Appendix 1: Materials used by Mr. Sack
Material for

**FOMC Presentation:**

*Financial Market Developments and Desk Operations*

Brian Sack

September 23, 2009
(1) US Equity Prices (S&P 500)

Indexed to 100=8/1/08

Source: Bloomberg

(2) Corporate Debt Spreads

BPS

Source: Bank of America

(3) GDP Forecasts

Percent

Source: Dealer Policy Survey

(4) Equity Implied Volatility (VIX)

Percent

Source: Bloomberg

(5) Equity Premium

Percent

Source: Federal Reserve Board of Governors

(6) Expected Default Rate on High-Yield Corporate Bonds*

Percent

Source: Moody’s

*Default rates expected at 1-year horizon
(13) Treasury Yields

Source: Bloomberg

(14) Breakeven Inflation Rates

Source: Barclays

(15) Implied Volatility on Yields

Source: Bloomberg

(16) Implied Federal Funds Rate

Source: Federal Reserve Board of Governors

(17) Expected Timing of First Rate Hike

Source: Dealer Policy Survey

(18) Monthly Purchases of Treasury Securities

Source: Federal Reserve Bank of New York
(19) MBS Option–Adjusted Spread

Source: Barclays Capital, Bloomberg

(20) Impact on MBS Yield from Purchase Program

Source: Dealer Policy Survey

(21) Weekly Pace of Agency MBS Purchases

Source: Federal Reserve Bank of New York

(22) Weekly Pace of Agency Debt Purchases

Source: Federal Reserve Bank of New York

(23) Expected Cumulative Agency MBS Purchases

Source: Dealer Policy Survey

(24) Expected Cumulative Agency Debt Purchases

Source: Dealer Policy Survey
(25) Balance Sheet Assets by Category

Source: Federal Reserve Bank of New York

(26) US Libor-OIS Spreads

Source: Bloomberg

(27) Commercial Paper Spreads*

Source: Federal Reserve Board of Governors

(28) Overnight Repo Collateral Haircuts

Source: Dealer Haircut Survey

(29) Federal Reserve Short-Term Liquidity Facilities

Source: Federal Reserve Bank of New York

(30) Remaining Usage of Liquidity Facilities

<table>
<thead>
<tr>
<th></th>
<th>FX Liquidity Swaps¹</th>
<th>CPFF</th>
<th>TAF</th>
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<tbody>
<tr>
<td>Volume of Funding Outstanding ($ bil)</td>
<td>61</td>
<td>39</td>
<td>196</td>
</tr>
<tr>
<td>Number of Current Borrowers/Issuers</td>
<td>13</td>
<td>23</td>
<td>196</td>
</tr>
<tr>
<td>Number of Continuous Borrowers/Issuers²</td>
<td>6</td>
<td>23</td>
<td>14</td>
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</tbody>
</table>

¹Number of FX liquidity swap borrowers includes ECB participants only.
²Continuous borrowers are firms using facilities since June 25, 2009.

Source: Federal Reserve Bank of New York
Appendix 2: Materials used by Mr. English
Exhibit 1
Effects of Elevated Reserve Balances

Aggregate reserve balances of DIs

Two possible concerns

- High levels of reserve balances could put pressure on leverage ratios, leading banks to reduce bank credit
- Banks’ efforts to reduce their balances could put downward pressure on interest rates and lead to an easing of credit standards and terms

Leverage ratios

- The subject of a staff memo and briefing at the June meeting.
- Aggregate bank capital appears to be sufficient given the projected increase in reserve balances
- Anticipated increase in reserve balances is now smaller
- But we don’t know how large a buffer banking organizations want over regulatory norms

Consultations

- To examine the second concern, staff consulted with four banking organizations:
  - Two large commercial banks
  - One key processing bank
  - One large U.S. branch of a foreign banking organization
- The institutions account for 35 percent of reserve balances and 17 percent of bank credit

Reasons for elevated balances

- Large inflows of funds last fall
- Relatively unattractive risk-adjusted returns on alternative assets
- Weak loan demand
- Large commercial banks chose to hold high balances as a liquidity buffer

Response to further inflows of balances

- The large commercial banks indicated balances could rise before they would take action
- The other two firms said they would offset any addition
- Possible actions:
  - Run off some managed liabilities
  - Purchase safe, short- and intermediate-term securities
  - No change in lending
Exhibit 2
Policy Implications

