

**Meeting of the Federal Open Market Committee on
October 28–29, 2008**

A meeting of the Federal Open Market Committee was held in the offices of the Board of Governors of the Federal Reserve System in Washington, D.C., on Tuesday, October 28, 2008, at 2:00 p.m., and continued on Wednesday, October 29, 2008, at 9:00 a.m. Those present were the following:

Mr. Bernanke, Chairman
Mr. Geithner, Vice Chairman
Ms. Duke
Mr. Fisher
Mr. Kohn
Mr. Kroszner
Ms. Pianalto
Mr. Plosser
Mr. Stern
Mr. Warsh

Ms. Cumming, Messrs. Evans, Lacker, and Lockhart, and Ms. Yellen, Alternate Members of the Federal Open Market Committee

Messrs. Bullard, Hoenig, and Rosengren, Presidents of the Federal Reserve Banks of St. Louis, Kansas City, and Boston, respectively

Mr. Madigan, Secretary and Economist
Ms. Danker, Deputy Secretary
Mr. Skidmore, Assistant Secretary
Ms. Smith, Assistant Secretary
Mr. Alvarez, General Counsel
Mr. Baxter, Deputy General Counsel
Mr. Sheets, Economist
Mr. Stockton, Economist

Messrs. Connors, English, and Kamin, Ms. Mester, Messrs. Rosenblum, Slifman, Sniderman, and Wilcox, Associate Economists

Mr. Dudley, Manager, System Open Market Account

Ms. Bailey, Deputy Director, Division of Banking Supervision and Regulation, Board of Governors

Mr. Clouse, Deputy Director, Division of Monetary Affairs, Board of Governors

Mr. Blanchard, Assistant to the Board, Office of Board Members, Board of Governors

Mr. Struckmeyer,¹ Deputy Staff Director, Office of Staff Director for Management, Board of Governors

Messrs. Reifschneider and Wascher, Associate Directors, Division of Research and Statistics, Board of Governors

Messrs. Levin and Nelson, Associate Directors, Division of Monetary Affairs, Board of Governors

Ms. Kole, Assistant Director, Division of International Finance, Board of Governors

Mr. McCarthy, Visiting Reserve Bank Officer, Division of Monetary Affairs, Board of Governors

Mr. Oliner, Senior Adviser, Division of Research and Statistics, Board of Governors

Mr. Small, Project Manager, Division of Monetary Affairs, Board of Governors

Messrs. Bassett and Luecke, Section Chiefs, Division of Monetary Affairs, Board of Governors

Mr. Morin, Senior Economist, Division of Research and Statistics, Board of Governors

Ms. Low, Open Market Secretariat Specialist, Division of Monetary Affairs, Board of Governors

Mr. Moore, First Vice President, Federal Reserve Bank of Cleveland

Mr. Fuhrer, Executive Vice President, Federal Reserve Bank of Boston

Messrs. Altig and McAndrews, Ms. Mosser, Messrs. Rasche, Sullivan, and Williams, Senior Vice Presidents, Federal Reserve Banks of Atlanta, New York, New York, St. Louis, Chicago, and San Francisco, respectively

Messrs. Clark and Hornstein, Vice Presidents, Federal Reserve Banks of Kansas City and Richmond, respectively

Mr. Weber, Senior Research Officer, Federal Reserve Bank of Minneapolis

¹ Attended Wednesday's session only.

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October 28, 2008—Afternoon Session

CHAIRMAN BERNANKE. Good afternoon, everybody. We received requests from members for more time at this meeting to discuss the economic situation and our policy response. So as you know, we postponed the special presentations on inflation—my apologies to the presenters. We will come back to that at the appropriate time.

What we are going to do instead is to have three rounds of briefings today and tomorrow. We are going to start in the first round with Bill Dudley and his usual presentation on open market operations, followed by Nathan Sheets on the swaps proposals that you have been informed about, and then Bill Bassett will give a supplementary briefing on financial markets to complete that round. Then we'll have Q&A at that point. We will then turn to the economic situation and hear from Norm Morin on the nonfinancial economy and Linda Kole on the international economy and from Brian Madigan on our projections. Then we will have another round of questions. Tomorrow at lunch, after the close of the formal meeting, we will have some additional briefings on the TARP (troubled asset relief program), on the FDIC program, and on the supervisory and regulatory implications of that. So we hope to make this a very informative two days, and we hope to have plenty of interaction and conversation about our broad policy response to these very difficult times. So let me start, then, by turning to Bill Dudley. Bill.

MR. DUDLEY.¹ Thank you, Mr. Chairman. Today my attention will be narrower than usual, given the briefings by Bill Bassett and Linda Kole that will follow covering the broader developments in the equity, fixed income, and foreign exchange markets in the United States and abroad, which have been considerable over the past six weeks. I will focus on three topics: (1) the impact of our new facilities and other government initiatives on market function, (2) the consequences of the expansion of these facilities on our balance sheet and our ability to hit the federal funds rate target over time, and (3) the travails of the hedge fund community and how

¹ The materials used by Mr. Dudley are appended to this transcript (appendix 1).

this could potentially add to market dysfunction. I will be referring to the chart package that should be in front of you.

As you all know, the Lehman bankruptcy led to sharp outflows from prime money market mutual funds into Treasury-only funds (exhibit 1). The result was a collapse in Treasury bill yields (exhibit 2). At the same time, the cost of financing Treasury securities via repo fell sharply—this is illustrated in exhibit 3 by the drop in the overnight general collateral (GC) repo rate. This increased the incentive for Treasury traders to short Treasury securities that were already hard to obtain because the effective cost of borrowing such securities is determined by the level of the GC repo rate. As a result, Treasury fails, which represent Treasury securities that are not delivered as promised to their buyers, soared. Treasury fails were also exacerbated by the withdrawal from the securities lending market of some large holders of Treasuries, including some major foreign central banks. Although Treasury yields fell sharply and Treasury bills were in great demand, the rise in fails resulted in a sharp diminution of trading and liquidity in the Treasury securities market. The fact that there are severe market-functioning problems in the asset class that is in greatest demand—Treasuries—underscores the scope and severity of the markets' broader dysfunction.

At the same time, the outflows from prime money market funds led to a sharp drop in the demand for commercial paper, a significant rise in commercial paper rates, and a shortening of commercial paper maturities (exhibits 4 and 5). Term bank funding spreads rose sharply, with the one-month and three-month LIBOR–OIS spreads increasing to levels that make the earlier peaks look like modest speed bumps (exhibits 6 and 7). The Lehman bankruptcy caused counterparty risk concerns to intensify. Moreover, the Lehman bankruptcy disrupted a number of markets because participants in these markets were uncertain how to adjust their long- and short-position exposures that offset their open positions with Lehman. The result was a sharp drop in the willingness of counterparties to engage with one another, especially at term. Essentially, the result was a massive coordination problem that has led to a very unattractive equilibrium. I would put it this way: “I won't lend to you even though I think you're okay because I am not sure others will lend to you either. I need some assurance that others will lend to you in order to have some assurance I can get my money back if I need it.” Even though it has been in the interest of all parties to engage, no party has been willing to go first.

In response, the Federal Reserve dramatically expanded its programs of liquidity support. The size of each TAF auction has been raised to \$150 billion—the same size as the entire TAF program just six weeks ago. Fixed-rate tender dollar auctions were implemented by the BoE, the BoJ, the ECB, and the SNB. The asset-backed commercial paper money market mutual fund liquidity facility (AMLF) and the commercial paper funding facility (CPFF) were implemented, and plans for a money market investor funding facility (MMIFF) were announced. The Federal Reserve and other central banks stepped forward to engage in transactions with a broad range of bank and, in the case of the Fed, nonbank counterparties. The hope, of course, is that

this willingness to engage will reduce rollover risk and therefore encourage others to re-engage with their counterparties.

At least for now, the escalation in the size of the TAF auctions appears to have been sufficient to satisfy the demand for dollar funds in the United States. As shown in exhibit 8, the first two auctions of \$150 billion have been slightly undersubscribed. Currently, about \$300 billion of TAF credit is outstanding. Demand for dollar funding in Europe has increased sharply even though the cost is much higher than in our TAF auctions. Whereas the two most recent TAF auctions were stopped out at the OIS rate, which is the minimum bid rate, the foreign fixed-rate tender operations have been conducted at a rate of OIS plus 100 basis points. As shown in exhibits 9 and 10, swap outstandings have grown to nearly \$500 billion currently. The ECB swap size is currently about \$280 billion, more than half the total amount of swaps outstanding. The amount of outstanding swaps is likely to climb sharply when the first 84-day fixed-rate tender operations are conducted in Europe next week.

The CPFF facility is another important element in the Fed's program of liquidity escalation. As you know, this facility provides a backstop for domestic issuers of A1/P1-rated commercial paper. Issuers can sell commercial paper to the facility at three-month term for an effective cost of OIS plus 200 basis points for nonfinancial and financial issuers and OIS plus 300 basis points for asset-backed commercial paper (ABCP). This facility complements the AMLF, which lends funds to banks at the primary credit facility rate against the ABCP purchased from money market mutual funds. Yesterday was the first day that the CPFF was open for business, and a number of borrowers issued commercial paper to the facility totaling more than \$50 billion. At the close of business last week, 79 issuers had registered to use the facility, paying 10 basis points, or \$580 million, to cover the potential issuance of commercial paper. The 10 basis point fee provides a little equity to get the program off and running.

Finally, the most recent facility, the money market investor funding facility, was announced last week. This facility will provide liquidity to five conduits that will purchase commercial paper and certificates of deposit of designated issuers from 2a-7 money market mutual funds. It will likely be several more weeks before this facility is operational.

The escalation in the provision of liquidity and some of the other initiatives I will discuss shortly have led to a grudging improvement in the interbank funding markets and in the commercial paper market. Reviewing the earlier exhibits, most term funding spreads have narrowed, but the improvement is modest relative to the earlier deterioration. It is unclear at this stage whether the modest extent of improvement reflects the limited ability of additional capacity and breadth in terms of liquidity provision to restore confidence, especially at a time that the macroeconomic outlook has deteriorated globally, or whether it will just take time for these liquidity facilities to restore confidence and some semblance of normality to the money markets.

The expansion of the Fed's liquidity provisions has been accompanied by escalations on two other fronts. First, the FDIC announced a bank funding guarantee program. Although the terms and conditions of this program have not yet been finalized, the program is likely to guarantee most of the new senior debt obligations of participating depository institutions and their associated holding companies up to a cap of 125 percent of the maturing obligations through June 30, 2009. Importantly, new interbank funding will be covered. How this affects the federal funds market remains to be seen. Second, the Treasury has committed \$250 billion of funds from the TARP program to inject as preferred stock into the banking system. Nine large banks announced two weeks ago that they will accept \$125 billion of preferred stock investment from the Treasury. Over the past few days, the Treasury announced that an additional \$35 billion of capital has been committed. The FDIC guarantee announcement and the TARP capital infusion have been effective in shoring up confidence in the major U.S. banks. As shown in exhibits 11 and 12, credit default swap spreads for most major U.S. financial institutions have narrowed sharply.

But the guarantee of the senior debt of depository institutions and their associated holding companies has generated some unintended consequences for those firms not covered by these guarantees. In particular, the credit default swap spreads for major nonbank financials have narrowed less than those for the banks (exhibit 13). Moreover, the funding costs for the GSEs have climbed, especially for short-term discount note issuance. The funding costs for Fannie and Freddie for both long-term and short-term debt are shown in exhibits 14, 15, and 16. However, the fear that funds would flow out of prime money market funds back into bank assets guaranteed by the FDIC has not been realized—at least not yet.

The expansion of the Fed's facilities and the open-ended nature of the fixed-rate tender dollar operations by the foreign central banks that we are funding by swaps have led to rapid expansion of our balance sheet. Exhibit 17 provides a snapshot of the Federal Reserve's balance sheet at different times before and during the crisis. During the first 13 months, the size of our balance sheet was little changed. We accommodated our liquidity programs mainly by selling Treasury securities. During the next stage, which began around the time of the Lehman bankruptcy filing, we expanded our balance sheet but drained the reserve additions primarily by having the Treasury issue supplemental financing program bills and placing the proceeds on our balance sheet. However, the capacity to continue to drain reserves via SFP bills was unlikely to be a long-term solution because the Treasury would ultimately be constrained by the debt limit ceiling.

The passage of the Emergency Economic Stabilization Act of 2008 granted the Federal Reserve the authority to pay interest on reserves immediately. This was very important because it meant that we could expand our balance sheet size by unsterilized reserve additions but at the same time keep the federal funds rate from crashing to zero by paying a positive interest rate on holdings of excess reserves. Further rapid balance sheet expansion appears inevitable as the takedown from the TAF auctions and the fixed-rate tenders expands further and as our new facilities,

such as the CPFF and MMIFF, begin operation. Although the estimates shown for year-end in exhibit 17 are indicative—the actual size will be driven by the use of our various liquidity facilities—it does seem likely that the Federal Reserve System's balance sheet will grow very rapidly through year-end. We are now nearly three weeks into the new interest-on-reserves regime, which was implemented on October 9. As you know, the Board of Governors initially set the spread between the target federal funds rate and the rate paid on excess reserves at 75 basis points. Policymakers erred on the size of a wide margin given unsettled market conditions and the lack of experience with the new regime, recognizing that the spread could be reduced if the federal funds rate traded soft relative to the target.

As shown in exhibit 18, despite the payment of interest on reserves, the federal funds rate has continued to trade soft relative to the target. As a result, the Board narrowed the spread to 35 basis points with the start last Thursday of the second reserve maintenance period under the interest-on-reserves regime. It is too soon to assess the effect of the narrower spread on our ability to push the federal funds rate back up to the target because the interest rate paid on reserves is based upon the lowest target federal funds rate during the reserve maintenance period. So currently it is hard to separate the impact of the narrower spread on the effective federal funds rate from the expectations for further cuts in the target federal funds rate that might occur at this meeting. There are two complications in fixing the interest-on-reserves spread at a level consistent with the target. First, some of the GSEs, which hold balances at the Fed, are not allowed to earn interest on their balances. Thus they have to sell federal funds to banks that, in turn, hold the funds and are paid the interest-on-reserves rate. Second, some banks have also been selling federal funds below the interest-on-reserves rate. We expect this to diminish over time as they gain more experience with the new regime. However, other factors, such as concern with their overall leverage ratios, could cause this phenomenon to persist. As a result, there has been a significant amount of federal funds rate trading below the interest-on-reserves rate. This is illustrated in exhibit 19, in which the circles are sized to reflect the amount of trading at a particular rate level.

This trading of fed funds below the interest-on-reserves rate has two consequences. First, it blurs the meaning of the effective federal funds rate with respect to its relationship to the stance of monetary policy. Conceptually, the interest-on-reserves rate, rather than the effective federal funds rate, could be viewed as representing the default risk-free investment rate for banks. Second, it implies that we may have to narrow considerably further the spread between the target federal funds rate and the interest rate paid on excess reserves in order to push the effective federal funds rate up to the target. In principle, if fed funds sales were to continue in large volume below the interest-on-reserves rate, the interest-on-reserves rate might need to be set right at the federal funds rate target in order to support the federal funds rate close to that level.

Before turning to a discussion of monetary policy and inflation expectations, I want to make a few comments about the hedge fund industry. Before this crisis

began, most of the fears about a market meltdown were focused on hedge funds. Until now, these fears have been mostly misplaced. However, the risks that hedge fund problems will now exacerbate the crisis have increased substantially recently. The underlying problem is that the recent performance of the hedge fund industry has been very poor and hedge fund viability is not very robust when net asset values slip considerably below their high-water marks in individual funds. September was the poorest month in the past 10 years, and so far October returns are on pace to be even worse. Net asset value for the entire hedge fund industry is down more than 10 percent year-to-date. The average performance, shown in exhibit 20, masks substantial dispersion in returns and particularly poor performance for certain strategies. In particular, convertible arbitrage, emerging market arbitrage, and fixed-income arbitrage strategies suffered double-digit losses in the month of September, and further losses are likely in October.

Poor hedge fund performance has been exacerbated by several factors. First, policy shifts such as the short sales ban have caused big problems for convertible arbitrage, statistical arbitrage, and long/short equity strategies. This has been an important factor behind Citadel's travails. Second, prime brokers continue to pull back in their willingness to provide financing by raising their haircuts assessed against hedge fund assets as market volatility rises (exhibit 21). Third, investors are pulling funds out of hedge funds because of their poor performance and a generalized increase in risk aversion. As a result, hedge funds are raising cash to meet actual and potential redemptions, and many hedge funds are either hitting or approaching their net asset value trigger points.

Let me say a few words about net asset value triggers. Hedge funds often negotiate agreements with each of their prime brokers that set the terms for their access to financing. These contracts give the prime brokers the option to seize and liquidate collateral if the hedge fund net asset value falls by more than a certain magnitude—say, a 30 percent decline in assets under management over a three-month period; that's a very common trigger. Obviously, if only a few hedge funds are close to these triggers, there is little problem as there is no potential flood of asset sales into the market. But when so many hedge funds are under pressure at the same time, the risk of broader asset liquidation increases. The prime broker may have a lessened incentive to waive its right to liquidate collateral when a greater proportion of the industry is troubled because the first-mover advantage of selling collateral likely becomes more important under such circumstances.

I anticipate that the pressure from the liquidation of hedge fund assets will continue to weigh on financial markets over the next few months. Some major fund of fund managers anticipate redemptions between now and early 2009 of at least 25 percent of the total industry, or about \$500 billion based upon the estimated \$2 trillion size of the global hedge fund business.

Market participants continue to price in additional cuts in the federal funds rate target. Of course, it is a little harder than usual to tell what they are expecting based

on futures prices because the federal funds rate has traded soft relative to the target and those expectations are also embedded in the near-term rates for fed funds futures contracts. Regardless of the cause, if you look at exhibits 22 and 23, there has been a fairly sharp downward shift in the federal funds rate curve and the Eurodollar futures curve—they have shifted downward about 100 basis points. Moreover, the curves are considerably flatter than they were a few months ago, indicating that market participants expect that the FOMC will be slow to raise the federal funds target in 2009. Our primary dealer survey indicates that most survey respondents expect the Committee to lower the target federal funds rate over the next two meetings to around 1 percent and keep it there through most of 2009. This also represents a downward shift of about 100 basis points from the survey conducted before the September 16 meeting (exhibits 24 and 25). When the survey was conducted more than a week ago, the majority of respondents anticipated a 25 basis point cut. Since then, the consensus has flipped, with most now anticipating a 50 basis point rate cut at this meeting.

On the inflation expectations front, normal relationships between TIPS and nominal Treasuries have been distorted by the illiquidity of TIPS relative to nominal Treasuries and the high level of chronic fails in the five-year sector of the nominal Treasury market. As a result, TIPS yields have climbed sharply relative to nominal Treasuries, leading to a sharp fall in breakeven inflation measures (exhibit 26). The fact that breakeven inflation rates have fallen more sharply in the five-year sector than in the ten-year sector has generated a rise in five-year, five-year-forward measures of inflation (exhibit 27). The distortions in the U.S. Treasury market suggest considerable caution in interpreting the rise in these measures. Interestingly, our Desk survey of primary dealers shows a slight drop in long-term inflation expectations since the September survey (exhibit 28).

Before concluding, let me note that the staff recommends approval of a \$15 billion foreign exchange swap line with the Reserve Bank of New Zealand to help satisfy the dollar funding needs of banks that operate in New Zealand. As noted in the memo to the Committee from Nathan Sheets and myself that was distributed on Friday, this would complement the swap agreements that we have already enacted with other advanced economies and would have the same technical features as those with the smaller advanced countries (that is, Australia, Denmark, Norway, and Sweden) with fixed swap line limits. Nathan will be discussing the potential for additional swap line authorizations for four emerging market countries recommended by the staff that were discussed in a second memo to the Committee on Friday.

