

**Meeting of the Federal Open Market Committee on  
August 11–12, 2009**

A joint meeting of the Federal Open Market Committee and Board of Governors of the Federal Reserve System was held in the offices of the Board of Governors in Washington, D.C., on Tuesday, August 11, 2009, at 2:00 p.m., and continued on Wednesday August 12, 2009, at 9:00 a.m. Those present were the following:

Mr. Bernanke, Chairman  
Mr. Dudley, Vice Chairman  
Ms. Duke  
Mr. Evans  
Mr. Kohn  
Mr. Lacker  
Mr. Lockhart  
Mr. Tarullo  
Mr. Warsh  
Ms. Yellen

Mr. Bullard, Ms. Cumming, Mr. Hoenig, Ms. Pianalto, and Mr. Rosengren, Alternate Members of the Federal Open Market Committee

Messrs. Fisher, Plosser, and Stern, Presidents of the Federal Reserve Banks of Dallas, Philadelphia, and Minneapolis, respectively

Mr. Madigan, Secretary and Economist  
Ms. Danker, Deputy Secretary  
Mr. Luecke, Assistant Secretary  
Mr. Skidmore, Assistant Secretary  
Ms. Smith, Assistant Secretary  
Mr. Alvarez, General Counsel  
Mr. Baxter,<sup>1</sup> Deputy General Counsel  
Mr. Sheets, Economist  
Mr. Stockton, Economist

Messrs. Altig, Clouse, Connors, Slifman, Sullivan, and Wilcox, Associate Economists

Mr. Sack, Manager, System Open Market Account

Ms. Johnson, Secretary of the Board, Office of the Secretary, Board of Governors

Ms. George, Acting Director, Division of Banking Supervision and Regulation, Board of Governors

Mr. Frierson,<sup>1</sup> Deputy Secretary, Office of the Secretary, Board of Governors

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<sup>1</sup> Attended Tuesday's session only.

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

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

Ms. Robertson, Assistant to the Board, Office of Board Members, Board of Governors

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

Mr. Meyer, Senior Adviser, Division of Monetary Affairs, Board of Governors

Messrs. Leahy and Nelson,<sup>1</sup> Associate Directors, Divisions of International Finance and Monetary Affairs, respectively, Board of Governors

Mr. Carpenter, Deputy Associate Director, Division of Monetary Affairs, Board of Governors

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

Ms. Wei, Economist, Division of Monetary Affairs, Board of Governors

Ms. Beattie,<sup>1</sup> Assistant to the Secretary, Office of the Secretary, Board of Governors

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

Mr. Lyon, First Vice President, Federal Reserve Bank of Minneapolis

Mr. Sniderman, Executive Vice President, Federal Reserve Bank of Cleveland

Mr. McAndrews,<sup>1</sup> Ms. McLaughlin, Messrs. Rudebusch, Sellon, Tootell, and Waller, Senior Vice Presidents, Federal Reserve Banks of New York, New York, San Francisco, Kansas City, Boston, and St. Louis, respectively

Messrs. Burke, Dotsey, Koenig, and Pesenti, Vice Presidents, Federal Reserve Banks of New York, Philadelphia, Dallas, and New York, respectively

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

Mr. Hetzel, Senior Economist, Federal Reserve Bank of Richmond

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**August 11—Afternoon Session**

CHAIRMAN BERNANKE. Good afternoon, everybody. Today is the last meeting for our colleague Gary Stern. Gary first attended the FOMC meeting as a staffer in 1982 and then was appointed President in March 1985. To provide some cultural context, in 1982 the top grossing movie was “An Officer and a Gentleman,” followed closely by “Tootsie.” [Laughter.] The leading hit song was “Physical” by Olivia Newton-John. [Laughter.] We are in a different world, I think. Gary, you have attended 218 regular FOMC meetings, so you are the most senior member of this Committee by a small margin of six years. That is a remarkable record, and you have provided a great deal of collegiality, insight, and wisdom over that period, and we want to thank you for that. But we will thank you in more substantial way at the September meeting. So thank you. [Applause]

As has been our custom, this is a joint Board–FOMC meeting. So I need a motion to close the meeting.

MR. KOHN. So moved.

CHAIRMAN BERNANKE. Thank you. We’ll begin with staff presentations—first, with open market operations by Brian Sack, followed by Q&A, and then some additional presentations. Brian.

MR. SACK.<sup>1</sup> Thank you. I should start with a warning that I’m going to talk for a pretty long time. I apologize in advance. Prices of risky assets have continued to recover at an impressive pace, boosted by a more optimistic assessment of economic prospects and by favorable news on corporate earnings. The advance in equity prices, shown in the top left panel of the first exhibit, was particularly sharp, with broad indexes up 12 percent to 15 percent since the last FOMC meeting. Equity prices were supported by sizable second-quarter earnings surprises that spanned a range of sectors. As shown in the top right, over three-quarters of S&P 500 companies posted

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<sup>1</sup>The materials used by Mr. Sack are appended to this transcript (appendix 1).

positive earnings surprises in the quarter—about the highest percentage observed over the past fifteen years. At the same time, investors continued to become more optimistic about economic prospects. The responses to our dealer survey indicated that market participants raised their forecasts for second-half growth and saw fewer downside risks to those forecasts.

Given the news on earnings and the economy, investors' perceptions of risk declined further, as indicated by the drop in the implied volatility of equity prices, the middle left panel. Corresponding with that shift, investors showed a greater willingness to hold risky assets. Retail investors, for example, have been reallocating large amounts of capital out of the safest asset classes, such as money market mutual funds, as shown in the middle right panel. That capital appears to be making its way into a range of riskier asset classes, including equity and fixed-income funds both here and abroad.

Given this shift in risk appetite, corporate bond spreads continued to narrow sharply, as shown in the bottom left panel, with the spread on the investment-grade index declining about 75 basis points and that on the high-yield index declining nearly 250 basis points since the last meeting. Other risky asset classes, such as emerging-market debt and stocks, have also benefited.

The panel to the right suggests that the dollar has also been strongly influenced by shifts in investor risk appetite. In particular, there has been a tight relationship between the dollar and risky asset prices, here captured by an emerging-market equity index, with the dollar appreciating last fall as investors attempted to move into safe assets and depreciating more recently as risk appetite returned. On net, the dollar has fallen 1 percent to 2 percent on a broad, trade-weighted basis over the intermeeting period.

The increased optimism about the economic outlook has coincided with favorable developments in the financial sector. Share prices of large financial institutions rose substantially, as shown in the top left panel of exhibit 2, in response to robust earnings reports. Those earnings were fueled by strong profits in trading and investment banking activity. The durability of those sources of revenue is questionable, but that did not seem to trouble investors.

Earnings results for smaller and regional financial institutions were not as strong. Those institutions benefited little from the robust trading gains that helped large firms. Moreover, some regional banks posted greater-than-expected loan loss provisions for consumer loans, and many of them have considerable exposure to commercial real estate and construction loans. Despite those hurdles, regional banks managed to meet their earnings expectations on average, and their share prices performed as well as those of larger firms over the intermeeting period.

The difficulties at CIT that surfaced in mid-July highlighted the fact that financial institutions can still run into difficulties. Nevertheless, financial markets continued to

function well throughout that episode. Moreover, investors' perceptions of counterparty risk in the financial sector improved notably over the intermeeting period. CDS spreads for major financial institutions moved lower, by 50 to 200 basis points in most cases, as shown in the top right. Moreover, the spread of LIBOR over the OIS rate, the middle left, continued to shrink, with the three-month spread falling below 30 basis points. At those maturities shown, spreads have reached levels that many thought would constitute the post-crisis normal. Longer-term spreads, however, still remain elevated.

One hurdle that the financial sector faces going forward is the expiration of the FDIC's temporary liquidity guarantee program (or TLGP) on October 31. The TLGP has allowed financial institutions to issue debt at a much lower cost than they would have otherwise paid, as indicated in the middle right panel. Financial firms currently have \$330 billion of outstanding debt under the program, with maturities out to three years. As that debt matures and has to be rolled over into new securities, these firms will likely face higher financing costs. However, given that the maturity of that debt is spread out and that firms have been making efforts to reduce their reliance on the program, market participants do not currently anticipate any problems around its termination.

This argument raises a broader point to be considered. While money markets and financial markets more broadly have healed to a great degree, the improvement has been conditioned on a number of government support programs—many of which are scheduled to expire over the next six months. Over the period between now and February 1, in chronological order, the markets will need to digest the end of the Treasury's money market guarantee program, the FDIC's TLGP, the Fed's large-scale asset-purchase (LSAP) program in Treasuries, the Fed's MMIFF, the Treasury's purchases of agency MBS, the Fed's LSAP programs in agency debt and MBS, the Treasury's credit facility for the GSEs (or GSECF), the Fed's CPFF, AMLF, PDCF, and TSLF, and potentially the Treasury's TARP authority. The good news is that we will all benefit from some much-needed acronym relief; [laughter] the bad news is that there are many risks involved. The expiration of any one of these programs individually seems manageable, but it is more challenging to judge the effects of removing them all together. That is one reason that we want to continue to monitor markets closely with this in mind.

As shown in the bottom panels, securitized credit markets also improved over the intermeeting period. Here the story very directly involves the effects from government programs aimed at supporting those markets. The consumer ABS market has made considerable strides in the right direction. ABS spreads narrowed further, as shown to the left, and new issuance continued at a decent clip. These developments have been driven importantly by the ongoing support from the TALF facility. The July and August TALF subscriptions for ABS involved about \$21 billion of TALF-eligible issuance, of which about \$12 billion was financed through the facility. Improvements in the CMBS market have generally been slower, but the market has reacted favorably to recent news about the inclusion of CMBS in

the TALF program and in the Treasury's PPIP program. As shown to the right, CMBS spreads have narrowed significantly since the last FOMC meeting. However, spreads are still very wide by historical standards, and there has been no new issuance. With commercial real estate prices falling, delinquencies rising, and considerable amounts of CMBS coming due through 2012, this sector is likely to face considerable pressure for some time.

As shown in the next exhibit, the positive sentiment reflected in recent asset-price movements put upward pressure on Treasury yields. However, the changes were fairly modest, with coupon yields moving up 5 to 15 basis points, on net, over the intermeeting period. The market's expectations for monetary policy steepened a touch, as reflected in the rates on federal funds and Eurodollar futures contracts, shown to the right.

