Exit Strategies from Credit Easing

Spence Hilton
Federal Reserve Bank of New York
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Topics

– Background on Historical Operating Procedures and Balance Sheet, and Responses to the Financial Crisis
– Wind down of short-term liquidity facilities
– Aftermath of large-scale asset purchases
– Approach to raising short-term interest rates
Characteristics of Historical Operating Procedures

• Fed loans and asset purchases directly affect the supply of reserves held by banks at the Fed
  - Traditional open market operations are Treasury purchases and RPs

• OMOs are used to keep the federal funds rate around the target set by the FOMC

• When the Fed could not pay interest on reserves, high levels of excess reserves would drive the rate to 0
  - Reserve levels usually remained close to requirements (i.e., excess reserves low)
# Representative Pre-Crisis Federal Reserve Balance Sheet, August 2007

(billions of dollars)

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treasury Securities</td>
<td>Bank reserves</td>
</tr>
<tr>
<td>791</td>
<td>15</td>
</tr>
<tr>
<td>RPs</td>
<td>Federal Reserve notes</td>
</tr>
<tr>
<td>19</td>
<td>777</td>
</tr>
<tr>
<td>PCF loans (Discount Window)</td>
<td>Treasury deposits</td>
</tr>
<tr>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Other Assets</td>
<td>Other liabilities and capital</td>
</tr>
<tr>
<td>59</td>
<td>72</td>
</tr>
</tbody>
</table>

**Total Assets** 869  **Total liabilities and capital** 869

Source: Board of Governors h.4.1
Policy Responses to the Financial Crisis Beyond Conventional Rate Reductions

• Extension of short-term liquidity through new and old facilities to alleviate strains in financial markets
  – TAF, FX swaps, PCF, CPFF, AMLF, etc.

• Provide further stimulus through Large Scale Asset Purchases (LSAPs) of longer term assets
  – Agency MBS, Agency debt, and longer term Treasury securities

• Other actions
  – Provide direct support to key credit markets (TALF)
  – Direct lending to systemically important institutions (e.g., AIG)
Reserve Levels, Interest on Reserves, and the Zero Bound

- **September 2008**: Extensions of short-term loans and, later, LSAPs begin to exceed Fed’s ability to neutralize the impact on reserves.

- **October 2008**: Fed started to pay interest on reserves
  - Hoped the interest rate paid on excess reserves would set a floor to market rates
  - Didn’t work as hoped once excess reserves reached high levels

- **December 2008**: Fed reduced the fed funds target rate to zero bound
  - Fed funds target range is 0 to ¼ percent
  - Interest on Excess Reserves (IOER) rate is ¼ percent
Impacts on the Federal Reserve Balance Sheet

Balance Sheet Assets by Category

- Lending to Systemically Important Institutions
- TALF
- Short-Term Liquidity Facilities: TAF, Liquidity Swaps, CPFF, AMLF, MMIFF, PCF, PDCF
- Outright Asset Holdings: Treasuries, Agency Debt, Agency Discount Notes, Agency MBS
- All Other

Source: Federal Reserve Bank of New York
Impacts on the Federal Reserve Balance Sheet

Balance Sheet Liabilities by Category

- All Other Liabilities and Capital
- Total DI Deposits
- Federal Reserve Notes

Source: Federal Reserve Bank of New York
# Federal Reserve Balance Sheet

**December 2009**

(billions of dollars)

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outright Treasury, Agency, and Agency MBS</td>
<td>Bank reserves</td>
</tr>
<tr>
<td></td>
<td>1845</td>
</tr>
<tr>
<td>Short-term lending</td>
<td>Federal Reserve notes</td>
</tr>
<tr>
<td>(including PCF and RPs)</td>
<td>120</td>
</tr>
<tr>
<td>TALF</td>
<td>Treasury deposits</td>
</tr>
<tr>
<td></td>
<td>48</td>
</tr>
<tr>
<td>Lending to Systemically Important Institutions</td>
<td>Other liabilities and capital</td>
</tr>
<tr>
<td></td>
<td>111</td>
</tr>
<tr>
<td>Other assets</td>
<td></td>
</tr>
<tr>
<td></td>
<td>113</td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2237</td>
</tr>
</tbody>
</table>

Source: Board of Governors h.4.1
Rebalancing the Balance Sheet

• Timing is conditional on continued improvement in financial and economic conditions

• Wind down of short-term liquidity facilities

• Disposition of assets acquired under the LSAPs

• Implications of policy tightening (raising short-term interest rates)
Wind Down of Short-Term Liquidity Facilities

• Priced to be attractive during crisis and uneconomical during normal periods
  – This feature has worked well in generating automatic run-off

• Some facilities must be terminated when conditions are no longer “unusual and exigent”
  – Many scheduled to end on February 1, 2010
  – There could be a permanent role for other facilities, but likely small under normal conditions
US Dollar Libor-OIS Spreads

Source: Bloomberg
Outstanding Balances at Liquidity Facilities

Source: Federal Reserve Bank of New York
Large Scale Asset Purchases (LSAPs)

• Began in December 2008; scheduled to end in Q1 2010.
• Included $1 ¾ trillion in purchases of longer term securities
  - $1 ¼ trillion of mortgage backed securities
  - $200 billion in Agency debt
  - $300 billion of Treasury securities

• Intended to influence levels of longer term interest rates, and interest rate spreads in MBS markets

• Impact on rates is believed to result mostly from holding more longer term securities, not from buying securities (portfolio balance effects).
MBS Option-Adjusted Spread

Source: Barclays
Post-LSAP Portfolio

- Total outright holdings (including new purchases and Treasury securities held before LSAPs began) will be about $2 ¼ trillion
  - Compared to about $800 billion previously

- Total will include about $1 ½ trillion of non-Treasury assets

- Most of these assets carry longer maturities
Long Run Portfolio Goals

• Return to previous size?
• Return to all Treasury holdings?
  - Composition of Treasury holdings too
• How quickly? Considerations include …
  - Pace at which Committee wishes to undo the original LSAP effects
  - Pace at which market can absorb increased supply of securities without disruptions
• Tools for reducing outright holdings
  - Redemptions: slower pace
  - Sales: faster pace
Raising Short-term Interest Rates

- Fed will likely still have elevated balance sheet, and reserve levels, when time comes to raise short-term interest rates

- Interest on Excess Reserves (IOER) may allow Fed to control short-term rates even with large amounts of reserves
  - But there are questions about effectiveness

- To ensure effectiveness, FOMC could also drain reserves
  - Reverse RPs; Term deposits (TDs); Redemptions, and Sales
  - Have different impact on size of the Fed’s balance sheet
Effectiveness of IOER

Source: Federal Reserve Board of Governors
Tactical Considerations for Using RRPs and TDs

• Developing and Testing New Operating Methods for RRPs and TDFs, including possible new counterparties

• Possible sequencing of RRPs/TDs, raising the IOER rate, and tightening policy by increasing the Fed funds rate target
  - Raise IOER rate when wish to tighten monetary policy, and then see if draining reserves is even necessary
  - Start draining reserves before raising the IOER rate and tightening monetary policy, just in case it is needed
  - Raise the IOER rate and start draining reserves at the same time.
Questions?