There were no foreign operations during this period. I request a vote to ratify the operations of the System Open Market Account that have been undertaken since the September 16 FOMC meeting. Nathan will continue our presentation.

CHAIRMAN BERNANKE. Thank you, Bill. Nathan.

MR. SHEETS. In response to intensified global financial stresses, the central banks of four major emerging market economies—Mexico, Brazil, Korea, and Singapore—have recently expressed interest in temporary liquidity swap lines with the Federal Reserve. For the reasons outlined in our background memo, which was circulated on Friday, the staff recommends that the Committee approve these requests. We propose that the lines be sized at \$30 billion for each of these four countries, similar to our existing lines with Canada, Sweden, and Australia. We envision that these lines would expire on April 30, 2009, as is the case with our other swap lines.

We also recommend that these lines have several safeguards relative to our lines with central banks in the advanced economies. Notably, even following initial FOMC approval, the proposed lines could not be drawn on without further authorization, and individual drawings would be limited to \$5 billion. We recommend that the FOMC delegate to its Foreign Currency Subcommittee the authority to approve these drawings. The subcommittee would ensure that the dollars drawn would be used in a manner consistent with the purposes of the swap agreement. The central banks in these countries would also agree to publicly announce the fact that they had drawn on their lines and the mechanisms that they had used to allocate the dollar liquidity. These safeguards are designed to provide protections for Federal Reserve resources and to ensure that the swap lines are used in a manner consistent with our envisioned objectives. These safeguards, however, are not intended to be so onerous as to discourage the use of the lines if the situation warrants.

We see the case for these swap lines as resting on three important observations. First, each of these economies has significant economic and financial mass. Mexico, Brazil, and Korea are all large economies with GDP of around \$1 trillion, and Singapore is a major financial center. Given the structural interconnectedness of the global economy and the financial fragilities that now prevail, a further intensification of stresses in one or more of these countries could trigger unwelcome spillovers for both the U.S. economy and the international economy more generally. Our interdependencies with Mexico are particularly pronounced. Second, these economies have generally pursued prudent policies in recent years, resulting in low inflation and roughly balanced current account and fiscal positions or, in the case of Singapore, sizable surpluses. Accordingly, the stresses that these countries are feeling seem largely to reflect financial contagion effects from the advanced economies, including sharp reductions in risk appetite, rapid deleveraging by global investors, and a drying up of liquidity in dollar funding markets. Third, there is good reason to believe that swap lines with the Federal Reserve would be helpful in defusing the economic and financial pressures that they now face. These lines would promote financial stability by helping to ensure that financial institutions and corporations in these countries have access to dollar liquidity. Dollar funding pressures in Brazil and Korea appear to have intensified significantly. Such pressures remain less acute in Mexico and Singapore, but the authorities there view these lines as valuable protection should such pressures intensify, particularly over year-end. In

addition, the authorities in these countries have expressed the view that these lines could provide a significant boost to confidence, although such outcomes are admittedly hard to predict.

I turn now to two questions that have been the focus of energetic deliberations among the staff as we have formulated these proposals. First, is there some better approach that we could recommend? Second, what are the risks associated with initiating swap facilities with these emerging market economies, or EMEs?

As for the first question, we could ask these countries to rely on their sizable stocks of foreign exchange reserves. Across many contingencies, we believe that these countries do have sufficient resources to address financial pressures on their own. Consistent with this observation, they don't have any immediate plans to draw on their swap lines. In this sense, the lines serve as a backstop. However, in the event of intensified stresses, we believe that it would be desirable for these countries to be able to meet the dollar funding needs of their institutions by drawing on the swaps rather than by going into the Treasury or agency markets to liquefy their foreign exchange reserves. Alternatively, we could ask these countries to go to the IMF. Tomorrow, the Fund is likely to approve a large, rapidly disbursing facility that might be appropriate. That said, we see the IMF's efforts in this area as broadly complementary to those of the Federal Reserve. Meeting the potential liquidity needs of these large countries would strain the available resources of the Fund. Conversely, the Fund is much better placed than we are to judge the liquidity needs of smaller, less systemically important countries. As an additional consideration, these top-tier EMEs that we are recommending for swap lines are very reluctant to return to the IMF. Given the strength of their policies, they no longer view themselves as clients of the Fund and would prefer to go it alone rather than seek IMF financial support.

We note that there are indeed risks associated with our recommendation. One obvious concern is that the swaps might not be repaid. However, given the large reserve holdings of these countries, their prudent policies, the weight they place on good relations with us, and the safeguards built into the swap agreements, we judge the risk to Federal Reserve resources to be very low. More notable is the risk that approving these lines might cause us to be flooded with requests from many additional EMEs. Nevertheless, in proposing lines with these four countries, we feel that we have set the bar quite high. Their importance to the global economy and the quality of their policies set a standard that few, if any, other EMEs can match. In addition, the potential IMF liquidity swap facility might be helpful to us in limiting the risk of a slippery slope, as additional countries that request lines with us could be asked to go to the IMF. Similarly, European EMEs seeking swap lines could be encouraged to approach the ECB.

In assessing these issues, the staff has conferred with senior officials at the U.S. Treasury and the State Department. In both instances, these agencies emphasized the global economic significance of Brazil, Mexico, Korea, and Singapore. However, they also cautioned that expanding the swap lines beyond this group could leave us

increasingly vulnerable to a “pile on” effect, which might manifest itself either in a large number of additional swap line requests or in political pressure. Given these considerations, the staff would benefit from some signal from the FOMC regarding its willingness to consider swap lines with other emerging market economies. We see two broad options in this regard. First, the FOMC could indicate that it is not inclined to establish swap lines with other EMEs. Inquiries from additional countries could be forwarded to the IMF. Alternatively, the FOMC could emphasize that the bar for any additional EME facilities is high and that swap lines would be extended only if the case is seen as being comparable to that of the four countries that are being voted on today. Under this second approach, the FOMC might consider granting the Foreign Currency Subcommittee the authority to establish swap lines with the central banks of other large and systemically important EMEs. Bill Bassett will now continue our presentation.

MR. BASSETT.² Thank you, Nathan. I will be referring to the exhibits labeled in red, “Staff Presentation on Financial Developments.” The intermeeting period was characterized by persistent strains in financial markets and a sharp drop in asset prices. Although some markets have improved in recent days, the ongoing disruptions have generated intense pressures on financial institutions and have contributed to a significant further tightening of credit conditions for households and businesses. As Bill Dudley noted, spreads on credit default swaps (CDS) for financial institutions have been quite volatile. As shown by the top left panel of your first exhibit, median spreads for large bank holding companies (the black line) and regional commercial banks (the red line) declined substantially after the announcement of the Treasury’s capital purchase program and the FDIC’s temporary liquidity guarantee program on October 14; they ended the period almost 70 basis points lower, on balance. The median CDS spread for insurance companies (the blue line) increased substantially over the latter part of the intermeeting period amid concerns about the financial condition of these firms. Judging from the wide range of dealers’ price quotes on CDS for the same firms (shown in the top right panel), liquidity and price discovery in the CDS market remain strained.

The functioning of markets for corporate debt is also impaired. As shown by the blue line in the middle left panel, the staff’s proxy for the bid-asked spread on high-yield bonds spiked to more than 4 percent before partially reversing course over the past week. This spread is also unusually elevated for investment-grade bonds (the black line). As shown to the right, the average bid-asked spread on syndicated loans traded in the secondary market (the black line) jumped up over the intermeeting period. Secondary market prices for syndicated loans (the blue line) dropped to unprecedented levels, reportedly reflecting heavy sales by hedge funds that were forced to meet investor redemptions as well as the unwinding of some types of structured investments.

Municipal finance, the subject of the bottom two panels, was significantly disrupted by dislocations in money market mutual funds in September and record

² The materials used by Mr. Bassett are appended to this transcript (appendix 2).

withdrawals from long-term municipal bond funds in early October. Markets for structured products, such as tender-option bonds, that issued short-term variable-rate debt backed by longer-term municipal bonds were particularly affected. Yields on those short-term instruments (shown by the black line in the bottom left panel) jumped for a time, and the sales of the underlying long-term bonds as the structures unwound boosted long-term municipal bond yields (the blue line). As shown to the right, issuance slowed substantially until mid-October, when a few states—notably California—placed a sizable amount of new debt, though they paid fairly elevated interest rates to do so. In recent days, however, liquidity conditions have shown signs of improvement, yields have decreased somewhat, and issuance has moved back up from the extremely slow pace seen in the second half of September and the first half of this month.

Please turn to exhibit 2. As noted by Bill Dudley, prime money market funds suffered a wave of redemptions in mid-September, shown by the red bars in the top left panel. Although the flows diminished after the Federal Reserve and the Treasury announced steps to support money funds on September 19, prime funds lost about one-fifth of their assets, on net, over the intermeeting period. As a result, prime funds have dramatically reduced their holdings of commercial paper, generating significant disruptions in that market. As shown by the black line in the top right panel, unsecured financial commercial paper outstanding has declined sharply since mid-September, and the ongoing contraction in ABCP (the blue line) has continued. In contrast, the amount of unsecured commercial paper placed by nonfinancial firms (the yellow line) was little changed, on net, over the period. As shown in the middle left panel, broad equity prices (the black line) dropped about 30 percent over the intermeeting period as the outlook for both economic growth and earnings dimmed, and implied volatility increased to record levels. As depicted by the red bars to the right, those developments were accompanied by record outflows of about \$60 billion from equity mutual funds in September. Weekly data indicate that, over the first half of October, investors withdrew more than \$100 billion from long-term mutual funds, including about \$70 billion from equity funds, but outflows have slowed in recent days.

As shown in line 1 in the bottom left panel, M2 expanded rapidly in September and early October as some firms and households shifted toward safer assets. Liquid deposits (line 2) increased significantly in September and stayed about flat in October. In contrast, retail money funds (line 3) were little changed in September but have grown briskly this month. The sizable increases in small time deposits in both months (line 4) were widespread, in contrast to the more concentrated gains seen over the summer in response to elevated yields at a few financial institutions. Currency (line 5) began increasing rapidly in recent weeks, apparently supported by higher demand from both foreign and domestic holders.

As a result of the disruptions in short-term funding markets, a range of borrowers turned to banks for funding. The “other loans” category (the blue line in the bottom right panel) rose sharply beginning in mid-September as a result of both unplanned

overdrafts and draws on existing credit lines by nonfinancial businesses, money market mutual fund complexes, foreign banks, nonbank financial institutions, and municipalities. C&I loans at banks (the black line) have also increased significantly in recent weeks, as a broad spectrum of nonfinancial firms tapped existing credit lines. According to the October Senior Loan Officer Opinion Survey, however, about 25 percent of the largest banks and 35 percent of other banks surveyed indicated that C&I loans not made under previous commitment accounted for some of the recent increase.

Additional results from the survey are the subject of your next exhibit. Large net fractions of institutions reported having continued to tighten their lending standards and terms on all major loan categories over the previous three months, with some banks reporting that they had tightened lending policies considerably. As shown by the black line in the top left panel, about 80 percent of domestic respondents tightened their lending standards on C&I loans since July, and all but one of the 54 banks surveyed reported charging higher spreads over their cost of funds on such loans (the red line). As noted to the right, nearly all the banks that tightened standards or terms did so in response to a more uncertain or less favorable economic outlook and a reduced tolerance for risk. Almost 40 percent of domestic banks tightened in part because of concerns about their capital or liquidity position, somewhat more than had cited those pressures in July. As indicated in the middle left panel, a large fraction of domestic banks again reported tightening standards on commercial real estate loans over the past three months.

Moving to loans to households, almost 70 percent of respondents tightened standards on residential mortgages to prime borrowers (the red line in the middle right panel). As shown by the blue line, nearly 90 percent of the institutions that originated nontraditional mortgages tightened standards on such loans. As shown by the short black line in the bottom left panel, about 75 percent of the respondents tightened lending standards on home equity lines of credit, and about 60 percent tightened standards on both credit cards (the blue line) and other consumer loans (the red line). As noted to the right, almost 25 percent of banks, on net, reported reducing the credit limits on existing credit card accounts of some prime customers over the past three months, and about 60 percent of banks reported cutting existing lines of some of their nonprime borrowers. Banks that had trimmed the limits on existing credit card accounts most often cited the more uncertain economic outlook as a very important reason followed, in turn, by a reduced tolerance for risk and deterioration in the credit quality of individual customers.

Business finance is the subject of your next exhibit. The spread on BBB-rated bonds issued by nonfinancial corporations (the blue line in the top left panel) rose about 275 basis points over the intermeeting period, to more than 600 basis points, whereas that on bonds of financial firms (the black line) reached nearly 1,000 basis points before easing some in recent days. As spreads spiked and volatility increased, bond issuance by both nonfinancial and financial corporations (shown in the table to the right) dropped appreciably in the third quarter (row 3) relative to the pace seen in

the first half of the year (row 2). As shown in the last row, there has been no high-yield issuance by nonfinancial firms so far this month, and bond issuance by financial firms has come to a near halt.

In commercial mortgage markets, secondary market spreads on AAA-rated commercial mortgage-backed securities (CMBS), shown in the middle left panel, continued to increase on net, and no new CMBS have been issued for several months. As noted to the right, using announced earnings for about 200 firms and analysts' estimates for the rest, the staff expects third-quarter S&P 500 earnings to come in about 10 percent below the level posted in the third quarter of last year. Losses at financial companies account for the drop. Bank holding companies reported further substantial write-downs on mortgage-related and other securities as well as higher loan-loss provisions necessitated by widespread deterioration in credit quality. In contrast, earnings of nonfinancial companies are projected to have risen about 12 percent from a year earlier, but increased profits of energy companies account for virtually all of those gains. As indicated in the bottom left panel, analysts have revised down significantly their expectations for earnings of nonfinancial firms (the red line) over the next year, likely in response to the worsening economic outlook. Expected earnings for financial firms (the black line) also have been cut further this month. A rough estimate of the equity premium (shown in the bottom right panel) stands at an extremely high level.

The household sector is the subject of your last exhibit. As shown by the top left panel, interest rates on conforming residential mortgages have been volatile—partly in response to the renewed pressures on GSE debt noted by Bill Dudley—but ended the period only slightly higher at around 6 percent. The staff expects home prices (the black line to the right) to decline significantly further through the end of 2010 and mortgage debt (the red line) to be about flat over that period. Both paths have been marked down from the September forecast to reflect a weaker economic outlook and tighter credit conditions. Spreads on asset-backed securities backed by credit card loans (the black line in the middle left panel) and auto loans (the red line) have risen more than 150 basis points since mid-September, moving well above their spring peaks. The cumulative increase in spreads since midyear has hindered issuance of such securities, and the volume of new deals, shown to the right, dropped more than 50 percent in the third quarter. The latest data, available through October 17, suggest that very little issuance has occurred this month. As shown in the bottom left panel, consumer credit has decelerated recently. With lending conditions likely to remain tight and with spending on durables expected to be soft, the staff sees significant further weakness in consumer credit in coming quarters.

Summing up, although there has been modest improvement in several financial markets recently, the worsening of the global financial crisis sharply increased pressures on financial firms and markets over the intermeeting period as a whole. Those pressures have led to further deleveraging, diminished liquidity, increased concerns among investors about the economic outlook, and a reduced tolerance for risk-taking. The resulting sharp fall in asset prices and the further tightening of credit

conditions have had substantial adverse effects on nonfinancial businesses and households. That concludes my prepared remarks.

CHAIRMAN BERNANKE. Thank you. I'm going to open up in a minute to questions for Bill, Nathan, and Bill. I want to say just three brief things about the emerging market swaps. First, we have been talking with these countries for some time, and I think when the conversations began it was more of a preventive measure than a response to conditions. But the EMEs are now at a flashpoint in the financial crisis, and as I think Linda Kole will probably discuss, the urgency has increased, and the risks to the broader global economy are probably higher than they were a few weeks ago. Second, with respect to the choice of four countries that Nathan proposed—as he mentioned, we have talked to the Treasury and the State Department. I spoke to Secretaries Paulson and Rice about this. There was an interesting confluence of agreement that, if you are going to do this, these are the right four countries and we probably shouldn't do more, both from an economic perspective and a diplomatic perspective in the sense that these are the countries that among the emerging markets are the most important from a financial and economic point of view. Third, as I think Nathan also mentioned, the IMF is planning to create a liquidity facility, which will be a low-conditionality facility available to a broad range of countries. So there has been some discussion back and forth about the relationship between this, if we do it, and the IMF facility. I had a conversation this morning with Dominique Strauss-Kahn, the head of the IMF, and we agreed that the two facilities are complementary—that ours would provide important additional resources to the total availability of liquid resources for these countries. If we decide to take this step, we have agreed that tomorrow, after the IMF board approves their facility, we would jointly announce these two actions so that it would create an impression of cooperation and coordination between the Federal Reserve and the IMF.

So those are just a few additional pieces of information. I'm sure that you have plenty of questions. Who is first? No one? Ah, President Fisher.

MR. FISHER. Just to follow up on your note, Mr. Chairman, I spent four years as the senior trade negotiator with all four of these countries, and I'd just like to comment on their importance to us. Mexico is obvious. It's a national security risk. We're interlinked economically. They have a sophisticated central bank and a very good central bank governor, and I think that would be number one on the list. Singapore is unique. I doubt that Singapore would ever go to the IMF. It would be beneath Lee Kuan Yew's dignity. It is a vital link in terms of that sphere of the world. You made the case earlier, or at least Nathan made a case, as to the uniqueness of Singapore. In terms of Brazil, I'd say that is the dodgiest of the lot. However, we should remember that 40 percent of the GDP of Latin America south of the Yucatan is produced by that one country and roughly 60 percent of the population is represented by that one country. It has made significant progress since Cardoso was president, and it is a robust economy relatively speaking. Every economy in Latin America borders upon it. It does have a unique negotiating history—and Tim knows this as well as I do, having spent a lot of time negotiating with them—but I would say that it is a critical part of our hemisphere and that is the justification for including them in the package. Finally, we have been trying to negotiate a free trade agreement with Korea for some time. Korea is an underrepresented country in terms of discussions about developments in that part of the globe, and yet it is inordinately successful. I would argue that it is also a strong case to make. The only other country that I would include under the rubric that we might ever consider is Chile. Even though it is tiny, its representation is important and its nature unique. I think you could justify doing this by virtue of their immediate impact on our economy, their unique role in our hemisphere, and the fact that I doubt that they

would want to go to the IMF in the first place. Therefore, it is complementary to the package you announced earlier. My only discomfort in the discussion would be the idea of allocating to the Foreign Currency Subcommittee the authority to approve additional countries. As to the supplement for these four countries that has been proposed, I would be in favor of that. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. I thought there was some pretty good risk management described in the memo, but I didn't really follow or don't understand exactly the process by which we would generate a loss through these swap lines. Could you take us through the state of the world in which we would actually generate a loss? I raised this question before with the industrialized countries, and the answer was that because those are very high quality countries, we don't really have to worry about that. I understand that they follow pretty reasonable economic policies during normal times. But what are the safeguards, and what would be the process by which we would generate a loss?

MR. SHEETS. I very much agree with the thrust of the question—it would take a very severe state of nature for us to sustain losses on these. We are protected by the full faith and credit of our central bank counterparty. In addition to that, when we give them dollars, we take their domestic currency. So I suppose, in some very extreme state of the world, one could imagine that the loan that was made in dollars defaulted on the central banks, the central bank chose not to make us whole, and the currency that was escrowed for us had depreciated significantly in value. But I'd say that you are multiplying three very small possibilities, particularly the last two, that the central bank would choose to default on us, and there would

have to be such a substantial fall in their currency that it would reduce the value of that effective assurance or collateral or whatever you want to call it.