Our dealer survey helps to shed some more light on these policy expectations. The middle panels show the distribution of outcomes for the federal funds rate that are perceived by the respondents for horizons of 12 months ahead (to the left) and 18 months ahead (to the right). As can be seen, the modal forecast is for the federal funds rate to remain unchanged at the 0 to 25 basis point range, even at that longer horizon. However, one feature of being at the zero bound is that the risks tend to be skewed in only one direction. The distributions show that respondents see some probability of higher rates, with that probability building as the horizon extends through 2010. This skewed risk profile has presumably pulled the futures rates up relative to what is perceived to be the most likely outcome. Overall, investors apparently expect that the recovery will be anemic enough to allow the Fed to keep policy rates low well into 2010—a view that has been supported by FOMC communications.

Even though it is seen as still being a way off, market participants also focused on whether the Fed will face any difficulties exiting from its accommodative policy stance. Investors reportedly took some comfort from Chairman Bernanke's op-ed piece in the *Wall Street Journal* and his monetary policy testimony on July 21. This subject was also addressed by several other FOMC members over the intermeeting period, with market participants taking note of the consistency of the message. The discussion of exit is presumably aimed, in part, at keeping longer-term inflation expectations anchored. As shown in the bottom left panel, measures of the five-year five-year-forward breakeven inflation rate rose over the intermeeting period and are near the upper end of the range seen over the past several years. Our interpretation of the level of the breakeven rate is the same as it was at the last meeting—that it has moved up to levels that, while not alarming, show more balance in the perceived risks around the inflation outlook. As shown to the right, our dealer survey indicates that the perceived likelihood of CPI inflation from five to ten years ahead is the highest in the buckets from 1.5 percent to 2.5 percent—levels that are consistent with the long-term inflation projections of most FOMC members.

The next exhibit focuses on the Fed's large-scale asset-purchase programs. As shown in the top left panel, purchases in those programs have continued at a fairly robust monthly pace, though for each asset type the pace has slowed a touch. For Treasuries, the slowing was intended to put the Desk on a trajectory to complete the \$300 billion of purchases in September. For agency securities and MBS, the slowing was driven by market conditions and concerns that a faster pace of purchases would risk some market disruption.

In the Treasury market, there are no signs that our purchase program is having detrimental effects on market functioning. As shown in the top right panel, the amount of dispersion in Treasury yields around our smoothed yield curve has diminished sharply from the very elevated levels that were seen late last year. This improvement suggests that market participants have been increasingly willing and able to engage in arbitrage, limiting the difference in yields across securities with similar characteristics. The improvement was also likely driven by the Fed's participation in the market, as the Desk has often purchased less-liquid securities that were trading at yields well above the smoothed yield curve. As shown in the middle left, trading volume in the Treasury market stabilized and began to pick up in recent months. Moreover, bid-asked spreads ticked down for both repo and outright transactions in recent months. Given these improvements in market functioning and the fact that our purchases are not disproportionately large in that market, we anticipate that there will be no significant disruption by the approaching winding down of the Fed's purchases of Treasury securities. As shown to the right, our Treasury purchases, while certainly sizable, are not overwhelming the market. The scheduled total purchases for the program will constitute about 8 percent of the outstanding stock of Treasuries and 39 percent of the expected net issuance.

As you know, the story is quite different for the purchases of agency debt and MBS. For MBS, scheduled Fed purchases will take up 28 percent of the outstanding stock of securities and more than three times the amount of net issuance. Our purchases represent even larger shares for the agency debt market. Given these sizes, the impact of the Desk's purchases has been considerable in the agency and MBS markets. As shown in the bottom left panel, those purchases have contributed to a dramatic decline in the option-adjusted spread of MBS to Treasury securities. That spread has reached negative territory—an anomaly by historical standards. The compression of the MBS spread and the associated pressures on the functioning of the MBS market make the exit from this program trickier than is the case for the Treasury program. Some options for winding down the purchase programs will be discussed at the end of my briefing.

In terms of economic effects, the MBS spread compression has strongly contributed to the FOMC's objective of providing stimulus to the economy. As shown in the figure, the narrowing of the MBS spread has passed through to some degree to the conforming-mortgage spread, which has declined to around 175 basis points—near its historical norm. That, in turn, has kept primary mortgage rates lower and supported housing activity. It may be difficult or problematic for the Desk to

collapse MBS spreads any further. Thus, it is worth considering why conforming-mortgage spreads have only retraced to their historical norm and not further. There are two factors in play. First, the prepayment option that is afforded to households in their mortgages is very costly today. That is, the option adjustment in computing the option-adjusted spread for MBS is unusually large, mostly because long-term interest rate volatility has been very elevated. Second, but less important, the primary–secondary mortgage spread still remains somewhat elevated. This likely reflects the reduction in the number of originators and the tighter credit conditions for warehousing those loans until securitization. Even with these impediments, the compression of the conforming-mortgage spread has far outpaced that for other mortgage products, such as adjustable-rate mortgages. As can be seen in the chart to the right, while the ARM spread has come off its peak, the improvement in this spread has been much more limited than is the case for fixed-rate mortgages. This difference likely reflects the fact that, while the fixed-rate mortgage market has benefited appreciably from the Federal Reserve’s MBS purchase program, the adjustable-rate mortgage market has not. I will return to this issue and potential changes to the Desk’s outright purchases of MBS at the end of my briefing.

The ongoing purchase of assets has, by itself, continued to add to the size of the Fed’s balance sheet. As shown by the blue area in the top left panel of the last exhibit, outright securities holdings associated with those programs expanded to about \$880 billion—about halfway toward the specified limit of \$1.75 trillion. In contrast to this ongoing expansion, the Fed’s liquidity programs continue to shrink, as shown by the orange area in the chart. This pattern largely reflects the substantial improvement in money markets that was discussed above, which has made these programs increasingly unattractive to users. Overall, summing across these programs, the total size of the liquidity facilities has declined more than \$1 trillion from its peak earlier this year. This decline has just about offset the expansion of asset holdings in recent quarters, keeping the overall size of the balance sheet near the \$2 trillion mark. Nevertheless, as shown in the table, we expect the balance sheet to begin to grow again going forward, as the steady rise in asset holdings and the ongoing expansion of the TALF will begin to outpace the declines in liquidity programs. We currently project that, absent any policy changes, the balance sheet will reach a peak of just over \$2.6 trillion by early 2010, after which it will begin to decline gradually.

That concludes my summary of recent developments in financial markets and Desk operations. I will now turn to two specific issues regarding Desk operations going forward. The first issue is whether to include mortgage-backed securities backed by ARMs in the large-scale asset-purchase program. A memo was circulated to you describing the arguments for and against a shift in this direction and recommending a specific structure for those purchases if the FOMC were to decide to move forward. I will briefly review the main points from the memo.

The case for including ARMs rests primarily on the fact that they are currently an expensive form of mortgage finance for households relative to fixed-rate mortgages.

As shown earlier, the Fed's MBS purchases seem to have depressed the rates on fixed-rate mortgages, whereas the rates on ARMs have instead remained high in comparison. Given that they are relatively expensive, the use of ARMs has come to a near stand-still. Including ARMs in the asset-purchase program might be seen as beneficial for several reasons. First, given that their spreads remain wide, purchasing ARMs-related securities might achieve a considerable improvement in their pricing and hence might provide more economic stimulus than using those same funds to purchase fixed-rate mortgages. Second, it would eliminate the distortion that the Fed has created in households' decisions between what mortgage product best suits their needs. Third, it would help the Desk to achieve the \$1.25 trillion of MBS purchases while, at the margin, taking some pressure off the fixed-rate MBS purchases. And fourth, because ARMs have lower duration than fixed-rate mortgages, it would reduce some of the interest-rate and income risk in the SOMA portfolio.

However, there are also some counterarguments to consider. First, any reallocation to ARMs, because it would come out of the total allocation of MBS purchases, could reduce the effect of the fixed-rate MBS purchases. Second, it could involve certain political and reputational risks. In particular, ARMs carry some stigma given their association with the recent housing and financial crisis, and Fed purchases may be seen as an endorsement of this product. Third, encouraging households to move into ARMs may subsequently present an awkward situation when the FOMC begins to raise short-term interest rates. Fourth, the ARM market is less liquid and less transparent than the fixed-rate MBS market, which raises some complications in the trading process and requires even more extensive reliance on external investment managers. And fifth, given the size of the ARM market, the magnitude of potential purchases is limited.

If the FOMC decides to move in this direction, the Desk recommends a program that would include 3/1, 5/1, 7/1, and 10/1 hybrid ARMs backed by Fannie Mae, Freddie Mac, and Ginnie Mae. The majority of purchases would be expected to take place at the 5/1 sector, which has the largest amount of outstanding securities. Purchases would include both newly issued and existing ARMs and would exclude interest-only ARMs. The program would start with a targeted amount of \$25 billion in purchases, to be conducted over the remainder of the asset-purchase program, although the pace and eventual size of the program would be adjusted in response to market conditions. This allocation would come out of the \$1.25 trillion total amount of MBS purchases. These are the broad principles that the Desk proposes for guiding ARMs purchases. Actual implementation will also require the Desk to make a number of decisions about specific operational issues, as summarized in the memo.

The second issue for the FOMC to consider is the possibility of tapering the Desk's asset purchases as the end dates for the asset-purchase programs approach. The desirability of doing so depends on how one views the effects of those programs. The primary effect of those programs on market interest rates likely occurs through altering the *stock* of securities available to investors. In a framework that considers only such "stock effects," there would be no response to the end of the LSAP

programs as long as it was fully anticipated in the markets. However, it is also possible that various market frictions allow the *flow* of purchases to have meaningful effects on market interest rates. In this case, the cessation of purchases could create a discrete market adjustment—the so-called “cliff effect.” This latter concern may be particularly relevant when the Fed’s purchases are very large relative to the amounts of outstanding supply and net issuance in a market, as is the case for the agency debt and MBS programs. If there is at least some possibility of flow effects, it may be desirable for the Fed to gradually reduce the pace of asset purchases rather than to terminate them abruptly. The tapering could take place over a period of several months around the end of the programs. This approach would allow any flow-related effects on the markets to be spread out, helping to facilitate a smooth market adjustment to a post-LSAP regime. Moreover, as long as the FOMC’s commitment to the overall stock of purchases is unchanged, this strategy should have no detrimental effects under the stock-based perspective on markets.