Plans for reducing balances

- Reductions were expected to leave balances above pre-crisis levels
  - Interest on reserves
  - Increased concern about liquidity
- The organizations’ anticipated timing of reductions in reserve balances differed widely

Intended methods for reducing balances

- Pay down borrowings in wholesale markets
- Allow some large time deposits to run off
- Increase lending in interbank and other wholesale markets
- Increase purchases of safe, short- and intermediate-term securities
- Generally no changes in lending terms and standards

Implications for financial markets

- Tension between projected increases in reserves and potentially decreasing demand
- Asset returns will have to adjust to leave banks willing to hold the existing stock of reserves
  - Rates on shorter-term funding instruments likely to fall
  - Yield on securities that are close substitutes for reserves should decline
  - No change in lending standards

Implications for the economy

- These are the intended consequences of quantitative easing
- The size of the resulting effects on rates and on the economy is quite uncertain
- In the staff forecast, these effects are assumed to be quite small
- Constructed an alternative simulation assuming the effects are large

Simulation results

<table>
<thead>
<tr>
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<th>2010</th>
<th>2011</th>
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<tbody>
<tr>
<td>GDP growth (Q4/Q4)</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td>Unemployment (Q4)</td>
<td>-0.1</td>
<td>-0.3</td>
</tr>
<tr>
<td>PCE Inflation (Q4/Q4)</td>
<td>0.1</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Note: Changes relative to baseline forecast.

What if this analysis is wrong?

- Could provide more stimulus
  - Some members may see additional monetary stimulus as potentially beneficial
- Could contribute to higher expected and actual inflation
- The Committee might decide to tighten policy sooner or more rapidly than would otherwise have been the case
Appendix 3: Materials used by Mr. Madigan
Class I FOMC – Restricted Controlled (FR)

Material for Briefing on
Proposed TAF and TSLF Schedules

Brian Madigan
September 22, 2009
The Federal Reserve on Thursday announced schedules for operations under the Term Auction Facility (TAF) and the Term Securities Lending Facility (TSLF) through January 2010 and other information related to those facilities.

These schedules are consistent with the intention indicated in the Federal Reserve’s June 25 press release to gradually scale back these facilities in response to continued improvements in financial market conditions.

As noted in previous announcements, the Federal Reserve remains prepared to expand its liquidity provision should financial market conditions deteriorate materially. If significant market strains appear likely to develop over year-end, the announced schedules may be modified to accommodate expanded operations.

Detailed schedules are attached.

**Term Auction Facility**

Under the TAF, to date the Federal Reserve has reduced offered amounts from a peak of $150 billion per auction to $75 billion per auction as conditions in wholesale markets for unsecured credit have continued to improve. Under the schedules announced Thursday, the Federal Reserve will continue to offer $75 billion per auction of 28-day funds through January to help ensure that an adequate volume of funding is available in the period leading up to year-end and over year-end. Reductions in the sizes of those 28-day operations are expected to resume early next year. The amounts offered under the existing cycle of auctions of 84-day funds will be reduced to $50 billion effective in October and to $25 billion in November and December, and the maturities of those operations will be reduced. The purpose of shortening the maturities is to align the maturity dates of those operations with the maturities in the cycle for 28-day funds. With the completion of that transition, the auction schedule will be converted by early next year to a single cycle of 28-day funds offered every 28 days.

Over the next several months, the Federal Reserve will assess whether to maintain a TAF on a permanent basis. A permanent TAF could take a variety of forms. For example, under one approach, a relatively small amount of funds would be made available in ordinary circumstances, but the facility could be expanded rapidly in conditions of extraordinary market stress. Under an alternative approach, the TAF would be deactivated when market conditions have improved sufficiently but would remain available for use in conditions of increased market stress. The Federal Reserve will soon publish a request for public comment on a range of possible structures for a permanent TAF.

**Term Securities Lending Facility**

As announced on June 25, the Federal Reserve has discontinued Schedule 1 TSLF operations and TSLF Options Program operations. It has also reduced the frequency and size of its Schedule 2 TSLF operations. Consistent with recent further improvements in conditions in secured financing markets, the amounts offered in TSLF auctions will be scaled back further from their current size of $75 billion. As indicated in the attached schedule, TSLF offerings will
be reduced to $50 billion in the October auction and to $25 billion in the November, December, and January auctions.