MR. EVANS. Okay. But it would be that we have their currency and presumably that would be a state in which it had depreciated.

MR. SHEETS. Absolutely. These would function very similarly to the swap lines that we have with the advanced economies. In addition, we are going to allow them to draw only \$5 billion at a time at the discretion of the Foreign Currency Subcommittee. When the Foreign Currency Subcommittee makes the determination as to whether or not a drawing should occur, it has the scope and the mandate to look broadly at what is happening in the economy and make sure that the resources are going to be used in a manner that is consistent with the terms and the expectations of the swap agreement.

CHAIRMAN BERNANKE. Vice Chairman?

VICE CHAIRMAN GEITHNER. A clarifying question, Mr. Chairman. Nathan, on page 4 of the memo, at the last bullet, you say, “FRBNY would have broad ‘set-off rights.’”

MR. SHEETS. Yes, indeed. Maybe Trish and Bill want to jump in here as well. What this means is that, in extinguishing any obligation that arises from the swap agreement, if the central bank for some reason doesn’t pay us, we can take other assets on the books that are being held by the Federal Reserve Bank of New York to extinguish those liabilities. Does that make sense? So if the Brazilians are holding some additional assets at the New York Fed that are unrelated to the swap and they are not making good on the swap, we can draw on those other assets to extinguish the obligations from the swap.

MR. ROSENGREN. But there is nothing that prevents them from withdrawing those assets before that, right? Presumably, if they're in a situation of default, they would withdraw any Treasury securities held here first.

MR. SHEETS. They could do that. But any drawing under the swap agreement would be no longer than three months, and some drawings would be much shorter. So they would have to move very quickly, given the short nature of these transactions. But there are certain states of nature that are so severe that we couldn't rule it out.

CHAIRMAN BERNANKE. Vice Chairman.

VICE CHAIRMAN GEITHNER. Let me just state my understanding of this so that I can be corrected by Nathan or by Bill. These countries hold substantial amounts of their reserves in dollars. They hold a substantial fraction of those dollars in accounts at the New York Fed. If they defaulted on their piece of the swap and the falling value of their currency left us with some exposure, we would have the ability to take assets from their accounts to cover any loss. So it's better than the fact that this is a sovereign credit and it is better than the fact that we have an asset on the other side of the swap, because they hold substantial foreign exchange reserves with us. The way to think about this is just as a mechanism to help them transform the composition of their dollar reserves in a way that might be more effective in responding to lender-of-last-resort needs in dollars, rather than having to sell Treasuries or agencies into the market in a period of panic or distress to meet that cash need. I meant it as a confirming question.

MR. SHEETS. I agree.

MR. STERN. But I thought we were concerned about a shortage of Treasury collateral in the market. So why wouldn't we want them to sell, and in fact, what are reserves for if they don't use them in these circumstances?

VICE CHAIRMAN GEITHNER. I have never stood in their shoes, so I'm not sure I fully understand it. You are right that the world is a little short of the risk-free asset now, and so a greater supply would be terrific in some sense. But they have a general view, which I think our people share, that to meet the kind of lumpy, unpredictable, potentially large needs for lender-of-last-resort purposes you may face in our currency, you have to manage reserves in a way that you can meet those needs without selling Treasuries or agencies. It would not be so terrific for the world. I have never stood on the other side, but that's my basic sense. Another way to think about this is that the privilege of being the reserve currency of the world comes with some burdens. Not that we have an obligation in this sense, but we have an interest in helping these guys mitigate the problems they face in dealing with currency mismatches in their financial systems. We have an interest in helping them meet that in some sense. It's not our obligation. We have the same basic interest that led us to be responsive to the European need in some cases. These guys are different in that they actually have managed the countries' balance sheets better because they at least have a huge amount of their assets in dollars. That should make us in some ways as comfortable as—maybe more comfortable than—doing it with the Europeans because they ran a banking system that was allowed to get very, very big relative to GDP with huge currency mismatches and with no plans to meet the liquidity needs of their banks in dollars in the event that we face a storm like this.

CHAIRMAN BERNANKE. President Lacker, you had a two-hander?

MR. LACKER. Yes. President Geithner, you described the EMEs as motivated by a desire to transform their reserves from illiquid Treasuries or from Treasuries to some more fungible and more convenient form of dollars. That strongly suggests collateralizing their swap

line with the Treasuries rather than their own currency. What would be the disadvantage of doing that?

VICE CHAIRMAN GEITHNER. I think effectively we have done that by the way in which the thing is structured.

MR. LACKER. But the point that President Evans made is that we're not constraining them to not withdraw the reserves.

VICE CHAIRMAN GEITHNER. Do you mean that you want to put a reserve floor on them, too?

CHAIRMAN BERNANKE. The question is whether, in an unlikely but possible state of the world in which they don't want to pay us back, they could withdraw their Treasuries in advance of defaulting.

MR. LACKER. Or we could lend to them, collateralized by the Treasuries rather than by their own currency.

VICE CHAIRMAN GEITHNER. Well, lots of things are possible. I think this is a pretty good conservative balance.

CHAIRMAN BERNANKE. That would basically be a repo agreement, I guess.

MR. SHEETS. For what it's worth, the ECB has entered into something similar to that with the Hungarians, in which the Hungarians are able to repo to them long-term euro-denominated stuff and get euros back.

CHAIRMAN BERNANKE. Governor Kohn.

MR. KOHN. Thanks. I think I'd be a little concerned about stigmatizing the swaps by saying that we have enough doubts about these other countries that we need to take collateral—we don't have confidence that their central banks will meet the obligations that they have taken

on. So my preference would be to stick with the extension of our current swap agreements to these countries. I think they all are using their reserves to some extent already, so this is not a case of them not touching their reserves and instead taking the swaps. They say they don't intend to use them, but they could very well use them. They're already using them.

The other market that the Treasury has expressed some concern about is the agency market. If they were just meeting a huge demand for Treasuries by selling Treasuries, that might be one thing—although intermediate- and longer-term Treasury yields themselves have moved up presumably because of supply pressures there. But the agency spreads have widened quite a bit, and I think forcing them to sell agencies in a kind of lumpy way would feed back on our mortgage markets. It would not be in our interest.

CHAIRMAN BERNANKE. President Fisher, a two-hander?

MR. FISHER. Just responding to President Lacker. I think it would be an insult to these four parties, particularly given the fact that we appear to have negotiated, again, the ability to attach other assets. I am, frankly, surprised that Singaporeans would go along with that. If we got that, I'd use it and pocket it. But I would argue, especially for the case of Mexico, that I don't see any reason that we should differentiate between them and Canada, for example. It would stigmatize them in a way, and it would be an insult to these people. At the same time, as I think I understand the explanation from Vice Chairman Geithner and from Nathan, we do have some ramped-up security here—so it's a special arrangement. I think going further than that would not be appropriate.

CHAIRMAN BERNANKE. Let me say just a couple of quick things. One is that this would require renegotiating the whole thing from the beginning, and we would like, if possible, to do this tomorrow with the IMF. The second point I would make is that we do have

considerable security, and we will be dispensing this—under strict conditions—in limited tranches. I think we could monitor pretty well what was going on. But the point is well taken. President Plosser.

MR. PLOSSER. I have just a clarification. This is a question. Don't we already have a swap line, a standing facility, with Mexico as a part of NAFTA? So we don't have to add it.

MR. SHEETS. We do have a swap line with Mexico. It's a standing swap line. It's \$3 billion under the North American Framework Agreement. It's the counterpart to NAFTA. Under that agreement, we also have a \$2 billion swap line with Canada. Here we would be adding a new temporary liquidity swap line, so it would be a new legal construct.

MR. PLOSSER. I guess my question is why we can't use the swap line that is already in existence.

MR. SHEETS. In principle, if you were so inclined, you could probably just raise the size of the existing swap line to \$30 billion. However, we built in a variety of mechanisms and safeguards in this proposal. In addition, the structure of what we're putting forward is tailored particularly to meet the kinds of challenges and liquidity pressures that exist right now. So in some sense this one is structured to meet the challenges that the Mexicans are most likely to face in the current episode rather than the more generic one that already exists on the books.

CHAIRMAN BERNANKE. Let me go to President Rosengren, who has been waiting patiently.

MR. ROSENGREN. I have two unrelated questions. One follows up on this, but the other one is on the term auction facility. First, given how much we have expanded the term auction facility, is there any consideration to having a minimum stop-out rate, given that the last two have had fairly low stop-out rates? I wonder if that was being considered at all, given how

much we expanded the size. Then the second question gets to the stigma issue related to the swap lines. There was quite a lot of discussion about how to differentiate the countries. I had the same thought that President Lacker had—if we could have set-off rights that enable them to collateralize the swaps. I do think going to the IMF will attach a fair amount of stigma to the organization. So I am worried that the spillover benefits to other countries will be negative, not positive, because of that stigma. One option would be to say that either you could go to the IMF or we would provide collateralized loans for other than these four, since it sounds as though these four are a done deal. But rather than trying to draw the line and figure out whether Chile or some other country is appropriate, we could collateralize it. If they held enough Treasury securities at the New York Fed, then it would seem that we would have no reason not to do it. If they didn't have Treasury securities, which would probably partly reflect some of their own mismanagement in their countries, then they wouldn't be able to use the facility and would have to use the IMF. But it would seem to be a way to get around some of the stigma issues, if someone chose to come to us and fully collateralize it. That might be an alternative way to draw the line rather than trying to come up with criteria that seemed a little difficult to understand, as I went through the memo.

MR. DUDLEY. Under the term auction facility, there is a minimum bid rate, the OIS rate. So when we have a \$150 billion auction and let's say there are propositions of \$120 billion, the winning bid rate is the OIS rate for everybody.

MR. ROSENGREN. But I'm just wondering, as the OIS rate has come down, when you think of the band that we have for excess reserves, it does seem that the OIS provides a much bigger band, for example, than what we have even for excess reserves. I wonder whether, during

periods in which people are considering a reduction of as much as 50 or more basis points, the OIS ends up being a very low lower bound.

MR. DUDLEY. Yes, right now it is a very low rate because the market is building in future rate cuts. So I think the OIS rate is now below 1 percent on a three-month basis.

MR. ROSENGREN. But as we narrow the target for excess reserves and have a narrow band there, you wonder whether the stop-out rate, having a lower band that is a little higher than the OIS, might be an alternative way to think about it, now that we have the excess reserves option as to the lower bound.

MR. DUDLEY. I think that is something worth considering. The emphasis right now has been getting term funding out in as much size as possible and not worrying so much about whether the cost of the funds is or is not at a penalty. So I think the emphasis of the program did shift a bit over the past six weeks. Obviously, if things settle down and the demand at the TAF auctions subsides, then you can have the option of cutting the size of the auctions or increasing the minimum bid rate or some combination of the two.

VICE CHAIRMAN GEITHNER. Mr. Chairman, may I make an amendment to Eric's question or suggestion? I think that, when we have a chance to breathe and we feel as though we have achieved some durable stability in the panic, then we will want to reassess not just the basic complement of our facilities and how we think about the future but the relative economics of what we've done with the dollar swaps and our existing open-end auction facilities for institutions. Ideally, we want a situation in which it is more attractive for them to borrow from their foreign central banks—the dollars we provided through the swaps—than to come to us in our auctions and other areas through their U.S. affiliates.

I am a bit less troubled by the point you made than I am by the fact that we have set up a regime in which the incentives for them to come to our facilities are still substantial when they have now the ability they didn't have before to go to their foreign central banks for dollars in large scale. As we think about consolidation and not just exit—about how we prepare the ground for a shift over time—I think we want to come back to looking at the relative economics between our dollar facilities for U.S. banks and U.S. affiliates of foreign banks and what is open to them from their home country central banks now. As part of that, we could think about size, reserve price, and price in our auction.

MR. DUDLEY. The awkward thing right now is that we are trying to add liquidity as powerfully as we can. So to raise the minimum bid rate or do anything that somehow suggests a pulling back would be a bit inconsistent with the LIBOR–OIS spread widening that we have seen and the fact that it still remains very, very elevated. You might want to do exactly what you suggested, President Rosengren, at some future date, but I think that doing it now would send a very mixed message to the market. I think people would be confused about what we are doing.

CHAIRMAN BERNANKE. President Hoenig. I'm sorry, Nathan had an answer.

MR. SHEETS. Could I just respond to President Rosengren's second question?

CHAIRMAN BERNANKE. Go ahead.

MR. SHEETS. I think you put your finger on two very difficult judgments that we made when structuring this facility. I don't see the risk of creating stigma for emerging market economies that are not in our swap network as being a first-order concern. It is broadly recognized that the folks that we are recommending are larger, more systemically important, and as well managed as anybody else. If you were sitting down to make a list—and the Fund has recently done this—the economies that we're recommending would be at the top of the list, and I

think that is recognized by essentially all observers. So I see what we're doing here as really ratifying perceptions rather than creating new ones.

On the second point, the choice between the swaps versus the repos, that one is particularly tricky. I very much agree that the repos would give us a little more security. On the other hand, the swap framework gives the emerging market economies a little more flexibility. As to how they are going to proceed, as President Fisher mentioned, it also creates symmetry between the industrial countries and the way we're treating them and the emerging markets and the way we're treating them. Given the successes of many of these economies over the past ten years, I see this as being an appropriate step. Nevertheless, I admit that the choice between the swaps and the repos is a difficult one. Another thought is that the repo structure might provide a bit more security, but we have tried to get that security through other ways—through tranching, careful reviews, and so on.

CHAIRMAN BERNANKE. President Hoenig, I'm sorry. Go ahead.

MR. HOENIG. No, no. In fact, it follows right on with what Nathan was just answering. That is, for the moment we are creating kind of a broader in-list for these four countries and stigma with the non-accepted group at this point. What will happen, then, if we do have an issue that involves—pick a country—Chile? Are we going to send them to the IMF? Are we going to have our subcommittee make a decision as to whether to give them a swap? If we do that, will that then create uncertainties about others? Are you really not concerned about the stigma and the implications of this, especially—I guess they are asking this in anticipation of the possibility, even though they think it's fairly remote—would we not be increasing the probabilities of a problem by doing this now? I know these are tough questions; but in this environment, I am anticipating a bad event. So what do we do in the case of that bad event?

MR. SHEETS. I would hope that initiating these swaps would reduce the probability of bad outcomes in the emerging market economies. Certainly, if Brazil, Mexico, and Korea are up against the ropes and experiencing significant financial stresses, my sense is that it would be an environment in which many other EMEs would be experiencing negative spillovers. So to the extent that we can backstop these major linchpins in the emerging market world, I see that as having very positive effects for others. That would be one point. Second, the decision as to how to handle Chile, if Chile comes to us for a swap line, I think is very much a policy decision for the Committee to determine. As I said in the remarks, we as staff members would very much appreciate some sort of signal from you as to whether you want to say four and that's all we're willing to do, and everyone else—Chile, India, and South Africa—goes to the Fund? Or is the Committee open to having potentially a few other large, important emerging market economies have swap lines with the Federal Reserve? I see that as being a policy decision.

MR. HOENIG. But it's something that we ought to think about sooner rather than later because the likelihood is that, if you take care of these four and you get another request, you are going to get three others and not one other.

MR. SHEETS. Wherever you draw the line, there is going to be somebody who is just a bit away from the line that says, "I am very similar to those folks." I am reasonably comfortable with where we draw the line. Here there is as much gap as you're going to find. In my mind, the next one for which you could make a case would be India. However, India's financial system isn't as developed as is the case with these folks. They are not as integrated into the global financial system as is the case with these, so there is a bit of space there. But these are admittedly hard judgments, which we tried to flesh out regarding some of these issues in our memo.

MR. FISHER. Have we been approached by any other countries?

MR. SHEETS. Yes, indeed, we have. We have been approached by [552 U.S.C. (b)(4)]

[redacted], and we have had very informal inquiries from a couple of other countries, including

[552 U.S.C. (b)(4)].

CHAIRMAN BERNANKE. But we have not encouraged that.

MR. SHEETS. We have done everything we possibly can to discourage it.

CHAIRMAN BERNANKE. Just to be clear.

MR. SHEETS. That's right. We're not advertising.

CHAIRMAN BERNANKE. President Lockhart.

MR. LOCKHART. Another question for Nathan on swap lines is how this works exactly. If the pattern holds and Mexico, for example, supports its banking system—in the case of Mexico it is a little different from others, in that all of the large banks are foreign-owned (Citibank owns Banamex, and the Spanish banks own the other two or three large banks)—where does our responsibility stop and theirs begin? Is it possible for the subsidiary of a U.S. bank or a Spanish bank to draw dollar liquidity in Mexico and with fungible dollars move that around the world? Or does it in one manner or another stay in Mexico?

MR. SHEETS. A couple of thoughts. Certainly these home-versus-host issues bedevil many, many discussions of banking issues right now. They are true in Mexico, as you suggested, and they are true in spades in Central and Eastern Europe, where instead of U.S. banks there are European banks in the tension between the home and host. So these considerations are very relevant and also exceedingly complicated.

If the Bank of Mexico or the Mexican authorities move to address tensions in their financial system, the standard that has been set by several Federal Reserve actions, the Brits in

the things they have done, and I believe a number of the other countries is to include subsidiaries of foreign firms that are operating in that country. So, for instance, for the United States, Deutsche Bank's U.S. subsidiary has had access to our various facilities, and that has been the coin of the realm in the announcements today. So my feeling is that Banamex, which is owned by Citi, would have the same access to these kinds of facilities as other Mexican institutions. Now, there is no guarantee of that, but that would be my feeling. Regarding the question of, once a Mexican institution gets its hands on dollars, what happens to those dollars, my understanding is that they can move around. In fact, in a discussion, Guillermo Ortiz indicated that to date Mexican institutions were net suppliers of dollars to the United States rather than the other way around.

MR. LOCKHART. So in the case of a foreign bank—they lend to a foreign bank in their country, in Mexico in this case—defaulting, whose problem is it? Is it the home country supervisor's problem, or is it Mexico's problem vis-à-vis us?

MR. SHEETS. I would guess that it is a joint problem.

CHAIRMAN BERNANKE. Vice Chair.

VICE CHAIRMAN GEITHNER. I'm not sure that this is helpful, but maybe I can give a slightly different example from another perspective. We have a bunch of U.S. affiliates of some of the weakest European institutions that have faced very substantial dollar funding needs and have come to us and asked for substantial ongoing access to liquidity. When they have a substantial amount of lendable collateral, collateral with substantial market value relative to the needs, we have been comfortable meeting those needs. When their needs have substantially exceeded or might potentially exceed the market value of their eligible collateral, then we have talked to the home central bank. We have said that, in effect, if you want us to be able to meet those needs and they

have collateral in your market that is substantial relative to those needs, then the better way for us to do this is for the home country central bank to meet their dollar liquidity needs against the collateral there or meet the liquidity needs and we provide the dollar's worth of guarantees from the central bank.

So this home–host thing is a delicate balance, and as Nathan said, it shouldn't all fall on the host central bank. The best thing possible is for the home country central bank to take most of the responsibility for meeting the liquidity needs and for us to help them facilitate that where necessary. But when those needs exceed what we would normally give in terms of access, then you have to have a conversation with the foreign central bank. So, for example, if a weak U.S. institution in Mexico faces substantial needs in Mexico well in excess of their eligible collateral in Mexico, I suspect they would call us and say, "We want you to meet those needs." We would have to consider at that point where they are in the liquidity-solvency spectrum and how comfortable we are in meeting those needs.

CHAIRMAN BERNANKE. Very good. President Lacker.