In order to taper purchases and still reach the full amount of the programs, the Committee would have to extend the end dates of the programs. The only other alternative would be to increase the pace of purchases today in order to reduce it later, but this approach could disrupt market functioning over the near term. The Desk recommends a short extension of the Treasury program to the end of October, to allow purchases to be tapered off over a period of two months or so. For agency debt and MBS purchases, the Desk believes that a slightly longer tapering period is appropriate. The Desk would recommend extending those programs to the end of the first quarter, with the intention of beginning to taper off purchases in a meaningful way in December. For each program, the Desk would decide on a more precise schedule for reducing purchases while still hitting the total amount of purchases decided by the FOMC. The Desk recommends reaching the full allocation of purchases for Treasuries and MBS in order to validate the market’s expectations that have had beneficial effects on financial conditions. It is less important, in our view, to reach the full allocation for agency securities.

At this juncture, the FOMC has to decide only on its strategy for the Treasury program, given that its expiration date is approaching. The agency and MBS programs are not scheduled to expire until year-end. However, market participants are beginning to discuss the exit from these other programs as well, and they are likely to draw some inference about how these programs will be wound down from the approach taken with Treasuries. These considerations will be raised again in the discussion of policy options and statements by Brian Madigan tomorrow.

CHAIRMAN BERNANKE. Thank you, Brian. Questions for Brian? President Bullard.

MR. BULLARD. I am looking at exhibit 4, figure 24, on mortgage spreads. I just want to understand your interpretation of this chart. I see toward the end here that conforming spreads come down dramatically and the ARMs come down dramatically, but you said that you thought

the purchase program did not have an effect on the ARMs. That means just that the level is high?

MR. SACK. Right.

MR. BULLARD. What about the sharp downturn that followed the other line?

MR. SACK. So that's right. I was focusing on the level. The level of the conforming spread is not far from historical norms, but the level of the ARM spread is still extremely elevated compared with historical norms, although it has improved. I would interpret the improvement as being driven not by Fed purchase programs but just by the broader recovery in markets. You point out that it is not that different a magnitude from the improvement in conforming-mortgage spreads, but I think that probably has to do with the fact that it was starting from such a wider, more disrupted level.

MR. BULLARD. I expect ARMs to be unpopular in the stage of the business cycle when interest rates are low and people are talking about, well, when are you going to tighten, as opposed to being in the stage of the business cycle when rates are higher and might come down at some point.

MR. SACK. Well, I think that would presume that households have a more efficient outlook on monetary policy than the bond market more broadly. Obviously, the yield curve in Treasuries or in mortgages should reflect the expected path of short-term interest rates, so I would think that normally the market would be priced in a way to make households relatively indifferent, in terms of the risk, between ARMs and fixed-rate mortgages. The point is that different households may have different preferences based on their different situations. So if the purchase programs have had a very large effect on one product and absolutely no effect on the

other, it is creating a distortion that does not allow households to choose efficiently between the two.

MR. BULLARD. Thank you.

CHAIRMAN BERNANKE. President Fisher.

MR. FISHER. I have a question and then a point to make. The question is with regard to the size of the population of ARMs that are available. You mentioned in your paper that we would eliminate interest-only ARMs. Is it roughly \$200 billion that are eligible here in terms of the total population? Is that correct?

MR. SACK. Of interest only?

MR. FISHER. No, of not interest-only ARMs. We would not pursue interest-only ARMs.

MR. SACK. Sorry. Yes, that is correct. There is about \$400 billion of ARMs in total. About \$200 billion is interest only. In the memo, we presented the arguments for and against interest-only ARMs. In the end, we made a recommendation, but I certainly think we viewed that as an open issue for the Committee to discuss.

MR. FISHER. The point is actually based on the question because, if you look at the Greenbook, Part 2, page III-12, there is a chart of delinquencies on prime mortgages, and the delinquency rate on variable-rate mortgages is four times that of fixed. So here is the question: Do we want to be seen expanding our balance sheet and our asset purchases for poorly performing mortgages such as these or encourage households to take out this kind of mortgage now that they have a 12 percent past-due rate, or is there a chicken-and-egg issue here? I'm curious as to what your opinion is because that is one of the cons you did not mention—that is,

that ARMs have a much higher delinquency rate. Do we want to be perceived as assisting that weak market, or will our assistance lead to an improved market? What's your opinion?

MR. SACK. I guess I wasn't thinking of the ARMs purchases as really affecting the risk profile of the outstanding securities. Obviously, those delinquency rates are very high. They are very high for a lot of reasons, not necessarily that those products are ARMs but rather that those ARMs are sold with very lax underwriting standards. So I think a benefit of purchasing ARMs is not to bring back the kind of mortgage conditions that we saw previously but just to make these a viable product if used with responsible underwriting going forward.

In terms of whether to hold assets that have those delinquencies, we are talking about buying only GSE-sponsored securities. So part of the answer is that we are getting credit protection from that and basically we are buying securities where any credit risks and issues like that are already priced in. So I do not really see it as a portfolio issue that the delinquencies are going up but more as a reputational issue about whether the Fed wants to be involved in products that are still very visibly associated with the housing bubble and the problems that ensued.

MR. FISHER. Just so I understand—again, out of, say, a population of \$200 billion, what percentage of that is GSE and what is non-GSE? Do we know?

MR. SACK. The \$200 billion is GSE-sponsored. In total, there's \$400 billion of GSE-sponsored ARMs. I believe that outside the GSEs, there is about \$1 trillion of ARMs outstanding.

MR. FISHER. We're talking only about GSE-sponsored ARMs.

MR. SACK. Correct.

MR. FISHER. At least half are not interest only.

MR. SACK. Correct.

MR. FISHER. Thank you.

CHAIRMAN BERNANKE. One approach to addressing some of these issues would be to take only 5/1s or longer initial periods. Then, you stay away from the 2/28s and 3/27s, and you don't have the issue that you have an incentive not to raise rates because that will not have any effect on a five-year fixed rate. President Stern.

MR. STERN. There is a two-hander over there.

CHAIRMAN BERNANKE. Oh, sorry. President Rosengren.

MR. ROSENGREN. Just in terms of the credit quality, if you look at the 5-, the 7-, and the 10-year, the credit scores for those are appreciably better than they are for the 30-year and the 15-year products actually. So following up on the Chairman's comment, I think that, if you focused on the 5, 7, and 10 rather than the 1 and 3, you have a very different risk profile, and it actually does tend to match up with the duration that many people plan on staying in their house—5, 7, or 10 years—rather than 30 years, which also has that advantage. So it would recommend potentially thinking about starting with the 5, 7, and 10 rather than focusing on the 3 and the 1, which have a different historical experience with default rates.

MR. FISHER. Thank you. I think that is a very important point. Thank you for addressing it.

CHAIRMAN BERNANKE. President Stern.

MR. STERN. Yes. If we were to buy agency ARMs at the magnitude you are considering, what are your expectations for effects on rates and on volumes in that market?

MR. SACK. We're starting with the \$25 billion proposal. It is going to be useful to compare that magnitude with the purchase program in fixed-rate MBS proportionally to that market. With \$25 billion, we are essentially buying a smaller portion of the outstanding stock.

We would be buying about 15 percent of the eligible outstanding stock compared with 25 to 30 percent for the fixed-rate program. But we would be buying a much larger share of the gross issuance—about double what we have seen for gross issuance so far this year—whereas on the fixed-rate side, we are buying something like 75 to 100 percent of gross issuance. We have calibrated it that way to be somewhat comparable, but I think that the question about what market effects might ensue has to do with that gross issuance. The possibility is that, once the ARM purchases begin, if the pricing improves, then of course you'll see more ARM issuance, and that will give you some scope to raise the size of the program if that is seen as a good approach.

In terms of what effect we might have on rates, I would not be surprised to see an effect in the 50 to 100 basis point range. The memo had some measures of the relative pricing of ARMs versus fixed-rate mortgages, and the deviations were 50 to 150 basis points of difference. You can actually see in figure 24 that there's a considerable difference in the size of the spreads. So given that this market is disrupted and given that it is relatively small, it wouldn't be surprising to have a very meaningful effect on the pricing. With fixed-rate mortgages, we started from a very high spread in a market that was functioning poorly but not that poorly. Here we're talking about a market that's not functioning well at all, so I think we could really have a substantial effect by participating in the market.

CHAIRMAN BERNANKE. President Evans.

MR. EVANS. Thank you, Mr. Chairman. I have a broad question that was stimulated by Brian's discussion of the improvement in market functioning. I wonder, Brian, if you could just offer more of a summary opinion on how much better things are in financial markets. How far are we toward sustainable improvement? You talked about the end of the government programs.

The Greenbook, as near as I can tell, still has the special financial factor add-ons to that, and I'm just ultimately going to wonder where we are with that. It's a little awkward because the Governors have the responsibility for assessing 13(3) conditions, and yet things feel markedly different from March 2008 or September 2008. Here we are in August 2009. We have moved from general market dysfunction to something now that is better, and there is actually some market differentiation, where some markets are doing substantially better than others. They're discriminating—whether or not it is appropriate is the question. So any additional color you could offer on that would be helpful to me.

MR. SACK. In some of the bigger liquid markets—Treasuries, MBS—we've obviously seen considerable improvement from late last year and early this year, and I think enough improvement to where we are now perhaps just on a slower ongoing trajectory for improvement. We are not back to where things were before the crisis. Bid–asked spreads are still a bit wider than they were. One thing that's very different is that trade sizes seem to be a lot smaller. So even at the quoted bid–asked spreads, market depth is much more limited. But it's certainly not bad. It may take some time to get back to that. We may never actually get back to that. So I think you would have to say that those markets in general are functioning quite well. The corporate bond market as well. We have had a lot of corporate bond issuance, a lot of improvement in pricing. So that looks quite decent. The markets that are still very disrupted, as I mentioned in the briefing, are the securitized credit markets. There market activity is very dependent on the TALF. There was basically nothing going on in CMBS until the TALF and the PPIP came along, and what we have seen since the TALF and the PPIP is some pickup in trading—actually some encouraging signs—but no new issuance still. So I think that those markets will take quite some time to come back.