**Possible Year-end Operations**

The Federal Reserve is prepared to temporarily increase the sizes of TAF and TSLF operations or conduct additional off-cycle operations with terms that span year-end in order to address transitory market strains.
# TAF Auction Schedule

<table>
<thead>
<tr>
<th>Auction Date</th>
<th>Term (Days)</th>
<th>Auction Amount</th>
<th>Settlement Date</th>
<th>Maturity Date</th>
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<tbody>
<tr>
<td>10/19/2009</td>
<td>28</td>
<td>$75 billion</td>
<td>10/22/2009</td>
<td>11/19/2009</td>
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<tr>
<td>12/14/2009</td>
<td>28</td>
<td>$75 billion</td>
<td>12/17/2009</td>
<td>1/14/2010</td>
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<tr>
<td>1/11/2010</td>
<td>28</td>
<td>$75 billion</td>
<td>1/14/2010</td>
<td>2/11/2010</td>
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</table>

# TSLF Auction Schedule (All Schedule 2)

<table>
<thead>
<tr>
<th>Auction Date</th>
<th>Term (Days)</th>
<th>Auction Amount</th>
<th>Settlement Date</th>
<th>Maturity Date</th>
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</table>
Appendix 4: Materials used by Mr. Madigan
Class I FOMC – Restricted Controlled (FR)

Material for Briefing on
Monetary Policy Alternatives

Brian Madigan
September 23, 2009
August FOMC Statement

Information received since the Federal Open Market Committee met in June suggests that economic activity is leveling out. Conditions in financial markets have improved further in recent weeks. Household spending has continued to show signs of stabilizing but remains constrained by ongoing job losses, sluggish income growth, lower housing wealth, and tight credit. Businesses are still cutting back on fixed investment and staffing but are making progress in bringing inventory stocks into better alignment with sales. Although economic activity is likely to remain weak for a time, the Committee continues to anticipate that policy actions to stabilize financial markets and institutions, fiscal and monetary stimulus, and market forces will contribute to a gradual resumption of sustainable economic growth in a context of price stability.

The prices of energy and other commodities have risen of late. However, substantial resource slack is likely to dampen cost pressures, and the Committee expects that inflation will remain subdued for some time.

In these circumstances, the Federal Reserve will employ all available tools to promote economic recovery and to preserve price stability. The Committee will maintain the target range for the federal funds rate at 0 to ¼ percent and continues to anticipate that economic conditions are likely to warrant exceptionally low levels of the federal funds rate for an extended period. As previously announced, to provide support to mortgage lending and housing markets and to improve overall conditions in private credit markets, the Federal Reserve will purchase a total of up to $1.25 trillion of agency mortgage-backed securities and up to $200 billion of agency debt by the end of the year. In addition, the Federal Reserve is in the process of buying $300 billion of Treasury securities. To promote a smooth transition in markets as these purchases of Treasury securities are completed, the Committee has decided to gradually slow the pace of these transactions and anticipates that the full amount will be purchased by the end of October. The Committee will continue to evaluate the timing and overall amounts of its purchases of securities in light of the evolving economic outlook and conditions in financial markets. The Federal Reserve is monitoring the size and composition of its balance sheet and will make adjustments to its credit and liquidity programs as warranted.
September FOMC Statement – Alternative A

1. Information received since the Federal Open Market Committee met in August indicates that economic activity is leveling out, and conditions in financial markets have improved somewhat further. Businesses have made progress in bringing inventory stocks into better alignment with sales. However, household spending is sluggish, job losses are ongoing, and credit remains tight. Although the Committee continues to anticipate a resumption of economic growth in a context of price stability, absent further policy action the economic recovery could be relatively weak, with slack in resource utilization diminishing quite slowly.

2. Inflation has fallen considerably over the past year. With substantial resource slack likely to continue to dampen cost pressures, the Committee expects that inflation will remain subdued for some time.

3. To promote a sustained economic recovery and higher resource utilization, the Committee has decided to provide additional monetary stimulus by increasing its purchases of agency mortgage-backed securities to a total of $1.5 trillion, up from the previously announced amount of as much as $1.25 trillion, and to extend these purchases through the second quarter of 2010. As previously announced, the Federal Reserve is in the process of buying $300 billion of Treasury securities by the end of October and up to $200 billion of agency debt by the end of the year. The Committee will maintain the target range for the federal funds rate at 0 to ¼ percent and continues to anticipate that low levels of resource utilization and subdued inflation are likely to warrant exceptionally low levels of the federal funds rate for an extended period. The Committee will continue to evaluate the timing and overall amounts of its purchases of securities, in light of the evolving economic outlook and conditions in financial markets. The Federal Reserve is monitoring the size and composition of its balance sheet and will make adjustments to its credit and liquidity programs as warranted.
September FOMC Statement – Alternative B