MR. LACKER. I have a question for the staff. You noted that the countries believed that this would help market confidence. So the choice of extending a line is potentially consequential here. I have a two-part question. First, what do you think the risk is of the uncertainty surrounding whether particular other countries will or will not in the future be able to obtain a swap line from the Federal Reserve? Second, what would you suggest that we say if asked by the public or if the Chairman is asked in the Congress about what criteria or principles we used to draw the line between the countries that have swap lines and those that don't? I know that you posed the question to us, but what would you suggest that we say?

MR. SHEETS. As outlined in the memo and then also my remarks, the first is that we are looking for economies that are large and systemically important. The second is that we are looking for economies in which their policies have been strong and it appears that they are largely being influenced by contagion. The third piece is countries for which we believe that the swap line might actually make a difference.

Now, let me just give you a concrete case of the third criterion because that's a little more abstract than the first two. Iceland came to us and requested a swap line of approximately \$1 billion to \$2 billion, which would have been 5 to 10 percent of Iceland's GDP—so it was fairly large relative to the size of the country. But the liabilities of the banking system were on the order of \$170 billion, and the underlying problem was really that there was a loss of confidence in its banks. We came to the conclusion that a \$1 billion to \$2 billion swap line was very little ammunition to use against a potential loss in confidence in this \$170 billion financial system. For that reason, we as the staff recommended against a swap line for Iceland.

Those are the three conditions that we'd emphasize. Sort of subsidiary to that is that I think it is very appropriate for all the European EMEs to report to the ECB for their liquidity needs. That would further constrain the list of countries that we'd look at. As we work down the list of countries, I think it gets easier to say "no" in that fewer and fewer of the countries can make a case that they are large and systemically important. With the risk of creating stigma, some countries are big, and some aren't, and that's pretty darn objective. Now, you can debate about, well, what's big and what isn't and where you draw the line, but it just so happens that these three major economies that we're putting forward all have GDP of around \$1 trillion. That seems like a reasonable line to draw. Again, there's an element of arbitrariness here, but any line you draw will have an element of arbitrariness to it.

MR. LACKER. And the first part of my question?

MR. SHEETS. Oh, I thought I got it. What was the first part?

MR. LACKER. What sort of uncertainty might this engender about the likelihood of other countries qualifying? My recollection is that many economists have claimed that the IMF had this trouble in the 1990s, when interventions would give rise to uncertainty about subsequent interventions in other cases.

MR. SHEETS. Well, I guess I'm not sure I know exactly what you're driving at. Are you concerned that, by moving on these, we're sending a negative message about the ones we're not moving on?

MR. LACKER. I'm just wondering about the uncertainty that might be created about the lack of clarity about who's in, whether this is the final list, and so on.

MR. SHEETS. Our press release that we are negotiating lists, as clearly as one can in a press release, the criteria that we were looking at—that they are large, well-managed, fundamentally sound, systemically important countries. So we are trying to communicate that. In addition, in conversations when these folks come to us—and especially if we get some direction from the FOMC as to how you'd like to proceed on this issue—we can be very, very blunt with them in telling them why the answer is “no” or “yes,” depending on which way the FOMC goes.

CHAIRMAN BERNANKE. Vice Chair, did you have a two-hander?

VICE CHAIRMAN GEITHNER. Well, I just want to point out that I think these are absolutely the right kinds of questions about this. But I think these concerns are substantially mitigated by the fact that the IMF is putting in place a facility at basically the same time, which will be there with relatively little stigma for a range of other countries that need it. There will be a universe of other countries that would not meet the test for eligibility for this swap type of facility,

for the IMF or us, that will have to go through a program with conditionality and a bunch of adjustments such as Iceland is going through or Hungary will go through.

So it is right to raise these questions. But the boundary problems around our swap lines are substantially mitigated by the fact that there is a new facility coming out that's going to the same place. Raising the question of why we need to do our swaps is good, too, but you've heard lots of good arguments for that, and I think that realistically there's a natural division of labor between what central banks have classically done with each other in the swap context and what the IMF does. What we're doing is a natural extension of what central banks do. The IMF is moving a little further in from where they are in this case, and I think that will mitigate some of the signaling problems and uncertainty created by having this evolution in the scope of swap lines.

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. I guess I'm worried about this for all of the considerations that President Hoenig and President Lacker have just been talking about. I don't know where we draw the lines, and when we have to go to the State Department and start asking what countries we can or can't develop swap lines with, I'm not sure those are the criteria we want to be using. We mentioned the countries already. What happens when 552 U.S.C. (b)(4)

[REDACTED]? You can just go down the list.

MR. SHEETS. We have already said "no" to some of those.

MR. PLOSSER. I understand, but if you really follow the logic of the argument about being large and systemically important, if we draw a line somewhere, we start expanding this now bit by bit and we draw a line somewhere, and the question then becomes, Will markets begin to question other countries on the periphery and create problems? It's not that any one of them—552 U.S.C. (b)(4)
[REDACTED], I don't know, pick one—is large and systemically important, but by doing what we're

doing and creating the uncertainty that President Lacker was referring to, maybe we are forced to go and do it collectively because they all band together and as a group say, “We’re all facing this problem. Why can’t we have the same access?” Partly I like President Rosengren’s suggestion about using repos with securities, which we have here as a mechanism. Alternatively, if the IMF is creating a largely unconditional or low conditionality type of program, why not just say that everybody else goes to them first? If they tap out of the IMF access, maybe then we might consider being a backstop rather than their coming to us in the first place. I just don’t know where this ends. I think that, with all of the questions you raised and tried to answer, you hit it right on the head. On all of them that you said were kind of marginal, you went one way, and I’m leaning the other way on the same criteria.

CHAIRMAN BERNANKE. President Plosser, a couple of things. The IMF has very limited resources. They’re not remotely able to meet the needs of—

MR. PLOSSER. We don’t know what the needs are yet, do we?

CHAIRMAN BERNANKE. Well, the resources are very limited. The other thing is that the staff asked for guidance on the limits here. I’d like to propose that, when we get to that point, to ask the voters to suggest how they stand and what qualifications they might have. One thing that you could do, for example, would be to say, “I do or do not support this, but if I do, I think a very sharp line should be drawn at this point and be communicated that way.” The legislative history can be part of this, and we can communicate to the staff how we feel about potential extensions.

MR. SHEETS. Just to put some numbers on IMF lending capacity—total IMF lending capacity is about \$250 billion. To get even that high they have to call in some special arrangements that they have with a variety of countries. The maximum capacity is \$250 billion. So the \$120 billion that we’re proposing today would be essentially half of what the IMF could do. In that

sense I really see what we're proposing as our taking off the IMF's hands some of the largest potential liquidity needs, which then allows them to focus on a whole range of additional countries. A related point is that I understand that, in an IMF executive board meeting today, the managing director indicated that they are getting a fair amount of interest in this new facility. It really is a different kind of facility, and frankly, even a week ago if you told me that the IMF was going to be able to put this facility together in this quick a time, I would have said, "No way. There's no way that the IMF can move this quickly." So it is about as good as we could expect and maybe even better than what we could have expected from the Fund. I think that they are doing what they can to minimize stigma. On the other hand, they don't have enough lending capacity to really handle these folks that we're talking about today.

CHAIRMAN BERNANKE. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. In the Bluebook here, it says, "Additionally, the Swiss National Bank announced plans to draw on its swap line to help finance up to \$60 billion in purchases of assets from a major Swiss bank." So is that really what you have in mind here for a country like Brazil—that they'll draw on their swap line to purchase assets from banks?

MR. SHEETS. No, and maybe the folks in New York want to talk a bit more about this. The transaction with the Swiss National Bank was a very special transaction that occurred outside the typical constraints of the swap lines that we'd be agreeing to with these folks. In the swap lines with these folks, they would have to tell us up front how they're going to allocate the resources. We would envision that it would be done in something similar to an auction, in a very transparent, on-market sort of way. But it would not be that kind of a transaction, which was a special case in order to help a particular financial institution.

MR. BULLARD. Well, if you think that there are systemically important institutions in these countries, why not?

MR. SHEETS. Again, we're drawing lines here. I am not prepared to give these folks carte blanche. That's why we've added additional safeguards and additional governance structures to these facilities. Maybe the Committee has a different view on that, but I wouldn't be prepared to let them do whatever they wanted with these resources.

CHAIRMAN BERNANKE. President Lockhart.

MR. LOCKHART. To continue to grill you, Nathan—

MR. SHEETS. I'm earning my pay today.

MR. LOCKHART. You know, the atmosphere right now is largely precautionary on their part—they are well capitalized with foreign currency reserves. But if we want to deal with hypotheticals, let's assume that some of these recipients of the swap lines get into a liquidity crisis. Is the European Central Bank being approached for swap lines? I recognize that they need dollar liquidity, but in a general liquidity crisis, the euro would do as well to help. Do we have any sense of whether the ECB is considering swap lines for some of these emerging markets?

MR. SHEETS. I don't have details on that. As I've mentioned, I know that they have created a facility with the Hungarians, a €5 billion facility. They were also approached by Iceland at the same time that we were. I would speculate, but I don't have any basis for that speculation, that given the emerging tensions in Central and Eastern Europe and Northern Europe that they probably are being approached, but I don't have any details on that.

MS. MOSSER. My understanding is that they have been approached. I don't know what decisions have been made other than the ones that may have been mentioned. In addition, they have opened a swap line with the Danish Central Bank in euros, which was virtually identical to the

dollar arrangement that we have with the Danish Central Bank. So they definitely have been approached for swap lines. On how many of them they'll put into place, we don't have any particular information at this point.

MR. LOCKHART. Thank you.

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. I just want to clear up the question. I think Tim and Nathan may have both answered this, but it's a question that President Lockhart raised earlier. In Mexico's case, for example, where almost all the major banks are foreign owned—EU banks, Spanish banks—those banks clearly have access to dollars through the ECB swap line. There's no reason that the dollar funding needs of those banks, to the extent that they can move these things around, can't be satisfied by access to dollars from the ECB. Is that a correct or an incorrect assumption?

MR. DUDLEY. The collateral isn't always in the right place. You are absolutely right if the collateral could be easily moved; but the collateral oftentimes isn't in the right place.

MR. FISHER. Let me ask Nathan a question to follow up, if I may. Obviously you've been approached by the governor of the Central Bank of Mexico—Ortiz has been here to visit.

MR. SHEETS. Indeed.

MR. FISHER. So what's his argument? I would assume that you asked these questions.

MR. SHEETS. Yes, absolutely.

MR. FISHER. So inform us as to what his justification is.

MR. SHEETS. Mexico is experiencing increased financial stresses, particularly in its corporate sector, where recently some bad bets on structured finance products have emerged, and Ortiz was very concerned about continued confidence in the Mexican economy. Now, that said, from what he had to say, dollar funding pressures had not yet emerged, and he was emphatic that

they would not draw on these until the time that those funding pressures emerged or until the time that they saw a significant further deterioration in conditions in their economy. He was very specific about the fact that they would use their own reserves as their first, second, and third lines of defense.

MR. KOHN. Just to add to that, he said that, to deal with the issue that Nathan raised about the problem with their businesses and the kind of dollar needs they had, they were meeting those needs out of their own foreign exchange reserves. So they were not going to engage in a swap with us in order to meet that particular problem, but they were concerned about the dollar pressures more generally on their financial segment, particularly as year-end approaches.

CHAIRMAN BERNANKE. If it's okay, maybe we could just go ahead with the votes on this. I'd like first to do the open market operations, which I hope are not too controversial. There was no discussion of the New Zealand swap line. I'll ask to see if there is any comment on that. Then on this issue, I'll take a set of positions from the voters, if that's okay. So let's go back to domestic open market operations.

MR. KOHN. I move that we approve.

CHAIRMAN BERNANKE. Without objection. The New Zealand swap.

MR. KOHN. I move we approve that, too.

CHAIRMAN BERNANKE. Is there any discussion or concern? All right. Without objection. Now, turning to the resolution on the EME swaps, in the interest of time I propose—and I hope it is okay—to go through the voters and ask each one to state whether you are in favor or opposed. You can say what you want and, if you want, whether you have some argument to make or if you're conditionally in favor—for example, I'm in favor if X or if we do Y—but just to get a

sense of where everybody is, and then we'll decide what to do. Okay? So let's go down the roll here. I'm in favor.

MR. FISHER. Any conditionality?

CHAIRMAN BERNANKE. I think we should be fairly tough at this point. Vice Chairman.

VICE CHAIRMAN GEITHNER. I'm in favor. On the basic question of how you would deal with other requests beyond the four, Nathan gave two options. One is that you delegate to the subcommittee discretion to make those judgments. The second option was to say, "No, not without coming back to the Committee." I do think it makes sense to see how the IMF thing works and how it is received, how much participation they get, and how these boundary problems and the signaling problem play out, and it is probably a good idea for the Committee to have at least a briefing about how that is playing out so that there is some context going forward. I would be in favor of your delegating that authority to the subcommittee, as you would expect me to be, just because sometimes these judgments need to be made quickly. But I certainly understand why people would want to have a better sense of how this is unfolding and how we deal with it. The boundary problems are going to get worse if we have to go broader than this.

CHAIRMAN BERNANKE. Governor Duke.

MS. DUKE. I'm in favor.

CHAIRMAN BERNANKE. President Fisher.

MR. FISHER. I'm in favor Mr. Chairman, and I would also favor, in terms of the screening device for future requests, that you come back to the full Committee. Thank you.

CHAIRMAN BERNANKE. Okay. That's understood. Governor Kohn.

MR. KOHN. I'm in favor, Mr. Chairman. I think these boundary problems are difficult. I agree with the Vice Chairman that our having the IMF there mitigates them. I was encouraged by Nathan's sense that there are some people interested in the IMF, so there might not be much stigma there. I would be in favor of very strongly encouraging other countries to go to the IMF.

CHAIRMAN BERNANKE. Governor Kroszner.

MR. KROSZNER. I, too, favor the facility. I think it's very important that we are tranching this and using somewhat different ways of providing the money to these countries than we have with other countries because, as President Bullard and others mentioned, if we're not careful, this could be used for purposes with which we are not comfortable. It could be used for supporting a currency, and I don't think we'd be particularly comfortable with that. Obviously, we have to be realistic. Money is fungible. They have very large reserves. They could be using the reserves for these other purposes and using the swaps for purposes that we find acceptable. But I think, given the circumstances, it makes sense to be coming up with something that's complementary to the IMF facility and make sure that the IMF facility and our facility together are sufficient to deal with the pressures in this environment. I would be satisfied to delegate the authority to the subcommittee.

CHAIRMAN BERNANKE. President Pianalto.

MS. PIANALTO. I'm also in favor of the program, and I agree with Vice Chairman Geithner's comments that this announcement along with the IMF program should be sufficient. But if there are other requests, I think it is important to bring them back to the Committee.

CHAIRMAN BERNANKE. Understood. President Plosser.

MR. PLOSSER. I guess I'll approve, but with reluctance. I think this is a very slippery slope. I'm worried about other central banks ganging up on us as a group, saying that they have to have this. I would prefer that even these large countries use some combination of the IMF facility

plus their own reserves to meet these needs. I think that would be a better outcome and better for us in that regard. So that's a very reluctant "yea" vote. I'd also insist that any further expansion come back before this Committee.

CHAIRMAN BERNANKE. President Stern.

MR. STERN. I'm reluctantly in favor of this. I won't elaborate very much. I'm just not persuaded that this is a very valuable contribution, as best as I can judge it. I would be in favor of limiting it to these four countries. I don't know if that's credible, though. Certainly I would be in favor of any additional considerations coming back to the full Committee.

CHAIRMAN BERNANKE. Governor Warsh.

MR. WARSH. Mr. Chairman, I support the proposal on the floor. I think the safeguards are meaningful and real and should help. I think the bar for further consideration, as Nathan described, should be high, but we shouldn't overstate what that bar is, given how circumstances can change quickly. I wouldn't want to have to change that rule in the middle of the game, but I think the high-bar language works. On the question of delegating to the subcommittee, I think in the interest of speed it would be appropriate; but given the sense around the table, certainly making sure that the folks around the table were at the very least briefed as to the thought process might be a prudent path forward.

CHAIRMAN BERNANKE. Okay. Thank you. So the sense I hear is that people are willing to accept it, but the bar for additional countries should be high. We should bring any country that we propose to add back to the FOMC for approval, and we will keep you well briefed on the conditionality, the draws, and anything else that happens. Okay? May I have a motion?

MR. KOHN. So moved.

CHAIRMAN BERNANKE. I am going to say without objection because we had a unanimous view. Okay. Thank you. Let me go on next to the economic situation.

MR. LACKER. Mr. Chairman.

CHAIRMAN BERNANKE. Yes.

MR. LACKER. Do we have time for a brief question for the Manager about the funds market? It has behaved a little unusually in the last period.

CHAIRMAN BERNANKE. Go ahead.

MR. LACKER. Thank you, Mr. Chairman—I appreciate this. I have a three-part question. As you said in your presentation, the effective funds rate (the average of brokered transactions) has been below the interest rate on reserves, and there are all of these institutions that apparently aren't eligible to earn interest on reserves. One, what's the policy reason for excluding them from eligibility for interest on reserves? I understand the policy reason for excluding them from credit, but this is the opposite, and so I'm not quite sure why we screen them out. Second, as I read the data on your operations, it seems to me as though we have added enough reserves to drive the funds rate virtually down to the interest rate on reserves. I want to know if that's a fair characterization of the state of open market operations and the funds rate. Third, I'm interested in knowing, especially if that's true, why don't we just give up and say that the interest rate on reserves is our target rate?

MR. DUDLEY. Okay. Let me take them in reverse order. I don't like to give up, but if I could just exclude that portion of it, it's possible that you might want to consider the interest rate on reserves or some reasonable facsimile thereof as your target because that is essentially the risk-free rate that banks face. That may be the purer measure of what you're really trying to accomplish in terms of its link to monetary policy than the federal funds rate. It's possible. There are obviously important governance issues that surround that choice, though, in terms of what's the Board's

prerogative and what's the FOMC's prerogative. But that's a completely reasonable thing to think about, just as long as we don't characterize that as giving up.

Have we added enough reserves to drive the federal funds rate down to the interest on reserves? Well, I think not. I wouldn't look at it quite that way because the gap in principle, if other things are not going on, should be the difference between us as a counterparty and a bank as a counterparty. One is an unsecured loan between one bank and another bank, and the other is us as the counterparty. So normally there should be a spread between the interest on reserves and the federal funds rate. Now, obviously what complicates that in the current environment is the Federal Deposit Insurance Corporation's guarantee on interbank funds going forward. So federal funds may be covered—in fact, they look as though they could be covered by that guarantee. In that circumstance, one might argue that the federal funds rate and interest on reserves should probably be the same rate because there's no difference in credit risk.

MR. LACKER. Excuse me. Without interest rates on reserves, there's that spread plus a scarcity factor, and we've essentially driven that scarcity factor down to zero—that's how I meant the question.

MR. DUDLEY. Right, but I still think that generally a bank faced with a choice of having risk with the Fed or selling fed funds to another bank would want to be compensated for that risk of selling, so they are going to get some positive spread.

MR. LACKER. I understand that.

MR. MADIGAN. I would say that we may well be in a situation where the interest rate on excess reserves is the effective tool for controlling the federal funds rate, and there may be a spread. As Bill said, we are in the process of learning how this works, and it may well be the case that we need to push that interest rate on excess reserves very close to the federal funds rate.

