Why do central banks make public announcements of open market operations?

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Summary

1. Central banks adjust supply of liquidity using open market operations (OMOs) to affect short-term interest rates.
2. The liquidity effect of OMOs in the US estimated to be between 1 basis point (bp) and 3 bps per $1 billion of liquidity injected (Hamilton, 1997; Carpenter and Demiralp, 2008).
3. Why do prominent central banks also choose to make public announcements of OMOs?

   - The paper uses Canadian OMO data to argue that such announcements improve transparency in the funding liquidity market.

Mechanism

1. Unexpected OMO announcements signal higher-than-expected world-system-wide demand for liquidity today...
2. OMO announcements are credible public signals of aggregate funding conditions.
3. Funding liquidity conditions persist before and after OMO announcements.
4. Results in higher overnight lending rates after a surprise OMO announcement.
5. The table below reports median 24-hour change in overnight lending rates (in bp) when expectations of OMOs differ significantly from outcomes (values highlighted in bold are significant at the 95% level or higher).

Empirical strategy

1. In order to improve transparency, central banks may choose to make public announcements of their OMO activities.

Empirical model

1. $X$ is a vector of variables (observed by market) relevant to BoC OMO decision.
2. Estimation following the two-step conditional event study method proposed by Prabhala (1997).
3. Results from the first-stage Tobit estimation (coefficients highlighted in **bold** italic are significant at the 95% (90%) level or higher).

Does announcement of OMO volume also improve transparency?

Modified empirical model

1. Adapt the Prabhala (1997) framework to surprises in OMO loan size.
2. Surprises in OMO loan amount ($\text{OMO}_\text{Vol,Comma}$) measured as the difference between realized and expected OMO volume.
3. Run second-stage regression of 24-hour changes in overnight loan rates and volumes on $\text{OMO}_\text{Vol,Comma}$.

Step 1: Predictors of OMO volume

Results from the first-stage Tobit estimation (coefficients highlighted in **bold** italic are significant at the 95% (90%) level or higher).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>T-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence of OMOs</td>
<td>0.083</td>
<td>0.004</td>
<td>18.96</td>
</tr>
<tr>
<td>System-wide liquidity at end of previous day</td>
<td>-0.64 10^-10</td>
<td>0.000</td>
<td>-12.00</td>
</tr>
<tr>
<td>GoCRepoSpr$<em>{\text{SP,OMO}}$ &amp; GoCRepoSpr$</em>{\text{SP,OMO}}$</td>
<td>2.77 10^-12</td>
<td>0.000</td>
<td>15.99</td>
</tr>
<tr>
<td>Prevailing liquidity conditions prior to OMO</td>
<td>0.43 10^-12</td>
<td>0.000</td>
<td>3.23</td>
</tr>
<tr>
<td>Comm$<em>{\text{OMO,Comma}}$ &amp; Comm$</em>{\text{OMO,Comma}}$</td>
<td>1.83 10^-12</td>
<td>0.000</td>
<td>15.11</td>
</tr>
</tbody>
</table>

Step 2: Effect of surprises in OMO volume

Unexpectedly high OMO volume raises cost of overnight funding. This is accompanied by GoC repo volumes that increase with OMO volume. (All dependent variables are 24-hour changes; coefficients highlighted in **bold** italic are significant at the 95% (90%) level or higher).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>T-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comms$<em>{\text{OMO,Comma}}$ &amp; Comms$</em>{\text{OMO,Comma}}$</td>
<td>2.78 10^-12</td>
<td>0.000</td>
<td>15.99</td>
</tr>
<tr>
<td>RG$<em>{\text{OMO}}$ &amp; RG$</em>{\text{OMO}}$</td>
<td>0.64 10^-12</td>
<td>0.000</td>
<td>3.23</td>
</tr>
</tbody>
</table>

References


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