1. Information received since the Federal Open Market Committee met in August suggests that economic activity has picked up following its severe downturn. Conditions in financial markets have improved further, and activity in the housing sector has increased. Household spending seems to be stabilizing but remains constrained by ongoing job losses, sluggish income growth, lower housing wealth, and tight credit. Businesses are still cutting back on fixed investment and staffing, though at a slower pace; they continue to make progress in bringing inventory stocks into better alignment with sales. Although economic activity is likely to remain weak for a time, the Committee anticipates that policy actions to stabilize financial markets and institutions, fiscal and monetary stimulus, and market forces will support a strengthening of economic growth and a gradual return to higher levels of resource utilization in a context of price stability.

2. With substantial resource slack likely to continue to dampen cost pressures and with longer-term inflation expectations stable, the Committee expects that inflation will remain subdued for some time.

3. In these circumstances, the Federal Reserve will continue to employ a [wide] range of tools to promote economic recovery and to preserve price stability. The Committee will maintain the target range for the federal funds rate at 0 to ¼ percent and continues to anticipate that economic conditions are likely to warrant exceptionally low levels of the federal funds rate for an extended period. To provide support to mortgage lending and housing markets and to improve overall conditions in private credit markets, the Federal Reserve will purchase a total of [up to] $1.25 trillion of agency mortgage-backed securities and up to $200 billion of agency debt. The Committee will gradually slow the pace of these purchases in order to promote a smooth transition in markets and anticipates that they will be completed [by the end of the first quarter | in the second quarter] of 2010. As previously announced, the Federal Reserve’s purchases of $300 billion of Treasury securities will be completed by the end of October 2009. The Committee will continue to evaluate the timing and overall amounts of its purchases of securities in light of the evolving economic outlook and conditions in financial markets. The Federal Reserve is monitoring the size and composition of its balance sheet and will make adjustments to its credit and liquidity programs as warranted.
September FOMC Statement – Alternative C

1. Information received since the Federal Open Market Committee met in August suggests that a recovery in economic activity has begun. Conditions in financial markets have improved further. Consumer spending seems to be stabilizing but has yet to show sustained strength. Activity in the housing sector has increased. Businesses are still cutting back on fixed investment and staffing, though at a slower pace; they continue to make progress in bringing inventory stocks into better alignment with sales. The Committee anticipates that policy actions to stabilize financial markets and institutions, fiscal and monetary stimulus, and market forces will support a strengthening of economic growth in a context of price stability.

2. With inflation expectations apparently well anchored, the Committee expects that inflation will remain subdued for some time.

3. In view of improving economic and financial market conditions, the Committee now plans to purchase a total of about $1 trillion of agency mortgage-backed securities and about $150 billion of agency debt, somewhat less than the previously announced maximum amounts. To promote a smooth transition in markets, the Committee will gradually slow the pace of its purchases until their expected completion by the end of the year. As previously announced, the Federal Reserve’s purchases of $300 billion of Treasury securities will be completed by the end of October. The Federal Reserve is monitoring the size and composition of its balance sheet and will make adjustments to its credit and liquidity programs as warranted. So long as inflation remains well contained, the Committee will maintain the target range for the federal funds rate at its exceptionally low level of 0 to ¼ percent until it has greater assurance that the economic recovery will be sustained. The Committee will continue to evaluate timing and overall amounts of its purchases of securities in light of the evolving economic outlook and conditions in financial markets.
Table 1: Overview of Alternative Language for the September 22-23, 2009 FOMC Announcement

