
<tr>
<td></td>
<td>(0.19)</td>
<td>(0.15)</td>
<td>(0.15)</td>
<td>(0.18)</td>
<td>(0.20)</td>
</tr>
<tr>
<td>Quarter End</td>
<td>-54.44***</td>
<td>8.64</td>
<td>23.28**</td>
<td>63.08***</td>
<td>77.71***</td>
</tr>
<tr>
<td>Quarter Beginning</td>
<td>58.81***</td>
<td>-21.75*</td>
<td>-31.79***</td>
<td>-80.55***</td>
<td>-90.60***</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>24.1%</td>
<td>10.6%</td>
<td>9.1%</td>
<td>24.8%</td>
<td>28.8%</td>
</tr>
</tbody>
</table>

- Treasury repo rate does up, consistent with **H1**
- Repo spreads go down, consistent with **H3**
- Effect on agency MBS spread more negative than that of agency spread, consistent with **H5**
  (MBS worse collateral)

- What’s up with the positive sign of agency repo rates? Inconsistent with **H2**. Saved by **H4**?
### Table 3: Separating Schedule 1 and 2

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Treasury Rate</th>
<th>Agency Rate</th>
<th>Agency MBS Rate</th>
<th>Agency Spread</th>
<th>Agency MBS Spread</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.86</td>
<td>-0.93</td>
<td>-0.81</td>
<td>-0.08</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>(1.93)</td>
<td>(1.54)</td>
<td>(1.54)</td>
<td>(1.86)</td>
<td>(2.02)</td>
</tr>
<tr>
<td>Schedule 1</td>
<td>0.02</td>
<td>-0.04</td>
<td>-0.06</td>
<td>-0.06</td>
<td>-0.08</td>
</tr>
<tr>
<td></td>
<td>(0.54)</td>
<td>(0.43)</td>
<td>(0.43)</td>
<td>(0.52)</td>
<td>(0.57)</td>
</tr>
<tr>
<td>Schedule 2</td>
<td>1.10***</td>
<td>0.76***</td>
<td>0.50***</td>
<td>-0.34*</td>
<td>-0.61***</td>
</tr>
<tr>
<td></td>
<td>(0.20)</td>
<td>(0.16)</td>
<td>(0.16)</td>
<td>(0.20)</td>
<td>(0.21)</td>
</tr>
<tr>
<td>Quarter End</td>
<td>-54.60***</td>
<td>8.52</td>
<td>23.19**</td>
<td>63.12***</td>
<td>77.80***</td>
</tr>
<tr>
<td></td>
<td>(14.31)</td>
<td>(11.40)</td>
<td>(11.45)</td>
<td>(13.80)</td>
<td>(15.00)</td>
</tr>
<tr>
<td>Quarter Beginning</td>
<td>58.64***</td>
<td>-21.87*</td>
<td>-31.87***</td>
<td>-80.51***</td>
<td>-90.52***</td>
</tr>
<tr>
<td></td>
<td>(14.31)</td>
<td>(11.40)</td>
<td>(11.45)</td>
<td>(13.80)</td>
<td>(15.00)</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>25.2%</td>
<td>11.6%</td>
<td>9.3%</td>
<td>24.4%</td>
<td>28.7%</td>
</tr>
</tbody>
</table>

- Only Schedule 2 matters
- Agency securities and agency MBS are more like Treasuries than the “bad” other securities in Schedule 2
Persistent and mean-reverting processes
We need to control for level of repos and repo spreads
Other Results and Comments

- **Endogeneity issues:**
  - Is the quantity of Treasuries provided by the TSLF endogenous to the repo rates and spreads?
  - Does the Fed play dices?
  - High repo spreads $\rightarrow$ large TSLF amount?
  - $\rightarrow$ Large reduction in repo spreads due to *general mean reversion* or to the TSLF auction?

- **Effects appear larger in bad markets consistent with H6**
  - when $r^{\text{Fed funds}} - r^{\text{Treasury}}$ is greater
  - only fully subscribed auctions matter

Comment: again need to control for level of repo rates – can be simple mean-reversion
The big question is:

- Does the TSLF help solve the banks’ funding problems and break the liquidity spirals?

Sources: Brunnermeier and Pedersen (RFS, 2009) “Market Liquidity and Funding Liquidity”
Garleanu and Pedersen (AER, 2007) “Liquidity and Risk Management”
The **big** question is:

• Does the TSLF help solve the banks’ funding problems and break the liquidity spirals?

Evidence for this would be:

• Repo rates and margins of “bad” securities go down
• Plus evidence of causality

This paper does not (try to) answer this question

• What about the repo rates of the “bad” Schedule-2 collateral?
• What about the margins/haircuts?
• What about quantities of repo loans?
Conclusion

- Very interesting paper with a careful analysis

- Clear description of institutional features and markets

- Provides interesting evidence that the TSLF does have an effect
  - More analysis regarding causality

- New data is needed to address whether this alleviates banks’ funding problems