MR. DUDLEY. It would not surprise me at all if, when we are finished with this process—I hope over the next six weeks as we go through a couple more reserve maintenance period rounds—that that margin might be zero and we might see the federal funds rate trading right on top of the interest rate on reserves. But we are going to have to see. I think our presumption at the current time would be to recommend to the Board next round to narrow that spread further—it is 35 basis points today. Another thing that we don't know is how much learning is going to go on by banks. So the selling of fed funds below the interest rate on reserves is not just the GSEs; it is also banks, and so it's a little hard to understand exactly why they're doing that unless the leverage ratio is what's driving that behavior. Maybe they are just not very well informed or they haven't gotten their first check for the interest rate compensation, so I think it's a little too soon to be certain about how they're going to behave going forward. You had one other question about the policy reason for excluding the GSEs.

MR. MADIGAN. There's not really a policy reason. I would say there's a legal reason. The statute allows us to pay interest only on balances held by depository institutions. My own view is that it would be a good thing if we were able to pay interest to the GSEs exactly for the reasons that we've been discussing. It might be something we could seek authority for at some point in the future.

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. Just a clarification. If we were to take that step, are there any other institutions that participate, other than the GSEs?

VICE CHAIRMAN GEITHNER. Chile, Mexico—

MR. MADIGAN. We would have to look at that. I think there are more than just the three GSEs that we usually think of. But they're the biggest institutions that participate in the federal funds market.

MR. DUDLEY. It is not at all clear that their behavior is going to persist necessarily, because they may decide to manage their short-term liquidity in a different way than selling at a very low federal funds rate to banks.

MS. DUKE. Mr. Chairman, if I could.

CHAIRMAN BERNANKE. Oh, yes.

MS. DUKE. As part of my preparation when I talked to the banks, I asked them specifically this question about interest on reserves, and every single one of them said, "We haven't had time to even focus on it. We don't even know what's going on with that. We're not changing anything." There's so much going on right now. So I think we're really going to have to wait until some of the other decisionmaking has worked through before we can draw any conclusions as to what behavior this might drive.

CHAIRMAN BERNANKE. Learning theory in practice. Thank you very much. Very helpful. All right. Mr. Morin.

MR. MORIN.³ Thank you, Mr. Chairman. I'll be using the packet with the green lettering on the cover entitled "Staff Presentation on Nonfinancial Developments." Over the intermeeting period, the data we received on real activity were considerably weaker than we had been expecting. That, combined with the intensification of financial turmoil since mid-September, led us to significantly mark down our near-term and medium-term projections for economic activity.

Your first exhibit focuses on the near-term outlook. As shown by the blue bars in the top left panel, we currently expect real GDP to fall at an annual rate of slightly more than 1 percent, on average, in the second half of 2008—a reduction of about 2 percentage points from our projection in the September Greenbook (the red bars). One factor that has informed our thinking about the near-term forecast is the labor market, which looks weaker than at the time of the last FOMC meeting. As you

³ The materials used by Mr. Morin are appended to this transcript (appendix 3).

know, payrolls fell steeply in September. Since then, initial claims for unemployment insurance (the black line in the top right panel) have been quite elevated, even after adjusting for factors that are temporarily boosting claims (the red line). As shown in the inset box, the latest claims data point to another sizable drop in employment this month.

Turning to spending, sales of light motor vehicles (plotted in the middle left panel) have been dismal of late and are expected to stay that way at least through the end of the year. Motor vehicle sales have been depressed, in part, by financing constraints, limited sales incentives, a retreat by the automakers from leasing, and worsening consumer assessments of car-buying conditions. More broadly, as you can see by comparing the black and red lines in the panel to the right, consumer spending excluding motor vehicles has been significantly softer in recent months than we were expecting. In addition, the conditions influencing consumer outlays have worsened considerably, including a sharp drop in household wealth, tepid real income gains, a weakening labor market picture, historically low levels of sentiment, and reduced credit availability. Consequently, as reported in the inset box, we substantially revised down the projection for overall real PCE in the second half of the year. In the housing sector, single-family starts, shown in the bottom left panel, fell to about 550,000 units in September—6 percent below our expectation. Even with the ongoing cutbacks in production, the weak demand has left the months' supply of unsold new homes (not plotted) very elevated, and we expect starts to decline well into next year. In the business sector, the spending data in hand are somewhat stale—tomorrow morning we receive the advance reading on durable goods shipments and orders in September—but the information we do have points to softening business investment in the third quarter. Moreover, as shown on the right, the first available surveys on business activity in October plunged to very low levels.

Exhibit 2 summarizes the enormous changes to the key conditioning factors that we confronted in putting together the staff forecast. As shown in the top left panel, reflecting the recent plunge in equity prices, the stock market path in this projection is markedly below the path anticipated in our September forecast. This downward revision, together with the projected declines in house prices that Bill Bassett presented in his briefing, leaves the level of the wealth-to-income ratio, plotted to the right, substantially lower than in the September Greenbook. As a result, over the next two years, household wealth exerts a much greater drag on consumer spending than we assumed earlier. Yields and spreads on corporate bonds, illustrated by the Baa rate in the middle left panel, soared over the intermeeting period. We expect the higher cost of capital in this forecast to weigh on business capital spending over the projection period. A further drag on economic activity in the medium term is the recent jump in the exchange value of the dollar, shown to the right. While we expect the dollar to decline a touch more quickly than in the September Greenbook, by the end of 2010 it remains more than 4 percent above the level assumed in our previous forecast. In addition, as Linda Kole will discuss shortly, the outlook for foreign activity has deteriorated. A partial cushion to these factors depressing activity is the plunge in oil prices over the past few weeks; the bottom left panel shows the spot

price of West Texas intermediate crude oil. The path for oil prices over the projection period, based on futures quotes, averages nearly \$30 per barrel below the September Greenbook path and should provide some countervailing support to household purchasing power and consumer spending. As noted to the right, according to our standard forecasting models, the lower level of equity prices, the higher bond rates, and the higher exchange value of the dollar—all of which are intertwined with the intensification of financial turmoil—exert a considerable drag on real activity over the next two years. Through conventional wealth, cost-of-capital, and terms-of-trade channels alone, these developments would lead us to revise down real GDP growth about 1¼ percentage points, on average, in 2009 and 2010. But these effects likely understate the full extent of the fallout on real activity from financial turmoil. This is because our standard models do not explicitly account for the additional effects of such factors as tighter lending standards and heightened uncertainty.

Consequently, for some time we have been using supplementary analyses to try to account for these credit-channel effects in our judgmental projection. Your next exhibit provides some detail on how we updated these adjustments in light of the intensification of financial stress during the intermeeting period. Two measures that we have found useful for measuring the extent of financial turmoil are plotted in the top row of your third exhibit. On the left is an index of financial market stress, and on the right is an index of bank credit standards derived from the Senior Loan Officer Opinion Survey. Both indexes have skyrocketed lately, reflecting the sharp deterioration of financial conditions. As discussed in the past two Greenbooks, we use two basic empirical approaches to try to quantify the effects of financial turmoil on real activity that are not captured by our standard models: One is based on the historical correlations between these financial turmoil measures and errors in FRB/US spending equations, and the second method incorporates these indicators of turmoil into small-scale vector autoregressions.

The middle left panel shows estimates of the cumulative effect of our judgmental adjustments for financial turmoil, outside the conventional channels noted earlier. The effects are shown relative to the level of real GDP in the fourth quarter of each year. The solid black line is the judgmental estimate built into the current Greenbook forecast, whereas the red dashed line plots the estimates used in the September projection. The shaded area shows the range of results from the model-based estimates detailed in Part 1 of the October Greenbook. As you can see by comparing the black and red lines, we now expect that financial turmoil, outside the usual channels, will impose a markedly greater drag on real activity than we projected in the last Greenbook. For 2008, we think that much of the unexpected weakness observed recently in the spending data reflects financial turmoil effects, which puts our judgmental adjustment near the bottom of the model-based range. In contrast, our adjustment for 2009 is in the middle of the range of model-based results, whereas for 2010 our adjustment is near the top end of the range. We are more optimistic than the models for 2010 in part because none of the model-based estimates fully accounts for what we assume will be the likely restorative effects over time of the actions taken by governments to mitigate the problems afflicting the financial system. As shown in

the middle right panel, these restraining influences, taken together, led us to mark down our assumed path for the federal funds rate. We now assume that the funds rate is lowered to $\frac{1}{2}$ percent by early next year and is held at that level until mid-2010.

Although the path for the funds rate is appreciably lower than we had assumed in the September Greenbook, the additional monetary easing only partially offsets the greater restraint on activity from the other factors shaping the projection. All told, as shown in the first line of the table at the bottom of the page, we project that real GDP will fall at an annual rate of nearly 1 percent in the first half of 2009 and then turn up modestly in the second half. In 2010—with the drag on activity from the strains in financial markets beginning to ease, housing market conditions stabilizing, and an accommodative monetary policy in place—activity accelerates further, and real GDP increases 2.3 percent over the four quarters of the year. The contributions of selected domestic spending categories to changes in real GDP are shown in lines 3 to 5. As you can see, we think that consumption will begin to recover next year and that the drag from housing will diminish over time. In contrast, we expect business fixed investment to remain quite weak next year, reflecting in part the lagged effects on investment of declining business output, the high cost of capital, and heightened uncertainty. Although each of the major components of private domestic demand contributes to the acceleration in economic activity in 2010, the contribution to growth from net exports (line 6) is expected to turn slightly negative late next year.

As shown in the top panels of exhibit 4, the margin of slack both in labor markets (the panel to the left) and in the industrial sector (the panel to the right) is expected to remain substantial through the end of the projection period. We expect this persistent slack to be a source of downward pressure on inflation. Other influences are also likely to hold down inflation over the projection period. As shown in the middle panels, energy prices and core goods import prices decelerate sharply from their recent elevated paces. The projected path for consumer energy prices (the left panel) largely reflects the effect of the intermeeting plunge in oil prices, and the forecast for core import prices (the right panel) reflects both the sharp drop in commodity prices and the stronger dollar. As shown in the bottom left panel, while the Michigan survey readings on near-term inflation expectations have remained elevated (the black line), those on longer-term inflation (the red line) have more than retraced the run-up observed earlier this year. Taken together, as shown in line 7 of the bottom right panel, we now expect core PCE inflation to move down to $1\frac{1}{2}$ percent in 2009 and to slow further to $1\frac{1}{4}$ percent in 2010, roughly $\frac{1}{2}$ percentage point less in each year than projected previously. Total PCE inflation (line 1) is projected to run at about the same rate as core PCE inflation in both years.

Turning to exhibit 5, a critical feature of the staff forecast is our assumption that the strains in financial markets will ease gradually over the next two years. However, the current situation is so extraordinary, in terms of both the financial disruptions and the policy responses to those disruptions, that an extremely wide band of uncertainty surrounds this assumption: Matters could easily turn out much worse or much better.

To give some sense of possible magnitudes, this exhibit reviews two alternative scenarios from the Greenbook.

In the first scenario, outlined in the top left panel, financial turmoil intensifies further over the projection period rather than gradually abating, and the accompanying economic fallout turns out to be more severe than in the baseline projection. Specifically, risk premiums on loans, corporate bonds, and equity jump a further 50 basis points and are slower to fall back over time; in addition, the level of house prices falls an additional 10 percent relative to the baseline. We also assume that credit-channel and other nonconventional effects are even more restrictive in 2009 and 2010 than those built into the staff forecast—to a degree more in line with the bottom end of the range of empirical estimates I presented earlier. As shown by the red line in the middle left panel, with the intensification of the financial turmoil and the larger judgmental adjustments for the impact of financial stress on economic activity, real GDP is significantly weaker than in the baseline (the black line). As a result, the unemployment rate (plotted to the right) rises faster and farther, peaking at nearly 8½ percent at the end of 2010, more than 1 percentage point above the baseline. Reflecting the greater accompanying slack, core PCE inflation (shown in the bottom left panel) moves down appreciably faster than in the baseline, reaching just ¾ percent at the end of 2010. With substantial slack and a low and falling inflation rate, the funds rate remains pinned through 2010 at ½ percent and continues at that level through 2012 in the extended simulation presented in the Greenbook.

In the second scenario, outlined in the top right panel, the stress weighing on financial institutions and markets lifts much more quickly than in the baseline, perhaps in response to the extraordinary recent government actions. Here, we assume that risk spreads recede by early next year to the levels that were projected in the September Greenbook, and as a result, equities reverse most of their recent losses by the middle of next year. In addition, we cut back the size of the judgmental adjustments for financial turmoil to their September Greenbook levels. As shown by the blue lines in the middle panels, economic activity responds fairly vigorously to the improvement in financial conditions, with GDP growth reaching about 4½ percent by the end of 2010 and the unemployment rate moving down to 5¾ percent. As shown in the bottom left panel, the narrower margin of slack in the alternative scenario tempers the decline in core PCE inflation relative to baseline. Finally, as shown to the right, the federal funds rate, under an optimal control monetary policy, declines briefly to 1 percent early next year but then moves up steadily as it becomes clear that the financial strains are lifting rapidly. Linda Kole will now continue our presentation.

MS. KOLE.⁴ I'm referring to the next exhibits that are attached to the material you are already looking at. Since the September FOMC meeting, financial market distress has intensified and has spread around the world, threatening many emerging market economies that previously had been less affected by the U.S. and European credit crisis. As shown in the top left panel, equity prices have fallen sharply in Europe,

⁴ The materials used by Ms. Kole are appended to this transcript (appendix 4).

Japan, and the United Kingdom. Indeed, the Nikkei is at a 26-year low today. The carnage has been just as pronounced in emerging markets, shown on the right. Credit spreads between industrial countries' risky corporates and government bonds (plotted in the middle left panel) soared, especially in the euro area; and as shown in the right panel, credit default swap premiums on sovereign debt in many emerging market economies have skyrocketed. The widespread pullback from risk led to safe-haven flows into dollar assets; as shown in the bottom left panel, the dollar appreciated nearly 11 percent against the major currencies (the black line) despite a 9 percent depreciation against the yen (the red line) as carry trades were unwound. The dollar strengthened 9 percent against the currencies of our other important trading partners. As shown on the right, effective exchange values of the currencies of Brazil, Mexico, and Korea were particularly hard hit.

In your next exhibit, the top left panel shows the extent to which investors fleeing risk have been liquidating emerging market equity funds. Several foreign governments, notably Russia's, have fought related currency pressures by drawing down their reserves (the top right panel). For instance, since the peso fell sharply against the dollar in early October, the Bank of Mexico has deployed 15 percent of its reserves to shore up its value. China and Russia have even intervened to stem the fall in their equity prices. Following the collapse of Lehman Brothers, credit markets seized up, and dollar funding needs intensified. Since then, governments around the world have taken several steps to support their banking systems (the middle panel). Some central banks have injected massive amounts of liquidity, and many have cut policy rates or reserve requirements or both. In addition to the countries joining the Fed in a coordinated 50 basis point rate cut on October 8, a wide range of other economies have eased policy lately. Note that there have been a few exceptions: Hungary, Iceland, and Denmark increased rates to counter currency pressures. Governments have also expanded bank deposit insurance and guaranteed new bank lending in order to improve confidence and liquidity. Following a similar initiative in the United Kingdom, euro-area governments announced plans to guarantee the issuance of new medium-term senior debt by banks and to directly assist their recapitalization if necessary. In recent weeks, authorities have announced capital injections into a number of banks whose financial soundness was in question. The swap lines extended by the Federal Reserve to foreign central banks have been expanded. The ECB approved a €5 billion swap line for Hungary and a €12 billion one for Denmark, and several Asian countries are currently negotiating swap lines with each other as well. Private firms in several emerging market economies have confronted pressures in rolling over foreign currency funding, and authorities there have also raised deposit guarantees, guaranteed bank lending, and injected capital into vulnerable banks. Finally, several countries have applied to the IMF for assistance.

The bottom left panel shows median credit default swap premiums for banks in Europe, the United Kingdom, and the United States. The declines since the beginning of this month suggest that the announcement of these plans has improved confidence in banks' safety, even if they have not restored confidence in broader economic prospects. As shown by the implied OIS forward rates in the bottom middle panel,

market participants expect considerably more monetary policy easing in Europe than they did at the time of the last FOMC meeting. We assume that further cuts in official rates (shown on the right) will be forthcoming as output falls short of potential and inflation recedes.

As can be seen in exhibit 3, highly stressed global financial conditions and the weaker U.S. outlook have led us to take a whack out of our outlook for foreign growth. Comparing lines 1 and 2, we have marked down our estimate of total foreign growth for the third quarter more than 1 percentage point, and we have slashed our forecast even more for Q4 and 2009. We project outright recessions in the advanced foreign economies (lines 3 through 7) and in Mexico (line 12). In other emerging economies, we foresee growth rates well below potential. Chinese real GDP growth (line 10) is estimated to have slowed considerably in the third quarter. We expect some payback in Q4, but beyond that we have revised down our outlook. As can be seen in the middle left panel, exports fell in August in many of our largest trading partners, though they still chugged along in China through September. The black line in the middle panel shows that the volume of exports from Canada has been falling for some time, but exports had held up in Japan and Germany until the third quarter, when they fell. Industrial production in Japan (the red line in the middle right panel) has fallen nearly 5 percent below its year-ago level, and IP has also fallen over the past year in the United Kingdom and the euro area. As global demand has slumped, oil prices (the black line in the bottom left panel) have plummeted, and nonfuel commodity prices have fallen as well. The decline in commodity prices along with slackening economic activity is projected to help bring down inflation in all of the regions shown (on the right).

Exhibit 4 focuses on the outlook for Europe. Banks remain leery of lending to each other, as evidenced by the growing amount of funds parked at the ECB's deposit facility. The latest BoE bank lending survey (the top right panel) pointed to further tightening of U.K. lending standards in the third quarter and suggested that banks expected to tighten them somewhat further in the fourth quarter (the striped bars). Notably, this survey was taken before Lehman failed. A confidential conversation with a contact at the BoE who had talked with a few bankers more recently suggested that the latest survey considerably underestimated the recent tightening of standards. The quarterly growth of U.K. loans to nonfinancial corporations (the red line in the middle left panel) fell from double-digit paces for the past two years to 5 percent in the third quarter. Credit expansion to households (the dashed line) declined as well. Loan growth in the euro area (the middle panel) also slowed. Europe has clearly moved into recession. The middle right panel shows that house prices have fallen over the past year in the United Kingdom and Ireland and have also slowed in other European locales. But it is not just the property sector that has slumped. Business confidence (the bottom left) has disintegrated. Total economy purchasing managers' indexes (the middle panel) are in the downturn range in both the United Kingdom and the euro area. Unemployment rates have increased, especially in France and Spain, where construction activity has slowed sharply.

Your next exhibit takes a quick tour through the rest of the world. In Japan, business confidence (the red line) has plunged, partly because lending terms faced by firms, particularly small and medium-sized enterprises, have become more restrictive. Investment intentions (not shown) have deteriorated as shipments (the black line) and exports have declined. The labor market has deteriorated, with the ratio of job offers to applicants (in blue) falling to its lowest level in the past four years. The Bank of Japan recently downgraded its outlook and stepped up measures to deal with financial market stresses. In China, investment spending (the black dashed line in the top right panel) continued to be strong through September, and retail sales accelerated. However, industrial production (middle left panel) slowed this summer partly because of efforts to reduce pollution in Beijing during the August Olympics but also because of declining steel production, suggesting further slowing. Industrial production has also slowed in Korea and Taiwan, and export orders (shown on the right) are falling in China, Brazil, and Singapore. As shown in the bottom left panel, Mexico has suffered a steep fall in remittances, flattening industrial production, and declining auto exports. Oil revenues (not shown) are down as well. Finally, global PMI and new orders indexes, which aggregate data for 26 major countries, are both in contractionary territory but have not yet reached their depths at the trough of the 2001 recession.