<table>
<thead>
<tr>
<th>September Alternatives</th>
<th>August FOMC</th>
<th>A</th>
<th>B</th>
<th>C</th>
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<tr>
<td><strong>Forward Guidance on Funds Rate Path</strong></td>
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<tr>
<td></td>
<td>“for an extended period”</td>
<td>“for an extended period”</td>
<td>“for an extended period”</td>
<td>“So long as inflation remains well contained … until it has greater assurance that the economic recovery will be sustained”</td>
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<tr>
<td><strong>Treasury Securities Purchases</strong></td>
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<tr>
<td>Total Amount</td>
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<td>$300 billion</td>
<td>$300 billion</td>
<td>$300 billion</td>
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<tr>
<td>Pace</td>
<td>pace will “gradually slow”</td>
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<tr>
<td>Completion</td>
<td>by the end of October</td>
<td>by the end of October</td>
<td>by the end of October</td>
<td>by the end of October</td>
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<tr>
<td><strong>Agency MBS Purchases</strong></td>
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<td></td>
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<tr>
<td>Total Amount</td>
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<td>“a total of” $1.5 trillion</td>
<td>“up to” $1.25 trillion OR $1.25 trillion</td>
<td>“a total of about” $1 trillion</td>
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<tr>
<td>Pace</td>
<td>-----</td>
<td>-----</td>
<td>pace will “gradually slow”</td>
<td>pace will “gradually slow”</td>
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<tr>
<td>Completion</td>
<td>by the end of the year through the second quarter of 2010</td>
<td>by the end of the first quarter of 2010 OR in the second quarter of 2010</td>
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<td><strong>Agency Debt Purchases</strong></td>
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<td>Total Amount</td>
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<tr>
<td>Completion</td>
<td>by the end of the year by the end of the year</td>
<td>by the end of the first quarter of 2010 OR in the second quarter of 2010</td>
<td>by the end of the year</td>
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<td><strong>Evaluation of LSAP Timing and Overall Amounts</strong></td>
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<td>adjustments to timing and amounts of all LSAPs will continue to be evaluated</td>
<td>adjustments to timing and amounts of all LSAPs will continue to be evaluated</td>
<td>adjustments to timing and amounts of all LSAPs will continue to be evaluated</td>
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DIRECTIVE - AUGUST FOMC MEETING

The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to purchase agency debt, agency MBS, and longer-term Treasury securities during the intermeeting period with the aim of providing support to private credit markets and economic activity. The timing and pace of these purchases should depend on conditions in the markets for such securities and on a broader assessment of private credit market conditions. The Desk is expected to purchase up to $200 billion in housing-related agency debt and up to $1.25 trillion of agency MBS by the end of the year. The Desk is expected to purchase about $300 billion of longer-term Treasury securities by the end of October, gradually slowing the pace of these purchases until they are completed. The Committee anticipates that outright purchases of securities will cause the size of the Federal Reserve’s balance sheet to expand significantly in coming months. The System Open Market Account Manager and the Secretary will keep the Committee informed of ongoing developments regarding the System’s balance sheet that could affect the attainment over time of the Committee’s objectives of maximum employment and price stability.
The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to purchase agency debt, agency MBS, and longer-term Treasury securities during the intermeeting period with the aim of providing support to private credit markets and economic activity. The timing and pace of these purchases should depend on conditions in the markets for such securities and on a broader assessment of private credit market conditions. The Desk is expected to purchase about $300 billion of longer-term Treasury securities by the end of October, gradually slowing the pace of these purchases until they are completed. The Desk is expected to purchase up to $200 billion in housing-related agency debt by the end of the year and about $1.5 trillion of agency MBS by the end of the second quarter of 2010. The Committee anticipates that outright purchases of securities will cause the size of the Federal Reserve’s balance sheet to expand significantly in coming months. The System Open Market Account Manager and the Secretary will keep the Committee informed of ongoing developments regarding the System’s balance sheet that could affect the attainment over time of the Committee’s objectives of maximum employment and price stability.
**DIRECTIVE - SEPTEMBER FOMC MEETING — ALTERNATIVE B**

The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to $\frac{1}{4}$ percent. The Committee directs the Desk to purchase agency debt, agency MBS, and longer-term Treasury securities during the intermeeting period with the aim of providing support to private credit markets and economic activity. The timing and pace of these purchases should depend on conditions in the markets for such securities and on a broader assessment of private credit market conditions. The Desk is expected to complete purchases of about $300 billion of longer-term Treasury securities by the end of October and purchases of up to $200 billion in housing-related agency debt and [up to | about] $1.25 trillion of agency MBS [by the end of the first quarter of 2010 | in the second quarter of 2010]. The Desk is expected to gradually slow the pace of these purchases as they near completion. The Committee anticipates that outright purchases of securities will cause the size of the Federal Reserve’s balance sheet to expand significantly in coming months. The System Open Market Account Manager and the Secretary will keep the Committee informed of ongoing developments regarding the System’s balance sheet that could affect the attainment over time of the Committee’s objectives of maximum employment and price stability.
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