MR. MADIGAN. Two other points may be worth making. One is that, of course, credit intermediation through the banking sector seemingly remains still quite impaired, judging by actual credit flows and by responses to things like the Senior Loan Officer Opinion Survey. Also, as Brian mentioned in his briefing, there's still a tremendous range of support that's being provided to financial markets and institutions. It is difficult to know exactly how to factor that in, but surely that is still providing support.

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. I would like to go back to the point about the 3/1s, 5/1s, and 7/1s and whatever—how that affects the credit scores, a point that President Fisher raised. If we were to go in and concentrate our purchases in some subset of these ARMs, hence driving their rates down, then we expect the market response to that would be that maybe those credit scores wouldn't stay the same, that there would be a response where mortgage brokers and others would help direct people into those products for which we are trying to drive down the yields and make them more attractive. I think there is going to be an endogenous response to that, and we have to be careful that we don't put ourselves in a position by which we are creating even more distortions than we already are by picking products in individual securities and trying to affect their individual prices and not others. I think that is a very dangerous position for us to be in, and we end up perhaps aggravating problems and actually preventing markets from doing the healing that they need to do rather than just helping them along.

My point is that there will be a demand response to this price change and that we cannot necessarily assume that we won't be, in effect, driving people to particular products and away from others, and I think that's something we have to be very, very careful of. So I just think we should be very dubious about our strategy here in terms of making this work. Also it runs a risk

politically—not economically, but politically—and I think this is probably what President Fisher was suggesting. Actually the staff memo raised this issue. Politically it looks as though we're going into something that everybody has been condemning as part of our problem, and I think we should be very, very careful about that.

So I'm just wondering, Eric, do you really think there wouldn't be a demand response to our driving? If Brian is right and we can drive down the yields on the 5/1s and 7/1s by 100 basis points, do you think that there wouldn't be a demand response to that and, therefore, that credit scores might, in fact, decline as opposed to being high?

MR. ROSENGREN. My observation on credit scores was based on the historical data that includes the last recession. As you can see from the charts, in the last recession, the rates were substantially lower than they are now.

MR. PLOSSER. It wasn't much of a recession though.

MR. ROSENGREN. Well, it was a different recession. I'm just saying that the observation on credit scores was based on a period in which actually we weren't intervening and that was a recession. I think it is an open question as to who would take advantage of the program, but right now it looks as if the spreads are oversized relative to what they have been historically. So you might argue that some people who would prefer a five-year or a seven-year product now don't have a product that's functioning in the way that it has historically.

CHAIRMAN BERNANKE. Vice Chairman.

VICE CHAIRMAN DUDLEY. Just to amplify President Rosengren's remarks, we were already distorting the market by just buying fixed-rate mortgages. So you could argue that, if you were to purchase fives, sevens, and tens, actually you'd be reducing the amount of distortion because you'd be bringing those rates back into better alignment with where they have been

historically. So I'm not convinced that the distortion argument goes against the ARM purchases. I think you could argue just as strongly that it gives a case for the ARM purchases.

MR. PLOSSER. So you create one distortion, and you fix it by creating other distortions to offset it?

VICE CHAIRMAN DUDLEY. Right now you are pushing people into fixed-rate mortgages because those yields are so much lower than the ARM yields because you're intervening in the one market and not the other.

CHAIRMAN BERNANKE. Okay. We are in the Q&A session for Brian. [Laughter] We will have a chance to discuss these issues further, of course. President Lacker, did you want to ask a question?

MR. LACKER. Brian Sack, I'm looking at chart 1 on page 7 of 8 of the memo that you distributed, which shows agency ARM issuance monthly beginning in 1994 and up through the present, and it looks as though in late 1998, early 1999, that there was a really strong dip. Quantities got down exceptionally low, and then the same thing happened in 2001. My memory is that those were occasions in which interest rates fell, and if I look at chart 1, it doesn't seem that surprising that ARM volumes are low. Now, in chart 3, you show us the results of some of the regressions. The way it is described in the text, you say that you address this ARM-fixed spread on the slope of the yield curve?

MR. SACK. Right.

MR. LACKER. But did you include the level of the yield curve? This goes back to President Bullard's remark that it certainly seems as if you could look at the data and be forgiven for thinking that, when the overall yield curve is low, there is an effect depressing ARM rates because people think it's going to be mean reverting rather than just a random walk.

MR. SACK. To my knowledge, we did not try the level of yields, and of course, chart 3 shows the outcome of just one model. But I think the argument that ARMs look expensive to households seems pretty compelling. I mean, you do not need a regression to tell you that; you can pretty much see it in chart 24. Even if activity tends to fall off when rates are low, we have to at least entertain the idea that the apparent expense of ARMs—the wide spread that we see today—is contributing to that falloff. So it's possible that the purchase program would bring the ARM spread in and make it more comparable with the fixed-rate spread but still households would choose fixed-rate mortgages because those rates are very low. I think that's possible, and that's fine. I think one would argue, well, let's bring that spread down and then let households make that choice. So in no way are we suggesting that you target some proportion of ARM issuance or push on this until you get ARM issuance back up. We are just saying that, you could argue, Let's bring down what looks to be a very wide yield spread, and let households make that choice.

MR. LACKER. If I could follow up, Mr. Chairman—you used the word “disrupted” about the agency ARM market. I am assuming that this yield spread and the quantities are part of the evidence that you would use to bolster that case. So here is the question: It could be the case that you have qualitative observations bolstering the characterization as “disrupted”—things like market makers who have left the market, wider bid–asked spreads, and the like. But if it is just quantities and these spreads, I guess I find this less than compelling to qualify for the word “disrupted,” the way I usually think of that. More broadly, we did intervene in the fixed-rate securitization market. We would have predicted that the intervention would increase the flow of credit to that sector and reduce the flow of credit to other sectors. It is exactly what we would have expected. So there is going to be an endless supply of other sectors that, because of our

intervention, now are seeing less credit than they otherwise would. So are we on a treadmill here that we will do this and then we will find that interest-only ARMs really deserve some help, and we will do that? What are the criteria here for drawing a boundary between where we are intervening and where we are not? I am not sure I see it in the way you have laid out the pros and cons—it makes it seem as if we just assemble a pro and con list and see what wins each time.

MR. SACK. That last question is certainly a tougher one than we aim to answer in the memo. How far to go is a question for policymakers. However, let me say something about the liquidity issue and whether the ARMs market is disrupted. In general, you know, the ARM market is less liquid than the fixed-rate mortgage market. The fixed-rate mortgage market trades on a TBA basis. That means that a bunch of securities can be delivered into a contract, and that adds a lot of liquidity to that market. It is traded over an electronic trading platform, Tradeweb. The ARM market is different. It trades much more on a specified pool basis. There is no TBA. It is not on Tradeweb. It is literally a deal-driven market in which, to execute an order, you need to pick up a phone and talk to some dealers.

MR. LACKER. It was this way before the crisis.

MR. SACK. This is the way it was before and the way it is now. So just in general the ARM market is less liquid than the fixed-rate mortgage market. Today I think that difference is greater than normal, and you can see that in terms of bid–asked spreads. The bid–asked spreads for ARMs, for comparable-sized trades, are four to eight times what they are for fixed-rate mortgages. I think that difference has gotten greater, and one reason for that is that you have a market in which there is just no new issuance, so there is no flow that is creating liquidity in

trading. So it is really a market that—I don't want to say it is completely dried up in terms of trading, but it has suffered in terms of liquidity.

MR. LACKER. Well, I think the bid–asked spread in any market would go up if the volume went down. I wonder what happened in '98, '99, and 2001 to the bid–asked spread. Do you have a benchmark against which to compare those bid–asked spreads and view them as too high, or is it just a byproduct of the low issuance?

MR. SACK. We don't have a nice time series of bid–asked spreads. In part because there is no electronic platform, we don't have a nice data source to give us a long historical perspective.

MR. LACKER. You don't know if it is high relative to what it would be if it were efficiently undisrupted?

MR. SACK. No. I am saying that, given the lack of liquidity by these measures, given the lack of issuance, and given the cheap pricing, I think the evidence in general supports the idea that, if the Fed were to purchase those securities and encourage new issuance, you would see a pickup in liquidity, and you would see these liquidity measures improve.

MR. LACKER. Mr. Chairman, I have another question about the asset purchase programs, but I understand the discussion here has been about this, so I defer my question until later.

CHAIRMAN BERNANKE. Okay. President Yellen, a two-hander?

MS. YELLEN. I just wanted to comment on President Lacker's question and Brian's response and say that our staff also undertook independent analysis of this issue and estimated an econometric model trying to assess how distorted the ARM and fixed-rate mortgage spreads are relative to their benchmarks. That included more than the slope of the yield curve. It was a

principal-component analysis that implicitly included levels and other things. And it supports the conclusion that Brian drew based on the exercise that he undertook. In fact, our staff concluded that the fixed-rate mortgage rate relative to its benchmark is now reasonably normal and the ARM rate is on the order of 150 basis points higher than you would expect, given the entire constellation of rates.

Another thing that they did was to estimate an econometric model using individual data from the McDash data set to try to get a sense of how the existing differentials are affecting choice between conventional and adjustable-rate mortgages, and they found that the essentially no-issuance, no take-up on adjustable-rate mortgages is precisely what you would expect based on the current constellation of rates.

Finally, they tried to estimate what the likely responsiveness would be if we were able to push the differential down about 150 basis points or other magnitudes to more-normal levels by entering this market. They tried to look at those borrowers who were currently in the mortgage market because historically you have had subprime borrowers with very low FICO scores who aren't in the mortgage market now. So they controlled for a lot of borrower characteristics and tried to compute what the response would be of borrowers who were in the market as of early 2009, and they found a very high interest-elasticity. In fact, they computed that, if we could drive that rate down 150 basis points, you should see the share of ARMs versus fixed-rate mortgages rise to about 35 percent. I offer that just as a clarifying comment.

MR. LACKER. Mr. Chairman?

CHAIRMAN BERNANKE. Yes.