Exhibit 6 reviews the main elements of the U.S. external outlook. As shown in line 1 of the top panel, net exports contributed 1.8 percentage points to growth in the first half of this year, but we expect this contribution to drop off considerably in coming quarters as exports (line 3) slow with foreign growth and imports (line 5) remain flat. Total foreign growth (the black line in the middle left panel) is now projected to dip down about as much as U.S. growth, while the dollar (shown on the right) is well above the level we projected in the September Greenbook. As shown in line 3 of the table, we now expect export growth to move down sharply starting in the current quarter and to remain well below what we'd written down in our last forecast. Although lower U.S. demand caused us to lower import growth (line 5), the projected contribution of net exports to GDP growth has, on net, been revised down a bit over the forecast period. The bottom panel gives a longer perspective on U.S. external deficits. The non-oil trade deficit (the dashed orange line) and current account deficit (the red line) have continued to narrow over the past year and a half although oil imports have remained large. The current account deficit to GDP ratio is forecast to fall below 3 percent in 2010, a level last reached in 1998. Brian Madigan will continue with our presentation.

MR. MADIGAN.⁵ I will be referring to the separate package labeled "Material for Briefing on FOMC Participants' Economic Projections." Exhibit 1 shows the central tendencies and ranges of your current forecasts for 2008; corresponding information about the Committee's most recent projections, those from June, is shown in italics, and Greenbook projections are included as a memo item. Your June projections regarding GDP growth and inflation for the first half of 2008 turned out to be quite close to subsequent BEA data releases; therefore, the revisions in your

⁵ The materials used by Mr. Madigan are appended to this transcript (appendix 5).

projections for the year as a whole are almost entirely due to the changes in your implicit projections for the second half of 2008.

As shown in the right column of the top panel, your GDP growth forecasts for 2008:H2 now range from minus 2½ percent to minus ¾ percent; compared with June, each of you has marked down your projection for second-half growth by at least 2 percentage points. As shown in the second panel, your forecasts of the fourth-quarter average unemployment rate fall in a range of 6.3 to 6.6 percent, more than ½ percentage point higher than in June. In accounting for the sharp deterioration in the near-term outlook for activity, your narratives point to the intensification of the financial crisis and its impact on credit conditions and stock market wealth as well as the weakness of incoming data on consumer spending and labor market conditions.

Your assessments of inflation in 2008 have also shifted significantly since June. The central tendency of your forecasts for overall PCE inflation during 2008:H2 (the right column of the third panel) is now about 1½ to 2¼ percent, a drop of about 2 percentage points from June. In this regard, a number of you noted the implications of recent sharp declines in energy and commodity prices that were apparently triggered by the worldwide slowdown in economic activity. In contrast, your projections for core PCE inflation in 2008:H2 (the right column of the bottom panel) are a notch higher than in June.

Exhibit 2 reports your projections for the next three calendar years. Most of you anticipate little or no GDP growth during 2009; as with your implicit forecasts for the second half of 2008, these projections are about 2 percentage points lower than in June. A few of you are projecting even weaker outcomes, with output declining about 1 percent, whereas a few others are projecting stronger economic growth of about 1½ to 1¾ percent. The width of both the ranges and the central tendencies of your projections for real GDP growth for 2009 and 2010 has increased noticeably. Still, all of you anticipate that economic expansion will resume by 2010, and most of you expect a further pickup in growth during 2011. In the narratives accompanying these projections, a number of you said that you expect the pace of recovery to be damped by persistent credit market strains, ongoing adjustment in the housing market, and economic weakness abroad. Apparently, only a few of you assumed that additional fiscal stimulus would be enacted.

Most of you project that the unemployment rate will peak at around 7 to 7½ percent in 2009 and decline gradually over the subsequent two years. However, you generally expect that, even by the end of 2011, the unemployment rate will still be at or above 5½ percent. Moreover, most of you anticipate that the unemployment rate in 2011 will remain well above your own projections of the longer-run unemployment rate that were provided in your trial-run submissions.

The central tendency of your projections for overall PCE inflation is about 1¼ to 2 percent for 2009 and about 1½ to 1¾ percent for 2010 and 2011—roughly the same as for your forecasts of core PCE inflation. About half of you projected inflation

rates in 2011 close or identical to your own individual assessments of the rate of inflation consistent with Federal Reserve's dual mandate for promoting price stability and maximum employment, where we have again judged the latter from your longer-term trial-run submissions. But half of you are projecting that inflation in 2011 will be below your own individual assessments of the mandate-consistent inflation rate by about $\frac{1}{4}$ to $\frac{1}{2}$ percentage point, and in one case, by more than 1 percentage point, mainly reflecting the lagged effects of weak economic activity and the relatively sluggish pace of recovery.

In your forecast submissions, several of you indicated that the appropriate path of monetary policy would involve less near-term easing than assumed in the Greenbook, and more than half of you expressed the view that policy tightening would need to occur several quarters earlier and at a substantially more rapid pace than in the Greenbook.

Exhibit 3 presents your views on the risks and uncertainties in the outlook. As shown in the top left-hand panel, all of you now see uncertainty about growth as elevated relative to historical norms. As shown to the right, most of you continue to perceive the risks to growth as weighted to the downside even with the downward revision in your modal projections. Several of you pointed to the possibility that financial market turmoil might not subside as quickly as anticipated and to significant risks of an increasingly negative feedback loop between credit markets and economic activity. As shown in the bottom left-hand panel, most of you also continue to see an elevated degree of uncertainty about inflation. In June, most of you judged the risks to the inflation outlook as skewed to the upside, but as shown to the right, nearly all of you now see the risks to the inflation outlook as either balanced or tilted to the downside.

Exhibit 4 summarizes the results of the trial run on longer-term projections. These projections were intended to represent values to which variables would converge over time, say five to six years ahead, under the assumption of appropriate monetary policy and in the absence of any further shocks. For real GDP growth, your longer-term projections have a central tendency of $2\frac{1}{2}$ to $2\frac{3}{4}$ percent and a range of about 2 to 3 percent. For the unemployment rate, your longer-run projections have a central tendency of $4\frac{3}{4}$ to 5 percent and a range of about $4\frac{1}{2}$ to $5\frac{3}{4}$ percent. For both variables, the central tendencies are very similar to those of the projections for 2010 that you made in October 2007, shown in the bottom panel, a point at which many of you viewed the modal outlook for 2010 as being fairly close to the balanced growth path of the economy. For PCE inflation, your longer-run projections have a central tendency of about $1\frac{3}{4}$ percent and a range of $1\frac{1}{2}$ to 2 percent. The range of these projections is identical to the range of two-year-ahead inflation projections that you made last October; the minutes from that meeting indicated that those projections were influenced importantly by your judgments about the measured rates of inflation consistent with the Federal Reserve's dual mandate of promoting price stability and maximum employment.

The request for the trial-run projections suggested that convergence might typically occur over a period of five to six years. One of you noted that the convergence process this time will likely occur over an even longer period because of the severity of the economic crisis. However, apparently most of you thought that convergence would occur sooner than that, suggesting that the configuration of this trial run produces a good representation of FOMC participants' views of the steady state values of GDP growth, unemployment, and inflation.

As usual, the staff will be preparing a summary of economic projections (SEP) and will be circulating drafts to you over the next few weeks along with drafts of the minutes. The published SEP, and hence the drafts, will not incorporate the longer-term projections from the trial run. The staff will provide to you separately a version of the SEP that has been modified to incorporate the longer-term projections generated by the trial run. The subcommittee will consult with the Chairman about next steps. One possibility would be for the Committee to discuss experience with the trial run at its December meeting and make a provisional decision at that time as to whether to proceed in January with regular longer-term projections; a final decision could be made in January. Thank you. That concludes our presentation.

CHAIRMAN BERNANKE. Thank you. Before we go too long, we'll take a coffee break, but now let's take some questions. President Lacker.

MR. LACKER. In the forecast, the federal funds rate goes to 50 basis points, and I take it that's essentially as low as you think it can go. You treat that as sort of the lower bound on nominal interest rates. Is that right?

MR. STOCKTON. That's how we were thinking of it. The 50 basis points, however, was not done on the basis of any deep analytical analysis of whether that, in fact, is the zero bound, and I think that's an issue that the staff will need to address pronto. But the message in the forecast with that funds rate path was that we think this shock is large enough that you will need to lower the funds rate as low as you think it can feasibly go.

MR. LACKER. Well, whatever that lower bound is, I have a question that's kind of hypothetical. I wasn't a member of the Committee five years ago. My understanding, though, is that much thought was given to how we would conduct monetary policy if we needed to reduce the nominal federal funds rate to zero or its effective equivalent. My understanding is that the general

conclusion—and my understanding is that this is mainstream economists’ general view as well—is that the way we would do that would be to expand the monetary base, perhaps by buying assets outside the normal range of assets that we would buy. Now, the first question is, Is that correct? Then I have a follow-up.

CHAIRMAN BERNANKE. May I? You can answer, but let me just make a suggestion, which is that there were a number of memos and studies done in 2003. I think we ought to look at them, update them, and circulate them fairly soon. So we’ll do this in some detail; but by all means, let’s hear the answer.

MR. MADIGAN. President Lacker, I would say that there are a number of strategies that the Committee could think about if it were at the point that it felt it couldn’t lower the federal funds rate any further, be that zero or some higher level. One would be communications that suggest to market participants a willingness to hold short-term rates at very low levels for a very long period of time. Of course, one could view the 2003 experience as implementing that strategy with the “considerable period” language. But obviously the idea is to try to hold down the longer-term rates that matter for spending to a larger degree than might be implied by market participants’ views that you might instead begin to firm monetary policy sooner.

There are a number of other possibilities. As you suggest, one would be simply to expand the Federal Reserve’s balance sheet further—engage in a sort of quantitative easing. The effectiveness of that could be debated. Another possibility that was discussed, at least in the period in which the studies were done, would be to change the composition of the Federal Reserve’s balance sheet. Of course, we’ve already done a lot of that with the various lending facilities, and so the scope for additional expansion there would need to be thought through.

MR. LACKER. The reason I ask is that my understanding is that the strategy of expanding the monetary base would work through increasing inflation or reducing deflation.

MR. MADIGAN. That's not how I would think about it. I would think about it as giving, if it works, depository institutions increased incentives to expand their lending by providing them with a great deal more funding than they actually need and thereby increasing spending propensities. I would see this more as part of a package of various ways to stimulate spending by reducing real interest rates but not as something that would feed through directly to inflation. Rather this would more properly be viewed, at least in the way I think about things, as fighting deflation rather than trying to cause a higher positive rate of inflation.

MR. LACKER. My understanding is that economists such as Woodford and others who have studied this believe that, by using monetary assets to purchase other assets, we can make the price level and thus the inflation rate higher than it otherwise would be. Is that a fair understanding?

CHAIRMAN BERNANKE. I don't think that's right. I think the thrust of the elementary approach to quantitative easing is the old Milton Friedman idea—that changing the composition of money and other assets changes relative returns. So it's a way to bring down returns on other assets and create stimulus even if the policy rate is down to zero.

MR. LACKER. The mechanism Friedman sketched ultimately produces a proportionate increase in the price level, doesn't it?

CHAIRMAN BERNANKE. Eventually, but through the aggregate demand mechanism.

MR. LACKER. Right.

CHAIRMAN BERNANKE. We should look at the Woodford thing, but I don't think that's quite the right characterization of his view.

MR. LACKER. Well, the reason I ask all of this is that, with an interest rate on reserves above zero, that's effectively equivalent to a zero lower bound on nominal interest rates. So we are effectively doing this quantitative easing.

CHAIRMAN BERNANKE. We're pretty close, yes.

MR. LACKER. Right. So the thought that sparks is that, if the mechanism involves creating inflation, then I'd wonder what checks we have on the scale of open market operations now to ensure that we're not, by expanding our balance sheet as much as we have, risking an increase in inflation.

CHAIRMAN BERNANKE. I don't think that's the right characterization, but I'd be happy to talk about it off line. President Plosser.

MR. PLOSSER. I have a question. As you characterized the forecast in the Greenbook, it is really the result of very large adjustments to the financial constraints piece—in fact, they're about double what they were in the September Greenbook—and those adjustments or factors really account for a large portion, maybe not all, of the downward revision in the forecast. Now, one of the inputs in the financial factors are spreads of various kinds in the VARs that you used to estimate those. But those spreads we've learned are very, very volatile. They can rise very quickly, as we've seen. They also can fall very quickly sometimes. Spreads have actually come down a little in the last few days, which is the good news. If our facilities are successful, they actually may fall further—knock on wood; that would be very nice. But I get a little nervous making our forecast be driven so much by something that's potentially very, very volatile.

Now, we get a bit of a picture of this—and I want to applaud the staff—in I guess it was exhibit 5, where you were comparing the baseline forecast and the two alternative scenarios, particularly the one in which you get quicker recovery in the financial sector. I thought that was a

very useful exercise, and I really appreciate it. My interpretation or intuition is that the “more rapid financial recovery” scenario is what the forecast would look like had we not done the additional add factors in October and instead held them to what they were in September. That suggests that the real data, whether on spending or other things, have driven the forecast down a little, but not a whole lot. In fact, in that scenario, you imply that the funds rate would actually be held constant at 1½ percent. So, in looking at those two scenarios and trying to parse out how much risk or how much probability to attach to them, what is the staff’s view? Obviously here’s what you thought the baseline would be, but if I ask you what you think the probabilities are on some of these different scenarios—in particular, I’m interested in this sort of faster recovery—do you have any sense of what the probabilities of these two different outcomes might be and how one might think about that? They imply very different paths for the funds rate and very different forecast profiles, but their differences depend on variables that are very, very volatile. So can you give me some probabilities of how you think about those two scenarios?

MR. STOCKTON. I can give you some probabilities, but I don’t know how seriously you should take them. [Laughter]

MR. PLOSSER. You can give me a distribution.

MR. STOCKTON. What we wanted to convey in the alternative scenarios that we showed this time—and we reduced the number because we thought the possible little risks that you might be facing were being swamped by some really big ones—was our sense that the likelihood function is pretty flat around the baseline and the two alternative scenarios that we show here in exhibit 5. I share your discomfort. As I was telling President Evans at lunch today, I feel a bit as though the forecast is going to depend a lot on when the clock stopped, given how much volatility there has been in the stock market and in corporate spreads. When the clock

stopped, we had close to a 25 percent weaker level on the stock market, 200 basis points higher on the Baa spread, and a 7 percent higher dollar. There were a whole lot of negative forces operating on this forecast. Indeed, both the conventional wealth effect and cost-of-capital channels account for about one-third of the downward revision we made. The special nonconventional credit channel effects account for a third, and a third of the downward revision really is a combination of the stronger dollar and the weaker foreign outlook.

The part that I feel most comfortable with in this forecast is that there has been a very significant negative shock to the economy and that it is difficult to imagine that activity will not be affected importantly by that. The part that I feel most uncertain about—and, as you point out, is relevant to the policy decisions that you are going to make over the next several meetings—is that I have no idea about the timing or the manner in which this will fade away. So we have it fading away gradually over the next two years. I think that a more rapid recovery is certainly a possibility. As you noted, even that scenario doesn't go back to where we were in September. One, the incoming data suggest that the underlying economy is starting out at a weaker place, and even if conditions were to improve very rapidly over the next quarter or two, you have still sustained a hit that is going to take some time to play out through the system. By the same token, I don't think that you can discount the more extended and deeper financial fallout here. We have certainly been surprised over the past year in many ways by just how virulent and persistent this shock has been. Two, looking at the current state of aggregate demand and aggregate activity, I think we are probably still just at the front edge of the credit constraint effects on actual spending. So you could still be faced with some very substantial restraint on spending—and more than we have built into the baseline forecast.

So, and as you noted, the difference in the policy prescriptions there—the worse scenario is that the funds rate stays as low as it can stay for several years. The other would be—putting too fine a point on it—that optimal control, even with the more rapid recovery, goes down to 1 percent on the funds rate and then starts recovering to 1½ percent. But that is obviously a very different policy picture. I just don't think that, at this point, science is going to allow us to put a lot of probability mass on one of those scenarios versus the other two.

MR. MORIN. One quick follow-on comment. In exhibit 3, in the middle left panel, if you look at our financial turmoil effects, with the gray shading, the bulk of the markdown in 2008 actually is what we're labeling the financial turmoil. But those are data we pretty much already have in hand. We are calling much of the shortfall in consumption that we expect to see in the third quarter as “financial turmoil.” So much of the weakness in the second half of this year isn't just taking a flyer on what we think turmoil is going to do; some of it is already in the data.

MR. PLOSSER. I was looking at the table in the Greenbook, at the bottom. That's where I was trying to back out some of this. Thank you very much.

CHAIRMAN BERNANKE. President Fisher.

MR. FISHER. I have a question and a statement disguised as a question.

CHAIRMAN BERNANKE. Not anymore. [Laughter]

MR. FISHER. A quick question on fiscal policy, both domestic and international. Being struck, Ms. Kole, by your verbs “whacked” and “disintegrated”—very forceful language—what are your assumptions about fiscal policy in terms of staff projections, first, for the domestic economy and, second, for other economies? That's the question part.

MR. MORIN. Right now, although the odds are that there will be a fiscal package next year, it is not a feature of the baseline forecast. We discussed two alternative simulations for different packages, but additional fiscal stimulus is not a feature of the baseline.

MR. STOCKTON. We made a deliberate decision in constructing the forecast, given the enormous uncertainty about both the size and the composition of those fiscal packages. We had so many moving parts in our baseline forecast that we wanted to present you with that and then show you what the consequences might be, first, of a stimulus package that looks a lot like the one we had this year—which we think probably gave a shock, but a very short-lived shock, to aggregate demand and then faded away. That doesn't really have many important consequences for the outlook. The second was a much larger package that delivered some stimulus over the next two years. That had a bit of an effect in terms of raising GDP growth and lowering the unemployment rate. But even that \$300 billion fiscal package wasn't enough, in our baseline forecast, to lift the funds rate assumption off the floor. So I think one of the messages would be that, to have a fiscal package that would actually influence your current policy discussion, you have to think both that it would be extremely large and that it would deliver stimulus over an extended period of time to be effective that way.

MS. KOLE. I think that in many of the major foreign countries there is room for fiscal stimulus. That may be a bit of an upside risk to our forecast because, for example, China has already put some things in place. They have increased exporter rebates, and they are also putting more money into homebuilding and trying to prop up the construction industry. Japan just announced a bigger package. I'm not so sure if it will go through. Korea has announced—and even some of the oil producers are announcing—plans to put money into the system. I don't

think we have fully incorporated that. Maybe we have thought about it in China's case because we think that they will do everything they need to do to keep that economy growing at a—

MR. FISHER. So it's possible that we might have marginally higher rates of growth than—

MS. KOLE. Right. I think that the United Kingdom, too, is expanding fiscal policy. Europe hasn't really announced much yet, but perhaps they will do more as well.

MR. FISHER. The second thing goes back to this business of the judgmental effects of financial market turmoil. Do you have any concern that the financial turmoil may have reduced the marginal effectiveness of changes in the funds rate? In other words, if you think in my simple way of a patient on the operating table, we have an IV tube into them, we titrate the fed funds rate—we have been cutting rates—but the tube has been crimped. The flow, I would suggest may not be as full as it would have been before. Is it possible that we haven't felt the full effects or, all things being equal, we haven't felt the same effects that we would have felt if the pipes hadn't been crimped? I'm curious as to your view on that.

MR. STOCKTON. The answer to that is “yes”—it is certainly possible. Obviously, it is very difficult to separate things that might actually have changed the transmission channel of monetary policy from just big financial developments that have offset the beneficial effects of easing policy. We built an assumption into the baseline forecast that GDP responds close to the average response to a fed funds rate reduction, as would normally be the case. The one small technical area in which it seems as though the effect almost certainly would be smaller is that, with the equity premium so high right now, any given change in the funds rate is likely to result in a smaller change in the required return on equity and probably a smaller stock market response than you would normally get. So I think, basically, it is certainly possible, but in our forecast we

have assumed that the additional reductions will have GDP consequences along the lines of the normal response.

