Analysis of the Federal Reserve Reverse Repo Program (RRP)

Alex Roever
Head of US Interest Rate Strategy
alex.roever@jpmorgan.com
J.P. Morgan Securities LLC

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RRP has proven to be an effective floor for some money market rates.

Usage of the Fed overnight fixed-rate reverse repo facility has grown.

Since launch, there have only been a few instances where the O/N GCF repo rate dipped below the RRP offered rate at the Fed.

<table>
<thead>
<tr>
<th>Counterparty Cap</th>
<th>$5bn</th>
<th>$7bn</th>
<th>$10bn</th>
<th>$30bn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latest</td>
<td></td>
<td></td>
<td>98</td>
<td>98</td>
</tr>
<tr>
<td>Average</td>
<td>97</td>
<td>83</td>
<td>139</td>
<td>126</td>
</tr>
<tr>
<td>Max</td>
<td>130</td>
<td>242</td>
<td>339</td>
<td>191</td>
</tr>
<tr>
<td>Min</td>
<td>66</td>
<td>49</td>
<td>53</td>
<td>29</td>
</tr>
</tbody>
</table>

Source: Federal Reserve, J.P. Morgan

*Volume-weighted average of trades prior to RRP operation

Source: Federal Reserve, J.P. Morgan
RRP usage has been dominated by MMFs

*Note: Latest available data. Next data release scheduled to occur at end of first quarter, 2015
Source: Federal Reserve
Using previous quarter-end data, we estimate that money fund demand for RRP at the end of March could register approximately $370bn.

<table>
<thead>
<tr>
<th>Date</th>
<th>Aggregate Program Cap* (ON + Term)</th>
<th>0 to $10bn</th>
<th>$10bn to $20bn</th>
<th>$20bn to $30bn</th>
<th>Above $30bn</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/31/2013</td>
<td>Uncapped</td>
<td>0.95</td>
<td>1.89</td>
<td>2.43</td>
<td>2.28</td>
</tr>
<tr>
<td>3/31/2014</td>
<td>Uncapped</td>
<td>0.70</td>
<td>2.04</td>
<td>3.15</td>
<td>4.31</td>
</tr>
<tr>
<td>6/30/2014</td>
<td>Uncapped</td>
<td>0.62</td>
<td>3.33</td>
<td>4.98</td>
<td>5.53</td>
</tr>
<tr>
<td>9/30/2014</td>
<td>$300bn</td>
<td>0.58</td>
<td>3.28</td>
<td>4.12</td>
<td>5.75</td>
</tr>
<tr>
<td>12/31/2014</td>
<td>$600bn</td>
<td>0.67</td>
<td>3.77</td>
<td>6.40</td>
<td>7.35</td>
</tr>
<tr>
<td>Estimated 3/31/15</td>
<td>$500bn</td>
<td>0.70</td>
<td>3.71</td>
<td>5.72</td>
<td>7.07</td>
</tr>
</tbody>
</table>

*Sum of individual ON and term RRP usage caps
**Auction feature introduced for 9/30/14 and onward
***Term RRP with $300bn cap introduced for 12/31/14, $200bn cap for 3/31/15
Source: Fund holdings reports, Federal Reserve, J.P. Morgan
Regulatory reporting pressures have caused some banks to increasingly temporarily shed short-term wholesale funding at quarter-ends.

Repo balances outstanding for large banks tend to contract at quarter-ends...

...with time deposit balances following the same trend.

Source: Cranes Data

Source: Fund holdings reports, J.P. Morgan estimates
Surging demand for government product could widen the bills/OIS gap to levels we have not seen historically.

The spread between 3m OIS and 3m bills typically grows as the market anticipates a higher Fed funds rate while the demand for bills remain sticky.

Currently, bills comprise only about 11% of Treasury’s outstanding marketable debt.

Spread between 3m OIS and 3m bills, 60 days before and after the first rate hike in 1992, 1999, and 2004 (bp)

Treasury bills as a share of outstanding marketable Treasury debt

Source: Federal Reserve

Source: J.P. Morgan
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<table>
<thead>
<tr>
<th></th>
<th>Overweight</th>
<th>Neutral</th>
<th>Underweight</th>
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<tr>
<td>Global Credit Research Universe</td>
<td>25%</td>
<td>57%</td>
<td>17%</td>
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<tr>
<td>IB clients*</td>
<td>71%</td>
<td>64%</td>
<td>58%</td>
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Note: The Credit Research Rating Distribution is at the issuer level. Please note that issuers with an NR or an NC designation are not included in the table above.

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