MR. LACKER. If I can just follow up: First, let me say that that sounds like admirable research, and I enjoy benefiting from it, President Yellen. This brings to mind another aspect of

the adjustable/fixed-rate margin. My understanding of the empirics of mortgage losses over the last couple of years is that they have revealed that a substantial selection effect goes on in the choice between adjustable and fixed-rate mortgages. And what we know of models with adverse selection suggests that the relative frequency of good types and bad types in the canonical model is going to influence equilibrium pricing in those models. So you would expect that, if there is more in the general population of the riskier types, you might get higher risk premiums on the ARMs because they are selected by the riskier types of agents, and this could be a factor explaining the high spreads on adjustable-rate mortgages now. Whether it would be picked up in an atheoretical principal component analysis or not, I don't know. I just mention that as something that has arisen out of the data recently. Thank you.

CHAIRMAN BERNANKE. Let the record show that President Lacker's reference to ARMs dealers had to do with mortgages and not with other things. [Laughter] A short intervention, President Plosser?

MR. PLOSSER. Yes, a short one. Brian, the way you have described the ARM market and how it is not functioning the way we think—or at least some estimates suggest that it might—I wonder if New York and the staff have on their agenda what the next market is. If I listen to what you say, we ought to be in the jumbo market. And I am wondering, with the very high spreads in the jumbo market, can we expect to see a proposal from the staff that we are going to buy jumbos now in order to get their spreads down?

MR. SACK. No. [Laughter]

MS. MCLAUGHLIN. We are not allowed to.

MR. PLOSSER. The argument is the same, though, isn't it?

CHAIRMAN BERNANKE. You can't buy jumbos. They are not GSE guaranteed.

MR. SACK. Yes, they have to be GSE guaranteed.

MR. PLOSSER. We could think of a way, couldn't we?

CHAIRMAN BERNANKE. No, no, no, no. [Laughter]

MR. SACK. There is another point, which is that the expansion of the conforming-mortgage limit has actually brought what would have been a lot of jumbo new issuance into the conforming-mortgage market. Moreover, most fixed-rate MBS pools can have up to 10 percent of jumbo conforming mortgages in them. So the asset-purchase programs already in place are already helping to support some high-balance mortgages.

MR. PLOSSER. Okay.

CHAIRMAN BERNANKE. President Hoenig.

MR. HOENIG. In a sense this is going to carry the discussion where it has already been, but if I remember right, we had some discussion of this at the last FOMC meeting and went against going forward with it at the time. And given my sense of things, although things remain fragile in the housing market and elsewhere, things have improved. They are better than they were. It is not that I mind having it brought back, but I am wondering, Brian, what has happened between the last FOMC and this FOMC that makes this worth bringing back for discussion? The market is not perfect yet. We still have this distortion in the ARMs, but there is some improvement showing. I think that the markets will straighten out with time, especially if the economy is on a healing path. Is there enough need for this to accelerate the recovery or settle out the markets to bring this back and reconsider it at this meeting?

MR. SACK. Just to be clear, we are not bringing up this issue because of something that has happened, a worsening of conditions, over the intermeeting period. I think we left the last meeting thinking that this was an open issue and that we wanted to present the Committee with

the full range of arguments on both sides and let the Committee decide it. You know, we are well into the program. We are at a point where people are beginning to discuss the exit. Maybe there is an issue about whether it is the right time to be making changes like this, but we just wanted to present the case. In terms of timing, given the size of the program we are talking about, there is no issue. It would be very easy to get this program done in the size we have talked about, in the time left.

MR. HOENIG. Thank you very much, Brian.

CHAIRMAN BERNANKE. Just to be clear, we will survey everybody's views either in the go-round or, if you don't express a view in the go-round, we will check with you after the meeting. So everyone's thoughts will be heard.

MR. HOENIG. Thank you.

CHAIRMAN BERNANKE. Other questions for Brian? President Lacker.

MR. LACKER. Yes. This has to do with our asset purchase program. I want to refer to chart 25, "Balance Sheet Assets by Category," on the last page of your presentation. It looks as if, when we buy our large-scale assets, short-term liquidity facility usage goes down. That suggests that maybe banks have a certain amount of reserves they want to hold, and when we buy stuff, they have to borrow less to have the reserves they want to hold. In fact, reserves went down in the last intermeeting period, and we keep missing the forecast of reserve balances and short-term liquidity facility usage on the low side as we ramp up these purchases. My understanding is that you go around facility by facility and construct these forecasts, and then reserves sort of pop out as the residual. Now we are going to keep purchasing assets, and my understanding is that the forecast says that we are going to take reserve balances from \$700 billion to \$1.4 trillion.

There is an interesting memo by Charles Sims and Kevin McDonald on the MarketSource website that forecasts balances for the large banks and for various bank categories like community banks. My sense is that there is a sort of judgmental forecast as to how the shares of total reserve balances are going to change, but it has Bank of America—this is the largest holder—going from \$140 billion to something over \$250 billion. I checked this morning. They are planning to reduce their reserve balances over the next several months, and the reason is that the cost of carry is too high. I mean, it is valuable to them in terms of the liquidity it gives them; but at 25 basis points, it is below their cost of funds, and they are planning to shift funds into cash equivalents, like Treasuries and agencies, that are higher yielding and have a lower cost to carry. So my question is, What effects do you expect, if this hypothesis is true, of our expanding large-scale asset purchases enough that short-term liquidity facility usage is driven to zero and yet reserve balances keep going up? What yields are going to change to get banks to hold this? How does that square with the Greenbook's forecast that yields increase rather than decrease over the period? And how much stimulus does that provide, in some broad sense? I realize that is a tall order, but I am just raising the question of whether there is a discrete change in the sense of the stimulus we provide as we cross that threshold.

CHAIRMAN BERNANKE. This is how quantitative easing works. You induce banks to substitute away from reserves, but they have to hold the reserves in the end.

MR. LACKER. Right.

CHAIRMAN BERNANKE. So the yields change, assuming that we would be more accommodative. And that is exactly what we are trying to do.

MR. LACKER. Well, I argued in January that is the effect of what we were having to do, so I am aware of that. But we didn't sign up to do an infinite amount of it. We want to do the right amount.

CHAIRMAN BERNANKE. Right.

MR. LACKER. And as economic conditions change—and I argued this in January as well—we need to adapt, just the way we adapt our funds rate when the funds rate is operative. We ought to be thinking about how much stimulus we are supplying. So the question arises, Do we know what kind of stimulus we are going to be supplying? Apparently, the banking system isn't planning on doubling their holding of reserves any time soon.

CHAIRMAN BERNANKE. Well, these asset-purchase plans are not set in stone. We began them in March at a time of very weak conditions. We have reviewed them at each meeting. And if we decide there is too much stimulus in the economy, given our projections, then we can reduce them. So they are a choice variable at each meeting. But you have just described exactly the way the quantitative easing part of this is supposed to work.

MR. LACKER. Yes, I know. But is this consistent? I mean, this suggests that, when we cross this threshold, there will be a discrete downward effect on these longer yields. We may want that; we may not.

CHAIRMAN BERNANKE. I don't see any reason why it would be discontinuous. I think it is continuous.

MR. LACKER. Well, because there is a discontinuity in the use of our short-term liquidity facilities at zero.

MR. CARPENTER. Just one minor clarification, though, President Lacker. Some of the facilities, if we take two of them in particular—well, just take the CPFF as a single example. At

its peak, the CPFF was very, very large—well over \$200 billion. And it wasn't necessarily just banks borrowing that. As that usage came down, that was not in the first instance a bank deciding that they have access to funds in one case and so they are going to give it up in another case. So it is not obvious that it is quite as tight a link of reduced use of liquidity facilities, simply because of the increase in the provision of balances from that asset purchase.

MR. LACKER. No, I understand that the CPFF is in this orange part here. And to some extent that is different from the PCF and the TAF, where it is driven by their demand for funds, I think.

MR. SACK. Yes. I would just add, as Chairman Bernanke said, that the example you gave of Bank of America is basically describing the portfolio balance effect, which underlies the stock effect that I talked about. Basically, the system as a whole has to be forced to hold these liquid assets instead of longer-term assets. To make participants happy to do that, the yields on the longer-term assets have to be lower. The way we have thought about it is that this is all priced in already. If you believe a stock effect, where the effects are based on the expectation of what the stocks are going to be, completing the asset purchase programs that are already announced is going to force this portfolio reallocation. But markets tend to bring it forward, so you don't get the flow effect as it happens. You get it priced up front. This flow versus stock issue is something that we are conscious of, and maybe you are raising the fact that the flow issue also depends on the level of reserves, and so we are still going to get some effect there. But we tend to think of most of the effect as coming through the expected stock, even though we allow some possibility of flow effects and make recommendations for policymakers to hedge themselves in case there are these flow effects.

MR. LACKER. Strange as this may sound, I am sort of willing to entertain the notion that the yield curve doesn't build in this sort of effect yet.

CHAIRMAN BERNANKE. You have raised a good point, President Lacker, about the substitutability between these two forms of stimulus, and I think we ought to continue to think about that. If there are no objections, I would like to go on to the next portion. We have some staff presentations on reserve management, which bears exactly on some of these issues, and then a presentation on the TALF. So let me turn first to Chris Burke. We will hear four presentations, and then we will have Q&A for all four. Chris.

MR. BURKE. Thank you, Mr. Chairman. The FOMC has discussed using reverse repo operations in scale as part of its strategy for eventually draining reserves and raising short-term interest rates from their current low levels. This briefing will provide an update on operational readiness, describe some of the key aspects of the program and their implications, and briefly discuss the importance of counterparties, including a discussion of the special case of conducting reverse repos with the GSEs.

An important operational aspect of large-scale reverse repos is the form of settlement. There are three different types of settlement—delivery versus payment, held in custody, and triparty. The Federal Reserve has used all three, but for large-scale reverse repos, triparty settlement is the only feasible choice. In triparty repo, both the borrower and the lender have cash and collateral accounts at the same triparty repo agent, either JPMorgan Chase or Bank of New York Mellon. There are several reasons why triparty settlement is required. Most important, it provides access to the wide range of institutional cash investors who use triparty repo. In addition, triparty agents provide collateral management services for term repo and other services that current FRBNY systems are not set up to provide.