CHAIRMAN BERNANKE. Okay. Why don't we take fifteen minutes for coffee, and then we'll do part of the go-round. Thank you.

[Coffee break]

CHAIRMAN BERNANKE. Well, why don't we turn part of our dinner period to the go-round. Let's start with President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. Most of the anecdotal information from the Sixth District is consistent with the downbeat picture that has been emerging in the national data. The sentiment of directors and their contacts has turned decidedly more pessimistic regarding current economic conditions and the near-term outlook. Banking contacts indicate a further tightening of credit standards, while stresses on household and small business finances have resulted in increased credit card usage. A state economic-development official noted that some banks have halted their 90/10 SBA lending. Bankers active in the VRDN (variable rate demand note) market noted that municipalities are under pressure with declining revenues and higher financing costs. Nonresidential building contractors noted a large increase in the number of canceled projects. Advisory council members described a substantial decline in domestic shipping and transport activity for most goods, other than energy products, and some slowing of export volumes through regional ports. Finally, retail contacts, in anticipation of the coming holiday season, noted that orders are down, and heavy price discounting has begun already.

Thematically, Atlanta's forecast is consistent with the Greenbook, but we are projecting a slightly more severe and protracted downturn in business activity than the Greenbook baseline. My assumption is that the cascading dynamic at work in the financial markets may take longer

than projected in the Greenbook to come to an end. As a consequence, I view the Greenbook's scenario entitled "more financial fallout" as the most plausible storyline among the likely range of outcomes. I should acknowledge that we're in an interval between the announcement of the TARP and its full implementation. The encouraging improvement in credit spreads and term funding we have seen in recent days may accelerate once the TARP is operational.

With inflation abating more or less as expected and with such uncertainty surrounding the playing out of continuing and recently worsening turmoil in the financial markets, I have to view the balance of risks as more negative for growth than upside for inflation. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Mr. Chairman, I think it is clear that inflation has been rolled over by the steamroller of the credit crisis. I am not going to belabor what I have heard from the CEOs I have spoken to. Basically, the best summary is that things have gone from interesting to unbelievable. We have had an implosion of economic activity. Business women and men, not having any pricing power, are doing what you would expect them to do: They are cutting their costs of goods sold, which means they are shedding head count dramatically. They are stretching out their ROI assumptions, and they are cutting back on cap-ex and, basically, assuming pro-cyclical behavior on the downside. I doubt that any of us are going to report anything different, particularly since I think I am in a District that, relatively speaking, is still strong. I would hope that during our discussions today we would each take the time, or at least ask, for some response. I would like some response from you in particular. The situation is dire. There is no question about that. We are in dire straits. There is no inflationary tail, or if there is,

it is completely flattened in terms of the foreseeable future. The risks are to the downside on economic growth.

A question I have is, What do we do next? Actually, I should address the issue of what we do first. I don't think doing dribbles and drabs is an answer. I think we just do nothing—and I could make that case because we've done an awful lot—or we do something that is a firm statement. But in response to that statement, the question has to be, What do we do as next steps? I'm particularly curious about whether or not we address during this meeting, and tonight and tomorrow, not only next steps but what the end game is. Where do we want to be? How long are we going to be there, and eventually, how do we exit? But that is, of course, the ultimate question that I think we can delay. So, Mr. Chairman, I'd like to suggest that we not go through our standard ritual of reading about our Districts and so on because I don't think there is going to be a whole lot of difference. The real question is, What do we do about it, and what's the cognitive road map from here? Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Well, I for one will certainly give my response to that at the appropriate time, and we need to hear from everybody. But everyone is obviously free to talk about whatever they want to talk about. President Yellen.

MS. YELLEN. Thank you, Mr. Chairman. In the run-up to Halloween, we have had a witch's brew of news. Sorry. [Laughter] The downward trajectory of economic data has been hair-raising—with employment, consumer sentiment, spending and orders for capital goods, and homebuilding all contracting—and conditions in financial and credit markets have taken a ghastly turn for the worse. It is becoming abundantly clear that we are in the midst of a serious global meltdown. Like the Board staff, I have slashed my forecast for economic activity and now foresee a recession with four straight quarters of negative growth starting last quarter. I

wish that I could claim that I place a lot of confidence in the sobering forecast, but I am sorry to say I can't. In fact, I think we will be lucky if the adverse feedback loop that is under way doesn't wrench us into a much more pronounced and more protracted downturn. The outlook for inflation has shifted markedly, too, with the days of heightened upside inflation risks behind us. In fact, I am concerned that beyond next year we run the risk of inflation falling below the level consistent with price stability.

Even before the extraordinary deterioration in financial market conditions over the past few weeks, there were numerous signs that the economy had weakened dramatically. I won't recite the litany of disappointing data but instead try to touch upon some high, or I guess I should say low, notes based on what my contacts tell me. They are consistent with President Fisher's observations. Consumer purchases of durable goods, especially motor vehicles, have been particularly hard hit by the one-two punch of tight credit and reeling consumer confidence. The mood on showroom floors is downright grim. One auto dealer in my District reports that he is now experiencing the worst period in his thirty-plus years in the business. A home appliance retailer adds that he has never seen more uncertainty and gloom from both the retailers and the vendors. This sentiment is echoed by a large retailer who says simply, "The holiday shopping season is going to stink."

Businesses are under siege from weak demand, high costs of borrowing, curtailed credit availability, and pervasive uncertainty about how long such conditions will last. Our contacts report that bank lines of credit are more difficult to negotiate. Many have become more cautious in managing liquidity and in committing to capital spending projects that can be deferred. They are even cutting back trade credit to customers. Even firms that are currently in good shape report that they are hunkering down, cutting back on all but essential spending, and preparing for

the worst. Our venture capital and private equity contacts tell us that they are instructing their portfolio companies to cut costs, put expansion plans on hold, and draw down existing credit lines. The market for commercial mortgage-backed securities has all but dried up, and lenders have also become less willing to extend funding. With financing unavailable, I am hearing talk about substantial cutbacks on new projects and planned improvements on existing buildings, as well as the potential for distress sales of properties whose owners will be unable to roll over debt as it matures. The deterioration in overall financial conditions since the September FOMC meeting is truly shocking. Even with today's 900-point increase in the Dow, broad indexes are still down about 20 percent, and the latest data suggest house prices in a freefall. Baa corporate bonds are up about 200 basis points since our last meeting, low-grade corporate bonds are up a staggering 700 basis points, and to top it all, the dollar has appreciated nearly 10 percent against the currencies of our trading partners. The sharp deterioration in financial and credit conditions will weigh heavily on economic activity for some time. In addition, prospects for the one remaining cylinder in the engine of growth—namely, net exports—are bleak owing to the slowdown in global demand and the appreciation of the dollar.

We now expect real GDP to decline at an annual rate of 1¼ percent in the second half of this year and to register two more negative quarters in the first half of next year. That forecast is predicated on cutting the funds rate to ½ percent by January, as assumed in the Greenbook, and also is premised on another fiscal package. An absolutely critical pre-condition for the economy to recover next year is for the financial system to get back on its feet. In that regard, I have been greatly heartened by the important actions that the Treasury, the FDIC, the Fed, foreign governments, and other central banks have taken in recent weeks to improve liquidity and inject capital into the financial systems. But we are fighting an uphill battle against falling home

prices, an economy in recession, and collapsing confidence. It is not clear whether these steps will reopen credit flows to households and businesses, especially those with less than sterling credit. Under the Greenbook forecast we will see further large declines in housing prices over the next two years. Banks and other financial institutions will likely suffer larger losses than many had anticipated, and that will mute the impact of recent capital injections. The interaction of higher unemployment and rising delinquencies raises the potential for even greater losses by banks and other financial institutions and for an intensification of the adverse feedback loop we have worried about and are now experiencing. Such a sequence of events plausibly could lead to outcomes described in the “more financial fallout” alternative scenario in the Greenbook.

There are considerable downside risks to the near-term outlook as well. As I mentioned, the most recent economic data have consistently surprised on the downside, and I see a real risk that the data may continue to come in weaker in the near term than the Greenbook has assumed. For example, a dynamic factor model that my staff regularly uses is much more pessimistic in the near term than is the Greenbook. This model aggregates the information contained in more than 140 data series. Based on the most recent economic and financial data available, this model predicts that real GDP will fall 2½ percent in the fourth quarter. The model’s pessimism reflects the combination of the recent weak data releases for the month of September, followed by the abysmal data that we have available so far for October, including financial market prices, regional business surveys, and consumer sentiment.

Turning to inflation, the most recent data have been encouraging. Looking forward, the sharp decline in commodity prices, especially oil prices, will bring headline inflation down relatively quickly. More fundamentally, the considerable slack in labor and product markets will put downward pressure on the underlying rate of inflation over the next few years. A number of

my contacts already report that their businesses are working on lower margins in the more challenging economic environment. I expect headline PCE price inflation to decline to about 1½ percent in 2009 and core PCE price inflation to be 1¾ percent next year. I expect both inflation rates to edge down to 1¼ percent in 2010. Given the sizable downside risk to the forecast for growth, the risks to the inflation forecast are likewise weighted to the downside.

In conclusion, I think the present situation obviously calls for an easing of policy, as I assumed in my forecast. Given the seriousness of the situation, I believe that we should put as much stimulus into the system as we can as soon as we can.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. In spite of the fact that I am going to validate what President Fisher said in terms of content, I am reminded of what candidate Ronald Reagan said in 1980 against George Bush. To paraphrase, “I paid for the plane ticket down here. I’m going to tell you what I learned.” [Laughter]

Pessimism is running deep, and no one I spoke with this round was immune to the current economic and financial turmoil. Even contacts who have sworn for months that their prudent financial management had insulated them from funding difficulties now report being stressed. The speed of the turnaround in sentiment has been breathtaking. Some of these new reports about changes in financing conditions came from large manufacturing firms that had been doing well this cycle. For example, John Deere noted that its financing subsidiary was having difficulty rolling medium-term notes that fund their customer leases. This seems symptomatic of financial stress because the subsidiary has a large capital cushion with high-value collateral backing the leases. Caterpillar did have better luck getting such funding but only because it went to the market during a very brief window when lenders were actively seeking customers with

high credit quality. I also heard numerous reports of businesses having difficulty renewing long-standing lending arrangements with their banks; and for those who were able to get new loans, the terms were typically viewed as unattractive—at least they felt so.

Several Chicago directors indicated that businesses were successfully tapping existing loan commitments and revolving credit, much along the lines that President Yellen just mentioned. However, this was not greeted enthusiastically by their bankers. In fact, I heard a very interesting story about a major New York bank CEO who spent some time in Chicago a couple of years ago. He was calling a large customer to assure him that their credit lines were good and that they didn't need to be taken down preemptively. The customer, who is our chairman, listened politely and then tapped the line anyway. [Laughter] No wonder banks are worried about their liquidity position.

With regard to nonfinancial developments, reports on both current and expected real activity have turned uniformly more negative. An abrupt change occurred in September. People are spooked—sorry—[laughter] and it is showing through to spending. Retail sales are weak. I have grown accustomed to the inherent pessimism of one of my retail contacts. He has often said that business has never been weaker in 40 years, but this time he said never in 46 years. I also heard many reports about how the slowing in demand is worldwide.

In my District, the sharp slowdown is evident in the Chicago purchasing managers' index. In October, it plunged nearly 20 points, to 37.8, the lowest level since the last recession in May 2001. This index will be publicly released on Friday. Businesses appear to be responding to the drop in demand by doing anything and everything they can to cut back spending. Labor demand is way off. My Manpower contact indicated that even companies that are doing well had turned cautious about hiring and are trying to squeeze out more productivity. He thought

that the drop in sentiment could have some extra impact, given that it was occurring during the annual planning cycle for corporations. The idea was that a lot of harder-to-sell structural adjustments were being implemented anyway and that CEOs wanted to get these moves done quickly and have them behind them by early 2009. This is consistent with a range of reports we have heard that new capital spending is dead in the water or that planned expansions are being canceled. On a positive note, I think we are seeing the benefits of the structural improvement and inventory management that has occurred over the last 25 years. My contacts are reporting some increases in inventories, but they think that so far they have kept stocks under relatively good control. With prompt production cuts, we may not get the additional downside of a big inventory swing later in the cycle, perhaps when it is more painful.

Turning to the national outlook, our forecast envisions a full-blown recession, roughly on the scale of the Greenbook. But like everyone else, I have a great deal of uncertainty about this projection. Things could turn out a lot worse. In contemplating the transmission from recent financial events to the real economy, there seem to be at least two channels to note. First, there is the dramatically reduced availability and higher cost of credit. Second, a recessionary psychology has emerged strongly in households and businesses. With regard to the psychology, I haven't spoken with anyone this round who thought there was a good reason to undertake any kind of discretionary expenditure. Clearly, the self-reinforcing dynamics implied by these and other reports could generate a deeper downturn than I have written down in my forecast. That's a big risk. With regard to the credit channel, the hit to the nonfinancial sector has intensified a good bit. We clearly are sailing in uncharted waters when it comes to quantifying these effects. The factors identified in the Greenbook highlight the unprecedented nature of the financial impulses to the economy.

Looking ahead, I expect that the improvement in financial conditions will be somewhat faster than in the Greenbook. That is my cautious optimism. Still, in our forecast, financial headwinds weigh substantially on growth throughout 2009 and continue, to a degree, into 2010. Accordingly, substantial resource gaps remain open throughout the projection period. Also, I expect inflation expectations to decline in this depressed environment. With greater slack, lower inflation expectations, the reduction in energy and other commodity prices, and the higher value of the dollar, we are projecting core inflation to move under 2 percent by 2010. And I won't be shocked if the Greenbook projection for this to happen in 2009 actually happens. So, on balance, I think that inflationary risks are low but the downside risks to the economy are very high. Much as President Fisher indicated, it is much in line with the reports so far. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. Business and consumer sentiment in the Fifth District has deteriorated markedly. Even though economic conditions were already decelerating heading into our September meeting, a discrete shift in outlook seems to have occurred. It seems to me to have originated during the week of September 15 or shortly thereafter. Our business contacts express anxiety about the national economy, and they express uncertainty about the meaning for their firms' prospects of the astonishing sequence of events that began unfolding that week. Both consumers and firms have been increasingly unwilling to make long-term commitments and engage in discretionary expenditures. Consumers are delaying large and discretionary expenditures. Firms have adopted a wait-and-see attitude on investments.

Our regional survey released this morning shows a substantial drop in business conditions as well. Our business survey respondents report that obtaining business loans is more difficult than three months ago, and there are widespread reports of lenders tightening credit terms and seeking to reduce exposures. Most respondents, however, also indicated that they would still be able to satisfy their borrowing needs. When you listen to bankers, they will tell you that they are tightening standards, but they also report that they are still extending credit to solid borrowers with high-quality deals.

I find it difficult right now to pin down the real effects of the financial market turmoil of the last few weeks. As the Greenbook notes, assessing such effects “poses significant identification challenges.” Specifically, it is hard to disentangle the effects of the increased cost of bank capital from those of the deterioration in the economic environment facing borrowers. Personally, I suspect the latter are playing the more prominent role in the tightening of credit terms right now.

Looking on the bright side, the near-term inflation picture has eased noticeably since our September meeting, mainly because of the decline in oil and other commodity prices. The Greenbook carries this moderation into its long-term forecast, where PCE inflation now converges to 1 percent in 2013. I did a double-take when I saw that—it had me wondering whether the Greenbook was ghost-written this month by President Plosser. [Laughter] Whoever’s forecast it is, the longer-term projected moderation in inflation relies heavily on the opening-up of a large and persistent output gap. In the current circumstances, I am not sure how plausible that story is. In particular, I have been struggling with how to think about the effect of credit market disruptions on the concept of potential output. To the extent that we think of these disruptions as analogous to shocks to intermediation technology—and that is what the models of

these kinds of credit channel effects generally tell you to do—it seems to me that we should see them as pulling down potential as well as actual output. I believe this point has been made at previous meetings. We have also talked before about the tenuous nature of the Phillips curve relationship, and it is difficult to forecast. The slope is sort of flat. We had been scheduled to discuss inflation dynamics, and we postponed that, for good reasons I believe. I hope we can get back to it soon because I think it's going to be relevant to how we see our way through this. In any event, I think we should be careful not to be overly optimistic about the forecast of an inflation decline driven by a large output gap. The shift in the Greenbook's long-term inflation projection is noteworthy for another reason, I believe. We are getting closer to a 1 percent target federal funds rate, and we may actually reach 1 percent at some meeting soon. The last time this happened it sparked a widespread discussion of and concern about the zero lower bound on nominal interest rates.

I want to make a couple of related observations. First, a key to conducting monetary policy at the zero bound is being able to keep inflation expectations from falling and thereby increasing real interest rates. From this perspective, the revision of the Greenbook's forecast from 1.7 percent one meeting ago to 1.0 percent for five-year-ahead inflation implies that we run a monetary policy regime in which five-year-ahead expected inflation varies pretty significantly in response to contemporaneous shocks. I don't think that variability in long-run inflation projections can help our ability to manage inflation expectations at the zero bound. We'd be better if we ran a policy in which long-run expected inflation was more anchored, more stable. You can tell where I'm going with this, I'm sure. This highlights the value of an explicit inflation objective as well as the value of being able to communicate clearly about how we view the functioning of monetary policy at the zero bound. Second, I will just note briefly that the

economics of monetary policy at the zero bound are closely related to the economics of paying interest on reserves at close to the target rate. In fact, if I'm not mistaken, they are virtually identical. I think progress on both fronts would be useful right now.

Finally, let me just comment on financial market conditions. My sense is that what the public has seen—the large failures, the variety of resolution techniques, the deliberations leading up to the Congress's adoption of the bill it adopted—taken together have added up to significant pessimism on people's parts and have altered optimal strategy for a lot of financial institutions. So I think that is altering how people allocate portfolios and has led to further volatility in certain markets. It has led some institutions to adopt a wait-and-see attitude, to see how particular programs are going to be implemented. I think that we are seeing at least some dead-weight loss associated with the burdens of shifting financial flows between things that are covered and things that aren't and we are seeing a good deal of rent-seeking behavior as well. What we are seeing is going to have the effect of masking the evolution of underlying fundamentals. It is going to make it harder to see our way through this and understand just what is happening. I think that is going to be a thicket that we will need to cut through in the months ahead. That concludes my comments, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. While the LIBOR–OIS spread has narrowed somewhat, the mutual fund industry is no longer experiencing waves of redemptions, and commercial paper market conditions have improved, we're still not back to the short-term credit conditions that prevailed before the failure of Lehman Brothers. This outcome is striking considering the historic interventions that have occurred in the past month. With all of the new

government guarantees and equity infusions here and abroad, the limited improvement in short-term credit markets attests to the degree of concern and risk aversion prevailing in financial markets.

These concerns are likely to become even more elevated if the economy slows to the degree expected in most forecasts. Like the Greenbook, our forecast anticipates a significant recession.

The Boston forecast includes three consecutive quarters of negative GDP growth and results in an unemployment rate peaking above 7½ percent. The weakening labor market and the large losses in housing and stock wealth make it quite likely that consumption will shrink in the second half of this year. While we need housing to reach bottom, mortgage rates relative to federal funds rates remain quite high, and further job losses are likely to aggravate the upward trend in foreclosures and add to the downward pressure on housing prices. With limited new home purchases and demand for vehicles weak, consumption of consumer durables is unlikely to recover until next year.