A Federal Reserve reverse repo in the triparty structure, however, is not sufficient to drain reserves, as at the end of the day the funds that the Fed borrowed are in the Federal Reserve account of the clearing bank. To drain reserves, therefore, the clearing banks must take the additional step of sending the funds to the Fed at the end of the day, and because of the nature of triparty, the Fed must return the funds to the clearing banks each morning. These additional steps create operational and legal complexities for the program. As such, the staff believes that the Desk should establish a complete operational and legal system for conducting reverse repos using Treasury and direct agency debt first, before designing the ability to conduct reverse repos using agency MBS collateral, which involves further complexities.

An initial reverse repo program with the capacity of as much as \$100 billion, using primary dealers as counterparties and Treasury and direct agency debt as collateral, is expected to be available in early September. This has required the establishment of new tools to manage the operational aspects of the program, new legal documentation with both the clearing banks and the dealers, and negotiations with the clearing banks on the fees involved. Because the main services that triparty repo agents perform involve the management and pricing of collateral, the triparty fees are paid by the collateral providers. Even though the Federal Reserve has been using the triparty system for repo transactions for years without paying fees, the use of triparty repo to drain reserves will require the Fed to pay fees to the clearing banks. Initial discussions with the clearing banks suggest that annual triparty fees for a reverse repo portfolio of \$500 billion are likely to be in the range of \$10 million to \$15 million. Current discussions with the clearing banks are focused on eliminating the differences in proposed fees from the two clearing banks and reducing the final fees. Negotiations could take up to another month to complete and document.

The legal and fee groundwork laid for reverse repos using Treasury and agency debt should also cover the use of agency mortgage-backed securities. However, new operational processes will need to be designed and implemented for agency MBS, primarily because of our use of investment managers and custodial accounts for managing our agency MBS holdings. We anticipate that the extension to agency MBS collateral should be completed in the fourth quarter.

The most important issue regarding the potential scope of the reverse repo program is the set of counterparties. Our current open market operations are conducted with only the 18 primary dealers. However, primary dealers tend to be net borrowers, not net lenders, in the repo market, meaning that as a group they are a poor fit as reverse repo counterparties. Further, dealers have limited capacity to act as intermediaries between the Fed and other cash investors, as doing so would gross up their balance sheets. Based on discussions with about half the primary dealer community, total dealer capacity for reverse repos is expected to be only about \$100 billion and perhaps only half of that on month-ends. Dealers simply do not have the balance sheet capacity to handle the size of program being contemplated. Thus a program of any size will require an expansion of the counterparty list. The identification and establishment of an expanded set of counterparties, which is what would enable the expansion of the program beyond its initial \$100 billion size, should be complete by year-end.

One area of exploration related to expanded counterparties is a reverse repo program focused on the GSEs, in particular Freddie Mac, Fannie Mae, and the 12 Federal Home Loan Banks. Nearly all have expressed a willingness to consider engaging in reverse repos with the Fed, and current estimates suggest that a program targeted at these GSEs would be between \$50 billion and \$75 billion in size. The potential costs and benefits of a program of this nature, however, require more study, as the magnitude of the effect on the federal funds rate is not yet fully clear. A \$75 billion program would not substantially reduce the overall level of reserve

balances from their current and expected elevated levels. And while it may be the case that removing these particular participants in the federal funds market would help increase federal funds rates in general, that conclusion is not obvious. Staff members at the New York Fed and the Board are working to better understand the potential rate effects of such a program. In addition, removing the GSEs from the brokered federal funds market would significantly shrink that market and make it more idiosyncratic and perhaps a less relevant indicator of broader funding conditions.

These are issues that will have to be addressed when the FOMC considers the scope of the reverse repo program and the way it fits into a broader strategy for tightening financial conditions. My purpose today was simply to indicate some of the operational conclusions that we have reached to date and define some of the issues that policymakers will have to take into consideration going forward. Thank you. Seth Carpenter will now update you on the term deposit facility.

MR. CARPENTER. Thank you, Chris. A term deposit facility could be another part of the tool kit for implementing a decision to raise short-term interest rates. Because a deposit facility would be created under the authority for paying interest on reserves, access would be limited to depository institutions and not, for example, the GSEs. This distinction is a clear difference from Chris's description of reverse repos. Funds deposited in a term deposit facility would not be available to clear payments, satisfy reserve or clearing balance requirements, or be treated as balances for purposes of calculating overdraft fees. In essence, by shifting balances out of DI's master accounts, a deposit facility would lower excess reserves.

The quantity of excess reserves that could be absorbed by a deposit facility is unclear, though logically it should increase as the interest rate paid on term deposits rises. The staff is evaluating two potential approaches for setting the rate paid on term deposits. The Federal Reserve could auction a fixed quantity of term deposits, with the rate established in the auction. Alternatively, the Federal Reserve could post the interest rates that it will pay on term deposits, and DI's would decide what quantities they wish to deposit at those rates. In either case, the rate paid would be constrained by the statutory requirement that rates not exceed prevailing market rates. The staff currently envisions that a deposit facility would be a somewhat blunt tool and be used to drain a block of reserve balances rather than as an instrument for day-to-day reserves management. The auction-rate approach would likely give the Federal Reserve greater control over the quantity of term deposits than would a posted-rate facility. Such control might be desirable if other tools, such as reverse repos or asset sales, were to drain such a large quantity of reserves that precision over the level of reserves would become important again. That said, under either approach, settlement would likely occur with a lag of at least one day, partly to enhance the predictability of the quantity of reserves.

In practice, the Federal Reserve would announce the details of each operation, and an administrator would enter those details into an automated application that has been

largely developed. Using a web-based interface for the new application, depository institutions would submit tenders electronically and get notification of awards. For auction-rate facilities, in particular, the application also provides the capability of noncompetitive bids, which might appeal to some of the smaller depository institutions.

The background work to put a deposit facility into operation is well under way. The Federal Reserve could announce a deposit facility as early as November and implement the facility before the end of the year. IAS, the Integrated Accounting System, has been modified to accept settlement entries from the new term deposit application. During the next several months, System staff members will complete and test the deposit facility application. Implementing a deposit facility would also require a number of additional steps beyond those already completed, including preparing any necessary *Federal Register* notices, drafting legal agreements, educating DIs about the new facility, obtaining signed versions of the legal agreements from DIs that may wish to use the facility, and issuing the electronic certificates that DIs would need to access the deposit facility application through the web-based interface. Completing these steps would take several months and entail a significant, coordinated effort by System staff members across a number of business lines. Jamie McAndrews will now discuss reserve collateral accounts.

MR. MCANDREWS. Thank you, Seth. I will update the Committee on the possibility of creating reserve collateral accounts as a means to achieve better control of the federal funds rate using interest on reserves. As you know, the effective federal funds rate has generally been lower than the interest rate paid on excess reserves since October 2008, and the size of this divergence has fluctuated over time. Competition among banks might be expected to narrow that divergence because buying funds and placing them on deposit at their Federal Reserve Bank is both relatively inexpensive and completely risk free. One explanation for the divergence is that imperfections in the fed funds market short-circuit the competitive process by which the fed funds rate would be bid up. Some banks are paying, for example, 15 basis points to borrow and then earn 25 basis points at the Fed, but other banks are not bidding up the rate to 16 basis points or higher. Reserve collateral accounts are intended to facilitate competition that would bid up the rate and generate a tighter link between the interest rate paid on excess reserves and the market rate. Creating this tighter link now would help dispel doubts about the Fed's ability to use interest on excess reserves to raise the fed funds rate when the time comes.

Why isn't competition bidding up rates more efficiently? One possible reason is that counterparty credit risk impedes rate-based competition. Fed funds trades are uncollateralized loans. Consequently, a firm must carefully select its counterparties and limit the amount lent to each of them. These restrictions limit competition for funds. If a firm could be freed from concern about its counterparty's credit quality, it could search among a wider set of firms for higher bids and for larger trade sizes. Reserve collateral accounts, or RCAs, would create the possibility of collateralized fed funds trades, which would allow many more banks to bid for funds in the market.

How do RCAs facilitate collateralized fed funds trades? To begin, note that an analysis of data from Fedwire suggests that, in July 2009, approximately half of the daily average of \$125 billion of fed funds trades consisted of GSEs lending to banks, with the other half consisting of bank-to-bank trades. So suppose that two firms, a GSE and a bank, agree to use RCAs to conduct collateralized fed funds trades. The bank would request that its Federal Reserve Bank create an RCA, separate from the bank's master account. The account would have a unique feature: The bank could not wire funds out of its own RCA. The funds in the account would, however, earn interest on reserves for the bank paid at the rate on excess reserves. Under the terms of their collateralized fed funds trade, the GSE would wire funds into the bank's RCA, and the next day, the GSE would pull the funds out of the bank's RCA back into its own account, using the operational capabilities of the Fed's National Settlement Service. So the account can be thought of as a locked box into which funds are placed and to which the GSE is given the key. The funds are put into the box by the GSE at night, they earn interest for the bank, and the GSE retrieves the funds the next day. Separately, the GSE and the bank agree on what interest rate the GSE would earn from the deal.

This arrangement would be governed by agreements among the Federal Reserve Bank, the GSE, and the bank, in which the Fed would acknowledge that the GSE has a lien on the funds in the RCA. That acknowledgement would allow the GSE to perfect a security interest in the account. As a result, if the bank with which it was doing the deals failed, the GSE would still get back its principal, as the funds in the account would be collateral for repayment. With the infrastructure of RCAs in place, we could expect the GSEs and other firms, perhaps including banks, to establish RCAs with banks if they can earn higher rates by doing so. Parties to RCA agreements would be free to borrow or lend on an uncollateralized basis; this possibility should help in aligning short-term rates through arbitrage activity.

Another possible impediment to competition for funds in the current environment might come from banks' balance sheet concerns. Some banks might fear that their buffer of capital to assets above minimum levels is too low for them to bid aggressively for funds. Establishing an RCA would be most attractive to those banks with the least balance sheet concerns, because they would be willing to pay the highest rates. In this way, RCAs would allow market prices to be determined by the banks that are best positioned to purchase funds, which would further reduce the divergence of market rates from the interest rate paid on excess reserves.

Our next step would be to approach a number of the GSEs and some banks to gauge their views as to the feasibility of RCAs and their attractiveness. If a sufficient appetite for these arrangements appears to exist, Federal Reserve staff would then plan to establish a Systemwide steering group to form a precise timeline for all the implementation steps and to determine if any remaining unforeseen impediments to the creation of RCAs exist. I now turn to Bill Nelson, who will update the Committee on issues in the TALF program.