Commercial real estate, which has held up reasonably well, all things considered, is likely to be much weaker next year as new and rollover financing is difficult to obtain and staff cuts and hiring freezes affect the space needed by businesses. More generally, firms are likely to have little incentive to make new investments until the severity of the downturn becomes much clearer. Unfortunately, many of our trading partners are likely to face an even more severe downturn, aggravated by their slow fiscal and monetary response to deteriorating economic and financial conditions. While the Greenbook assumes the stock market will rise by 8 percent for the remainder of this year—it looks as though that happened today—

CHAIRMAN BERNANKE. Nice job, Dave. [Laughter]

MR. STOCKTON. I think that just offset the decline that had happened since the time we finished the Greenbook. [Laughter]

MR. ROSENGREN. —I would say that I'd be surprised by that outcome.

There are several looming financial problems that are likely to affect financial markets. Bill Dudley highlighted the one that I think is the biggest for me, which is that the NAV (net asset value) triggers for hedge funds will be a significant problem in the fourth quarter. Without comprehensive information on hedge funds, it's difficult to know the extent of the problems they are facing. However, since the stock market remains one of the few markets available for the disposing of assets in bulk without a significant liquidity haircut, I'd expect significant selling in the fourth quarter. My second big concern is that rollover financing will become more problematic as financial problems persist. Particularly exposed are real estate developers and highly leveraged private equity firms. My third worry is that neither insurance companies nor commercial banks have reserved for the economic outcome in our baseline forecast. Under-reserving and high payout ratios are likely to limit the amount of additional lending that banks are willing to take on. These financial problems place additional downside risk to our forecast.

Our forecast, like the Greenbook forecast, expects the rate of inflation to slow as a result of falling food and energy prices and significant excess capacity emerging in the economy. In fact, our equations indicate there is a non-negligible risk that deflation will be a problem in the outyears of our forecast. Unlike President Lacker, I was surprised that it stayed as high as 1 rather than as low as 1. The outlook for a weak real economy and falling inflation highlights the need for both monetary and fiscal policy to offset some of the financial and economic problems that we are likely to experience. Thank you.

CHAIRMAN BERNANKE. Thank you. President Hoenig.

MR. HOENIG. Thank you, Mr. Chairman. Let me just briefly say that, in our region, we have continued to do actually better than the national average, but that is beginning to wane. We are seeing, obviously, the energy effect show itself as rigs are being put out of production and you see a

slowing there. We are seeing some concerns being raised about agricultural prices and the boom that has been going on in that part of the economy.

That said, there's still a reasonable amount of business going on that they haven't frozen up. We asked our directors and our other advisers how they were seeing things, and it varies. There were some organizations that say that our non-investment-grade borrowers from the banks, if they had credit already, are still able to access those lines. If they lost some portion because of a bank problem or something like that, they cannot get new credit, so it is cut off in that way. I think that's important to keep in mind. Businesses themselves are beginning to pull back on their capital plans. They've said that. Their balance sheets—obviously outside the auto industry—are still decent, but they're saying, "We're looking at this, and we're pulling back until we see how it plays out." You are beginning to hear more of that. They feel that they can get credit. Some of them are talking about actually trying to pull down their lines to make sure they have the money, and the only thing keeping them from doing that is they don't know what to do with it once they get it. So that's their dilemma. They're afraid of losing their credit, but they also know that it costs if they pull it down. So the dynamics there are interesting.

On the national outlook, I'll be brief. I think that obviously the projections for recession are in place. Down is where we're going. How much, though, is speculation right now. I don't know. I don't know that anyone does until we begin to see things settle out. Inflation should be down as well. Obviously, when you have a recession, you will back off from that, but how much? That's not clear at this point. There is a lot in play, and that's why we don't know the answers to those questions. We have these liquidity facilities and an enormous amount of liquidity out. We have the TARP that is now in process but not completed. That's going to have an impact, and I think those are very important. As we discuss our own policy, we are very close to the point of the quantitative

easing discussion that we had, as you said, in 2003. Pulling that material out and taking a look at that is important as we decide what we're going to put our money into as we try to stimulate this economy. Right now we're subject to waiting and seeing. There's been a lot done, and attitudes are a critical part of this now, and we just have to wait to see how those change over the next quarter or two. Thank you.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. I'm not going to say much about the District conditions. In the Third District, as many of you have noted, they've weakened considerably. I will make just a couple of observations that I think might be pertinent. Our last Business Outlook Survey, the one that was released a week ago, had actually gone into positive territory in September to 3.8, which was the first positive reading we had had since January—since, I guess, last December, actually. And it dropped from that plus 3.8 to minus 37.5 in one month. Now, it's relevant to know the timing of this a bit. Our survey is done during the first 2 weeks or the first 10 or 12 days of each month—which meant that the September survey was closed on September 12, 4 days before that weekend. So what we see is a very precipitous, dramatic change in the tone that had as much to do with events and perhaps policy actions as with what was actually going on in the economy.

I share a bit of President Lacker's concern to try to disentangle a little the tone and feel of the economy, which really did feel as though it fell off a cliff in September, unlike any other month that I've seen during this episode. We have to think carefully about disentangling that effect not just because something fundamental happened to the economy but also to see to what extent policies, whether our policies or Treasury's policies, have contributed to a change in tone and increased uncertainty and aggravated what might be the real fundamentals going on. I don't know the answer

to that question, but it suggests something that many of us have argued over time—that more-consistent and more-predictable policies can help us avoid some of that.

One special question that was asked in this survey in October was whether firms had trouble getting credit. Interestingly enough, only 14 percent of the respondents reported that they had trouble obtaining credit, but twice that number, almost 30 percent, reported that they believed that their customers were having trouble getting credit, which was an interesting dynamic going on that leads to a bit of uncertainty. I guess the best thing I can say about the Third District right now is “Go Phillies!” [Laughter] Maybe that will turn things around in the Third District.

Anyway, let me turn briefly to the national outlook. It has deteriorated, certainly more than I expected, from what I thought in June. In our conference call on October 7, I indicated that I was revising my forecast downward. I expect the economy to contract during the second half of this year and perhaps in the first quarter of next year—but that’s less clear to me—and then gradually approach what I would consider trend growth over 2009, so that by the end of 2009 we’re getting back toward what might be considered trend growth, which I consider to be about 2.5 to 2.7 percent. In essence, for 2010-11, I pushed out my recovery of the economy by somewhere between six and nine months because of the current turmoil. I expect the unemployment rate to peak around mid-’09 at about 7¼ and then to decline gradually to its long-run rate of about 5 percent by the end of 2010. Inflation pressures have subsided somewhat since June, and inflation expectations have remained contained. I expect core inflation to decline gradually from the current levels to my goal of about 1.7 percent by 2010.

Now, my overall forecast is considerably better than the Greenbook baseline forecast. In fact, it’s similar to what we talked about as the “more rapid financial recovery” scenario, which makes some of the adjustment for the financial turmoil somewhat quicker and somewhat less

dramatic than in the baseline. The fed funds rate path underlying my forecast is less accommodative than the Greenbook. I assume that the fed funds rate remains at 1½ percent through the spring of next year and then gradually begins to rise, reaching 4¼ percent by the end of 2010. Now, there are certainly risks around that forecast. Somebody at this table has to be a little more optimistic after all, and we have risks around all forecasts in this environment. Certainly mine is no exception. In particular, the effect of the financial markets, as we've all been talking about, remains highly uncertain and highly risky, and I am not trying to disregard that. Every day it seems as though there's a new development, usually negative, although I guess 900 points on the Dow today should be considered good news.

But in fact, I believe that the risks around the Greenbook baseline forecast are to the upside, as I have alluded to. First, the baseline entails a sizable downward adjustment based at least partly on the volatile financial data, especially spreads. Spreads can fall dramatically, although they don't always do so. But they can rise and fall very quickly, and I think it's very risky to base monetary policy, which ought to be taking a longer-term perspective, on week-to-week movements in such volatile variables. If spreads do continue to fall over the next quarter or two as they have in recent days and if the financial market tools we've put in place have the desired effect, we could see the economy becoming much stronger than the Greenbook's baseline. Second, in the Greenbook, inflation falls and remains low despite a very low fed funds rate path. In fact, it's reminiscent of the funds rate path in 2003-04. This apparently is due to the sizable output gaps that open up in the forecast period. Now, these output gaps arise in the forecast because the effects of the financial turmoil show up mainly in aggregate demand. However, as I've suggested in previous meetings and as President Lacker alluded to, I think a plausible alternative view is that the financial market disturbances we've experienced—resulting in a restructuring of the financial system and a lowering

of the efficiency of financial intermediation—act on the supply side as well, much like a somewhat persistent productivity shock with an associated damping effect on measures of potential GDP for some period of time. If so, we'll see much smaller output gaps opening up, and that means the risk of higher inflation than in the Greenbook, especially if the baseline funds rate path is followed as they lay out.

In thinking about the appropriate monetary policy going forward, it's important that we not let our policy be whipsawed by volatile market data. We have been lowering the funds rate since January, largely in anticipation of a recession or to mitigate the chances of one occurring. Now, it may finally have arrived. Does that mean we have to lower more? A difficult question. The level of the funds rate is always a difficult question. Clearly, if we experience a sustained slowdown in real economic activity, which suggests a lower equilibrium in the real rate of interest, policy needs to allow the funds rate to fall with the equilibrium rate, and I based my recommendations throughout the year on such a forecast. But I think it's a mistake to overreact to volatile data, especially when it's the stock market. Although there has always been the desire and much pressure from markets to do something when we see such swings in the market, in my view, the economy is better served if monetary policy is a steadying hand, taking appropriate action when the intermediate-term view dictates, but not overreacting to fluctuations in the market with an inappropriate tool. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. I have a question about the potential output view. So you would also have to argue that the natural rate of unemployment is higher because of this.

MR. PLOSSER. Yes.

CHAIRMAN BERNANKE. You think that's plausible? I mean, I understand why productive capacity would be affected, but why do you—

MR. PLOSSER. Well, I don't like the NAIRU, but in my baseline forecast, my natural rate of unemployment is higher than what the Greenbook has.

CHAIRMAN BERNANKE. But it rises because of the financial situation. I see.

MR. PLOSSER. Yes, right.

MR. LACKER. If I could, Mr. Chairman, in the dynamic stochastic general equilibrium models, one of which I understand has been adopted by the staff for use in forecasting, employment fluctuates with shocks to productivity, and it's the natural correspondent to that. So in some sense the unemployment rate rises because the natural rate rises, but that's a way of saying that the natural rate goes up in recessions. I'm not sure if proponents of the natural rate view that as consistent with that old model, but that's what happens in these models.

CHAIRMAN BERNANKE. Employment fluctuates, but to get unemployment you need a richer picture of matching, or something like that.

MR. LACKER. Right. You need some matching model, and you get intersectoral flows. You get the same thing.

MR. PLOSSER. But even in my steady state, if I view this as a permanent inefficiency in financial intermediation that changes things, the unemployment rate is a little higher.

CHAIRMAN BERNANKE. President Stern.

MR. STERN. Thank you, Mr. Chairman. I'll start with a few comments about the District economy, which will sound pretty familiar by now. The preponderance of the anecdotes from business contacts that I've talked with since our last meeting have been distinctly negative. It's not just a slowing of activity or some deterioration but a sharp contraction in activity, particularly with regard to discretionary spending or discretionary projects, beginning in the middle of September. The one exception to that is commercial construction, where there are enough things under way that

business remains pretty good. But the backlogs are dropping, and so weakness certainly is anticipated next year. I thought another possible exception to the negative tone was the housing market in the Twin Cities—not that the housing market in the Twin Cities is in and of itself so important but that it might be representative of some middle-of-the-road markets across the country. Clearly, it's not indicative of what's going on in Florida, California, or places like those because sales volumes in the Twin Cities had been up distinctly. Some of that is no doubt due to short sales and foreclosures; nevertheless, there were some other signs that were favorable. The affordability index has really improved a lot. It is back to levels of 2002-03, which Realtors call very comfortable. The ratio of housing prices to rent has moved back to the levels of 2002-03, and that's also encouraging. I already mentioned the higher sales volumes.

Unfortunately, when you get beyond those statistics and look at other things, it's too early to declare stability in the housing market or anything resembling underlying improvement. Part of the problem is something that we've talked about before. The inventory of unsold, unoccupied properties remains very substantial—by historical experience way above anything resembling normal. Second, even though the price-to-rent ratio has come down, it's still elevated relative to the longer-term historical experience. So it looks to me as though, even in that market, there are some further price declines to come and it's going to take some more time to get through all of this—probably well into next year.

As far as the national economy is concerned, I, too, have marked down my outlook for real growth for the balance of this year, for all of next year, and into early 2010 as well. This reflects to some extent the nature of the incoming data but also the intensification of the financial problems and associated headwinds, the impact of the negative wealth effect, and so on. When I looked at my June forecast, back then the forecast obviously looked better, although there were a number of what

I called “identifiable negatives.” They have proven, for worse rather than for better, to be relevant. I already talked about some of them. In addition, we still have the problem in housing with excess inventories. We have steady declines in employment, which obviously have negative implications for consumer spending, and the credit headwinds as well. So now I have the economy contracting through the middle of next year, modest growth resuming thereafter, and robust growth beginning with the second quarter of 2010—quite some distance off.

On the inflation outlook, I have for some time been thinking that inflation would begin to slow this quarter. With the decline in commodity prices, the evolution of the economic outlook, and so forth, my confidence in that forecast has increased, and I do expect inflation to diminish over the forecast period. So I think I’ll conclude with that.

CHAIRMAN BERNANKE. Okay. President Pinalto.

MS. PIANALTO. Thank you, Mr. Chairman. I concur with the view that we face a very serious situation. In most respects I agree with the Greenbook baseline projection, with the reasoning that the Board staff used to arrive at the projection, and with their view that the risks to growth are to the downside. Like the Greenbook projection, my projection is heavily influenced by judgments that we are bringing to the projection from forces that are not captured by our models. The magnitude of the judgmental adjustment has become strikingly large, as we talked about earlier, and I realize that, if one wanted to be a skeptic about the Greenbook baseline, one would have to look no further than these assumptions and question their significant influence on the outlook.

But I am not a skeptic. During the past few weeks, in our Bank we have stepped up our contacts with business people from large, medium, and smaller businesses, bankers, and local government officials. We have been asking them to tell us not so much what they think and feel but what has actually happened to their order books, production runs, and account receivables and what

actions they are taking as a result. It suffices to say that the feedback about the environment was overwhelmingly negative. Respondents say that their situation has gone either from good to bad or from bad to worse, and I want to share just two anecdotes that I think capture the essence of what we are facing—one of them from a business perspective and the other from a consumer perspective. One of my directors is the CEO of a company that produces and sells forklift trucks all over the world. He reported last week that his sales are down and orders have fallen off dramatically, and he expects to be announcing some layoffs soon. But what was making a greater impression on him is the fact that orders for the forklift parts have fallen off as well, and this tells him that the warehouse operators have cut back on the use of trucks that they already own. My second story concerns the owner of a body shop that is located in a solid, middle class community. He told us that he was doing record business all year until last month, when business just went dead. He said it is not that people suddenly don't need auto repairs, but in fact, they are collecting the insurance money and not fixing their cars. They want the cash and they don't want to pay out the deductible.

Stories like these convince me that the Greenbook baseline is on the right track. I do part company with the Greenbook in one respect—namely, the longer-term inflation outlook. I think it is quite likely that we are going to experience some costly reallocation of resources across some sectors of the economy. Finance and construction are two obvious examples. Going forward, I think there is reason to think that fewer workers and less capital are going to be employed in these sectors. The costly adjustment is going to be characterized by slower productivity growth, higher trend unit labor costs, and a smaller output gap than would otherwise occur, leading to somewhat less disinflation in the outyears in my projection. Nevertheless, with output and inflation expected to decline sharply over the coming quarters, I think it is essential for us to be thinking about the zero bound in conducting monetary policy in a low inflation environment, and I will address the

magnitude, timing, and communication aspects of our monetary policy in tomorrow's go-round.

Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. Economic conditions in the Eighth District have deteriorated since the September Beige Book. Citing weak demand and higher input costs, a variety of manufacturing firms throughout the District reported job cuts and plant closings. The decline in manufacturing activity has been concentrated in firms producing durable goods. Service sector activity also continues to decline. In particular, recent layoffs have been reported in business, medical, and financial services. Two large auto dealers have closed and filed for bankruptcy. Retail sales are steady, but contacts have noticed that consumers are trading down to lower-priced products. The residential real estate sector continues to decline across the District. As lending standards have tightened for commercial building projects, industrial construction has slowed.

Payroll employment numbers continue to vary across the Bank's Branch cities. The most recent figures suggest that Memphis and St. Louis continue to lose jobs at a pace faster than at the national level. Louisville has moved from two consecutive months of positive year-over-year employment growth to negative growth in the most recent month. Little Rock continues to experience positive year-over-year employment growth. Unemployment rates in St. Louis and Memphis remain above 7 percent—that's 7.2 percent and 7.1 percent, respectively. Louisville's unemployment rate is 6.6 percent. In opposition to the national trend, Little Rock's unemployment rate has fallen to just 4 percent.

The national outlook is clouded by dramatically increased uncertainty fueled by the financial market turmoil. The explosion of uncertainty is driven in part by speculation about the nature of the government response to the turmoil, both in the United States and abroad. We know from past

experience that, when economic actors—investors, businesses, and consumers—are faced with new and substantial uncertainty, they tend to adopt a “wait and see” approach, during which they make as few commitments as possible. This seems to be a reasonable expectation in the current environment, so we should expect to see many types of important economic decisions being deferred. Anecdotal evidence seems to support this idea. Most likely, this means we will experience an important deterioration in economic activity during the second half of 2008 and into 2009.

In times of increased uncertainty, it can be useful to consider distinct alternative scenarios instead of considering a baseline scenario with many possible offshoots. The financial sector crisis that we are experiencing has some admittedly inexact parallels with the banking crises that occurred in Japan since 1990 and in the Nordic countries in the early 1990s. The general tenor of the literature on these events is that the Nordic countries dealt forthrightly with their financial sector problems, suffered through recessions, but were well positioned to grow once the crisis had been addressed. For Japan, real economic performance was subpar for a long time, and it is the Japanese outcome that is a looming risk for the U.S. economy. Part of the Japanese experience was the lowering of nominal interest rates to zero. This was done, no doubt, in the name of doing everything possible to help the economy recover. It was not very successful and, in fact, may have been counterproductive.

Recent academic work—I’m thinking of Jess Benhabib here—has emphasized the possibility of a low nominal interest rate, low inflation rate, steady state equilibrium, and a trap at very low or zero nominal interest rates. This steady state coexists with the targeted steady state, the one we know and love, which has inflation at our specified target and relatively high nominal interest rates. So there are two possible focal points for the economy. Markets clear at both of these

focal points. My main concern is that if we choose to continue to flirt with the trap steady state, we should think clearly about the possible implications given the current environment. The trap steady state is associated with very low inflation expectations, actually deflation. This is, in fact, what happened to Japan. They experienced deflation of about 1 percent for a number of years. Since our core problems are in the housing market, which is dominated by nominal contracting, deflation could sharply exacerbate our problems and lead to further difficulties. I am, frankly, not sure that this is a wise route for the Committee or for the nation. My preferred approach would be to maintain rates at the current low level and to use alternative fiscal policy actions to address the particular concerns in financial markets. Thank you.

CHAIRMAN BERNANKE. Thank you. Well, it's a little after 6:00 p.m., a long afternoon. Why don't we recess the meeting until tomorrow morning? There's a reception and a dinner up on the terrace, which is for your convenience. There's no business being conducted, and we'll see you in the morning. Thank you.

[Meeting recessed]