MR. NELSON. Thank you, Jamie. I will briefly review the staff's evaluation of legacy RMBS as potential TALF collateral and then discuss a proposed extension of the facility's end date. Staff members from the Board and the Federal Reserve Banks of Atlanta and New York have worked to understand the potential economic and financial benefits and costs of accepting legacy RMBS as collateral for TALF loans. The staff limited their investigation to about 16,000 bonds, with a face value of \$1.2 trillion, that are still performing, have relatively straightforward structures, and were originally rated triple-A.

RMBS are a complex and heterogeneous group of assets. As a result, it's impossible to identify a set of bonds with the lowest credit risk from the larger universe without conducting a bond-level analysis. In short, there is no equivalent of the legacy super-senior CMBS bonds that are currently TALF eligible. The prices of the pool of bonds under review have risen from their mid-March nadir, with gains accelerating in recent weeks. The expected return to an investor buying a bond at today's prices is now typically half the return available a few months ago. Given the recent increase in prices, adding legacy RMBS to the TALF, especially if confined to the safest bonds and paired with large haircuts, might not increase bond prices appreciably. Instead, the facility would act more as a backstop financing vehicle should risk premiums widen dramatically in coming months. Moreover, because most bonds are expected to take at least some write-downs in coming years, to implement even a limited facility we would have to hire multiple vendors to carefully analyze candidate bonds, determine conservative haircuts, and effectively communicate loan terms to potential investors.

Turning to the TALF end date, currently the facility is scheduled to close on December 31, 2009. The staff is proposing that the Board authorize TALF loans to finance new-issue CMBS through June 30, 2010, and authorize all other TALF loans through March 31. We are proposing an extension because at this point ABS and CMBS markets appear to require the TALF to function and because issuers and investors need assurance that the TALF will be available for several months into the future. The ABS and CMBS markets remain impaired and appear likely to remain impaired through the proposed new deadlines. There is little near-term prospect for a significant revival of non-TALF investor interest in ABS in volume, and the economic recovery remains tentative and potentially contingent on the continued availability of credit for consumers and businesses. The new-issue CMBS market has been shuttered for over a year, and the only deals on the horizon are relatively small TALF-financed deals. Despite the impairment, the TALF is encouraging the flow of credit to businesses and households. Staff analysis and a recent survey of issuers indicate that the TALF has contributed to narrower spreads and has played a critical role in facilitating new securitizations.

There are benefits to announcing an extension sooner rather than waiting till the end date is closer. Potential issuers of new CMBS report needing six months, on average, to arrange relatively large deals involving multiple borrowers.

Consequently, an issuer that begins the process of putting together a new-issue CMBS deal today risks not completing the deal by the end of 2009, after the current TALF deadline. Similarly, potential investors in the TALF indicate that it takes time to organize investment pools, and the looming deadline is damping interest.

While extending the TALF may yield benefits, it may also have costs. In particular, allowing the program to close might speed the development of alternative methods for financing loans to businesses and households, albeit at the expense of near-term disruptions in securitization markets. A potential cost of extending the deadline for legacy CMBS is that it might reduce the urgency among investors to arrange TALF-financed deals.

If the Board decides to extend the facility in the manner proposed, it could evaluate the need for a further extension later this year or early next year. At that time, the staff can propose potential adjustments to the program to make TALF financing less attractive, if appropriate. Conversely, if market conditions improve more quickly and significantly than expected and conditions are no longer unusual and exigent, the facility would be required to be closed at an earlier time.

These issues were discussed by the Board at a meeting yesterday. No decisions were made, but Board members generally expressed support for suspending staff work on legacy RMBS and extending the TALF deadline to the proposed dates. If these are the Board's conclusions after the discussion today, a press release reporting the new end dates and indicating that further expansion of the TALF appears unlikely at this time could be released later this week. That concludes our prepared remarks.

CHAIRMAN BERNANKE. Thank you very much. Just to summarize briefly—first, on our exit strategy, we have a belt-and-suspenders approach, a two-pronged approach. One part is the interest rate on reserves, and the other is management of reserve balances. What we heard today was, I think, considerable progress on a variety of mechanisms that would allow us to manage reserve balances to help us exit from our accommodative policies going forward. On the TALF, to reiterate what Bill said, the sense of the Board—and we are interested in FOMC input—was that we would suspend any further expansion to other asset classes. We looked at CLOs, RMBS, and CDOs. Is that the right list?

MR. NELSON. CLOs, new issue RMBS, and now legacy RMBS.

CHAIRMAN BERNANKE. Yes. So just for clarity, we would announce later this week that we are suspending consideration of additional asset classes—not saying so, or perhaps even saying so—but obviously, if conditions change radically, we could revisit that. But for now we will suspend that. In the same press release we would announce the extension of the TALF to March 31 and for new CMBS only to June, because that particular category requires a much longer lead time to put together deals. So that is what is on the table as far as the Board’s discussion is concerned. Now, let me turn first to Q&A for the staff, and then we will have an opportunity for further discussion as well. Are there any questions for the staff? Vice Chairman.

VICE CHAIRMAN DUDLEY. I was just curious where the staff came out in rank ordering of these different proposals and whether they were viewed as complements or substitutes? Should we embark all three, or should we go forward with one faster than the other? They were three separate briefings, but I didn’t get a sense of how to think of them in total.

MR. MADIGAN. I think at this stage we view all of them as potentially productive to work on further. They are at somewhat different stages of development, but I think that they all have significant plausibility as methods of dealing with reserve issues. I think we wouldn’t recommend at this stage deciding definitely to use one in favor of another one.

CHAIRMAN BERNANKE. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. My question is a little like Bill’s question, but it is aimed, Jamie, at the RCAs. Very clever. I have a number of questions, but I wonder, if we do those other things, whether the RCAs, which strike me as a more radical kind of thing to do, are necessary or even helpful. In talking about the reverse RPs, we said there was concern that doing reverse RPs with Fannie and Freddie might detract from the workings of the fed funds—

brokered funds market. Why wouldn't the RCAs have the same negative effect? And if we were doing reverse RPs with Fannie and Freddie, which seems like a more natural extension of what we are doing now, wouldn't the RCAs be redundant with that? What would they do? Then, sort of more broadly, wouldn't doing this splinter the fed funds market to some extent, detract from liquidity in the market by breaking it into two pieces—a collateralized piece and a noncollateralized piece? And then, why aren't RPs a substitute for RCAs? What do we need those for when we have RPs already for securitized borrowing and lending and presumably putting upward pressure on the funds rate?

MR. MCANDREWS. Great list of questions. With regard to the workings of the fed funds market, I think that, as I mentioned, there is about \$125 billion traded per day in the fed funds market. About half of that is bank to bank, and I don't think we know how disruptive that would be if there were reverse RPs or whether that would continue. I have looked at the distribution of banks' balances after you remove the fed funds trades they do per day, and there are still many banks that operate with negative balances per day and, therefore, have to enter the fed funds market. This is obviously a choice that they are making today. Even with an expanded balance sheet of \$1½ trillion, let's say, the payments that cross our systems each day amount to about \$3 trillion to \$4 trillion. So there will still be a need for banks to trade fed funds. I don't think that that market would necessarily either disappear or be severely adversely affected.

Would these be redundant if we used reverse RPs with the GSEs? I think largely they would be redundant, if we use reverse RPs with the GSEs. However, these would be available to banks as well as to other entities. So as Chris explained, if we just remove the balances from the GSEs, there is still a question of where the funds rate would settle. I believe that the RCAs, by virtue of their applicability to any participant in the market, would set a harder floor on the fed

funds market. I think the question is whether we think RPs are more operationally complex, more hands-on intervening in the market, versus the RCAs, which might be thought of as allowing the market participants to trade among themselves and find the rate.

Then, the question is, Would the market bifurcate into two pieces? That is a clear possibility. We would have the collateralized market, which would be the floor rate essentially, and the uncollateralized market, which would continue as it is today. So it would add a new part to the market. Whether or not that would be seen to be desirable I don't know. If I may say, as the Chairman was saying that we have a belt-and-suspenders approach, the RCAs are an idea to tighten the belt. [Laughter]

CHAIRMAN BERNANKE. Governor Warsh.

MR. WARSH. Thank you, Mr. Chairman. On a couple of the ideas that are being discussed with respect to excess reserve balances, the GSEs—either in Chris's context as potential additional counterparties or in your context, Jamie—could be useful here. What if the status of the GSEs changed during the period in which we need to conduct these operations? I think in all likelihood the GSEs will be in the same muddled mess they are in now, and the Congress and the Administration will leave them as they are in effective conservatorship forever. But what happens if in fact that is wrong and the GSEs end up finding themselves either more or less wards of the state with a different mission and capital structure? Does the prospect of the change in that potentially limit our options—again, depending on when this period of draining excess reserves comes into being?

MR. MCANDREWS. You are looking at me, but I will turn to Chris as well. I think that, with regard to the balances of the GSEs, what is important is that all of these payments on

mortgages funnel into the GSEs. So my first answer to your question is that I don't think that part would change for the GSEs regardless of their overall regulatory environment.

MR. BURKE. I guess a piece of it is going to have to do with their liquidity position. In talking to them, I think they are feeling that they are being forced to hold more liquidity than they would have chosen to hold on their own. So as their future status changes, if they are required to hold more liquidity, then they might be selling more into these markets, and then these solutions would become more important. Or if their liquidity requirements were to decrease, then they become a bit less of an issue.

MR. CARPENTER. I think one extra point, because you did note accurately the role that the GSEs played in a lot of the discussion, we are still working out precisely whether it is the aggregate quantity of reserves all by itself that matters or if there is an extra effect of the GSEs selling into the market. Chris noted the quantity of fed funds sales that the GSEs did, and so did Jamie. Relative to the \$750 billion of excess right now, it doesn't seem as though it is that huge a portion. So there is definitely an argument to be made that we might be focusing too much attention on them utterly and completely idiosyncratically when it is a larger issue in terms of just the sheer quantity. I think all of these issues that Chris and Jamie brought up have to be seen through that filter as well.

MR. BURKE. Our main tool for measuring the fed funds rate is the "fed funds effective," which is looking at just that subset of fed funds transactions that are brokered. And in that market, the GSEs dominate. They are 80-plus percent of those transactions. So when you start talking about doing something to those transactions, that is the backdrop to my statement that, if you remove those, you leave a small and potentially idiosyncratic market from which you are then calculating an effective fed funds rate. So, to Seth's point, a \$75 billion program

targeted at them is not much with a backdrop of \$700 billion or \$1.4 trillion in excess, but it may be that their role and where they are trading and the visibility of their trades imply another transmission mechanism affecting just them. That is one of the things that we are trying to puzzle out.

CHAIRMAN BERNANKE. Given these idiosyncrasies in the federal funds market, even though we might be operating in the overnight market, we may have to consider alternative ways of expressing our policy target. That should be something we should keep on the table.

President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. My question is for Chris, and my question is this: Potentially we are going to be doing reverse repos both in large magnitudes and for extended periods of time. Do you have any concern with having only two clearing banks that are central to that role? And are there ways that we can either increase the competition or spread out the number of entities that can help with that infrastructure?

MR. BURKE. We have been working with our payment systems folks in New York, who have been working on identifying the issues with the triparty platform and working on alternatives to the triparty platform, which is, as you noted, based on those two institutions. As we know with Bear and Lehman and the outcomes there, there are clearly issues with that system. So, yes, we are somewhat concerned. And I think, with the PDCF sunset date coming and the role that it is playing in backstopping triparty, clearly some issues are there. A number of ideas have floated around. Some are less difficult to implement than others, but we are going to follow along with that work and, I hope, piggyback on that.

We have started to think a bit about alternatives. The scale of our program is such that it is going to carry a lot of weight whatever we do, so we are being quite cautious. But depending

on who our counterparties end up being, it is entirely possible that we could create our own sort of mini triparty with another clearing bank, say a State Street or something along those lines. There are an awful lot of issues with that. For that piece of the program, we would end up with a single clearing bank that was working on it. So it is absolutely an issue, it is a concern, and we are concerned about it, but we will continue to follow the progress of other groups.

VICE CHAIRMAN DUDLEY. If I can just interject very briefly.

CHAIRMAN BERNANKE. Vice Chair.

VICE CHAIRMAN DUDLEY. The triparty repo is probably going to be changed very substantially, and so I think that the clearing bank issue will be resolved in the context of that adjustment. It won't be the separate issue in terms of how we are doing the reserve management. Triparty repo has to be altered, irrespective of the excess reserves issue.

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. I have a question about both the TALF piece and the tools. First of all, I very much support the Board's views to suspend work on RMBS and expanding the range of assets we include in that. It probably comes as no surprise to most people. I think that is the right thing to do. The Board's staff actually gave a pretty good, compelling case from my perspective of why that is a risky and maybe not a wise thing to do.

With regard to the CMBS extension, I have two questions. One is that, no matter when we choose to end it, if the view is that there are always six months of planning that go into it, when are we going to decide to actually stop it? Part of that has to do with the question of what we mean by "unusual and exigent" circumstances and when that will come into play. So we won't get four months from June 30 and we won't say, well, we need another six months to keep it going. I think we need to clarify a little for ourselves what the criteria are that we're going to

use to choose to say “no more” and when we’re going to stop it. It also raises the question for me, given the long planning time, about some of the rationale for these programs and the 13(3) lending, in particular. It is unusual and exigent circumstances, but it has been things that had to be done immediately. Given the long planning periods for CMBS and other types of lending—the Congress certainly was willing to do “cash for clunkers” and supply a lot of money to subsidize the automobile companies and the automobile industry— and given the unusual nature of the challenges in the commercial real estate market, oughtn’t this be a program for the Treasury rather than a short-term liquidity program for the commercial real estate market? That is just an open question. How do we determine when the right time is going to be, and when is the six-month lead period going to be enough on the TALF?

On the tools, in listening to the discussion, I was struck that for the reverse repos the volumes, at least relative to the size of our balance sheet, are pretty small. And I, like everybody else, hope that interest on reserves works, that it is enough, and that we do not have to do a lot of this extra stuff. But we need plans A’ and B to make sure that we can deliver on the policies that we want. So given the volumes that we would have to do, if the task really came to shrinking the balance sheet in order to be able to do this, are these tools enough to keep the interest rates where we want?

I guess that raises the question for me, which is sort of the last stop, about actually selling assets. We did have a discussion—I think it was at the last meeting—in which we talked about income implications of selling assets and interest rates. It seems to me, when we talk about reviewing these tools and mechanisms for hitting our targets in managing reserves, that understanding both the consequences and the mechanisms by which we would actually sell assets if the time came to do so need to be in our hip pocket. I guess my request is that, in the

process of reviewing these reserve management tools, we include the selling-assets piece as a way of better understanding what the consequences might be if the world came to that's what we had to do. That's all.

CHAIRMAN BERNANKE. Buying and selling we know how to do. [Laughter]

MR. PLOSSER. Buying and selling we know how to do.

MR. BURKE. Should I comment on the scale question?

CHAIRMAN BERNANKE. Yes.

MR. BURKE. There are clearly scale issues. The entire size of the triparty repo market for collateral eligible for open market operations is not much more than \$1 trillion. So clearly, if we get into a market and start trying to double its size, there are going to be issues. We are starting work now on how these tools might fit together. One assumption may be that reverse repos would be one of a set of tools that we would use to achieve our objective. As you note, it doesn't seem likely that we'd be able to find a market to successfully reverse out \$1.4 trillion in assets.

MR. PLOSSER. On a continuing basis.

MR. BURKE. On a continuing basis. Notwithstanding that, we will have over \$2 trillion on our own balance sheet. But an interesting side effect of our doing this amount of repo is that we know the repo and the fed funds rates are very interconnected and that pressures in one flow over into the other. So the transmission mechanism may actually be that, as we do these reverse repos and we drive up GC rates, that the increase in GC rates flows through and starts affecting other rates. So it may be with this tool that you do not necessarily need to drain all of the excess out of the system before you start affecting short-term rates in general. That is another aspect of this that we will be working on.

MR. PLOSSER. Thank you.

MR. NELSON. With respect to the TALF, the criterion that we applied in thinking about the problem was that it should be appropriate for emergency lending to take place throughout the future period that the staff recommends that the facility stay open. So in particular for CMBS, we thought that there was a reasonably high likelihood that the situation would remain unusual and exigent through June 30, 2010. In addition, we required that it would be helpful to be open. Also, even if these criteria were met, if you could wait to announce, then it would be desirable to delay because your perspective on whether it is going to be unusual and exigent in the future will become more accurate as time passes. But as I explained, there is a benefit to announcing now so that people can begin at this time to arrange these deals. That said, as I noted, if the situation is not unusual and exigent at any point between now and then, it would still be necessary to close the facility down at that time regardless of the deadline.

CHAIRMAN BERNANKE. President Evans.

MR. EVANS. Thank you, Mr. Chairman. A quick question. Brian, in your charts it says that the TALF is projected to go to \$155 billion by the end of next year. Does that include this extension? That's a projection with whatever we are expecting would come from this?

MR. SACK. Yes. When we did the balance sheet projections, we assumed the extensions that Bill talked about.

MR. EVANS. Okay. Thank you.

CHAIRMAN BERNANKE. President Fisher.

MR. FISHER. Thank you, Mr. Chairman. Just to clarify your statement in terms of the Board's decision suspending consideration of additional asset classes, I want to follow up on a

point you just made, Bill. We are talking only in terms of high-grade CMBS, is that correct?

We are not going to extend that category to lower-grade CMBS?

MR. NELSON. That is right. There is no expectation that there will be a change in the types of CMBS that we would lend against.

MR. FISHER. Thank you.

CHAIRMAN BERNANKE. Okay. Thanks. President Lacker.

MR. LACKER. About scale, I was wondering, the thought that occurs to me is that surely it is sort of endogenous. It is a matter of price. If we pay them enough, they will increase their capacity. I mean, is that reasonable intuition?

MR. BURKE. I think it is a reasonable intuition. The discussions with the dealers suggest that there is a limit to the size of their balance sheet “regardless of price.” That will be something to test, I suspect. [Laughter]

CHAIRMAN BERNANKE. A vertical supply curve.

MR. LACKER. And just a question for Jamie McAndrews. Chris Burke said that 80 percent of the funds market is GSEs to banks?

MR. MCANDREWS. Brokered.

MR. LACKER. Brokered, right. That suggests that typically GSEs lend to a lot of banks. How many typical counterparties does a GSE have in the fed funds lending market? How small are the numbers? How limited is competition?

MR. MCANDREWS. I don’t have the figures in front of me. It is in the dozens, and they lend very similar amounts. We have looked at some of the activity. It is very regular activity. They don’t seem to lend to that many for a period of time. They apparently have lines of credit with several, but they choose to lend fairly repeatedly to individual participants.

MR. LACKER. So you are essentially claiming there is an oligopsony consisting of dozens of U.S. banks.

MR. MCANDREWS. I am saying that we are far from perfect competition. That is a market with search frictions and dominated by counterparty credit risk. And it is likely that these impede pure rate-based competition that we would see if we alleviated the need to engage in counterparty credit risk—a screening. They could widen the net of potential counterparties to hundreds and thousands if they were alleviated from counterparty credit risk if these collateralized fed funds trades were available to them. The issue is, How can we get competition so that in the interest rate on reserves that the Fed is paying to banks is a floor for society more generally?

MR. CARPENTER. Just to reduce the incredulity a bit about the market power, one of the main factors of the non-collateralized market is that risk mitigants include just line limits. All of the market participants know that the GSEs have limits on their counterparties, and they also know that on many days, if you were to add up the line limits across all their counterparties, that would be less than the aggregate amount they are going to want to sell into the market. In that sense, each individual counterparty has a line limit. They know that the GSEs are going to use up their line limits, and that is where the market power comes in because the aggregate amount that they would like to sell is greater than the sum of the individual line limits to counterparties. And the “dozens” is closer to two dozen, not three, four, or five dozen.

MR. MCANDREWS. What Seth is explaining is very similar to the California energy market, where only one among dozens of generators would have to go out of service in order for maximum capacity to be used for all other generators.

MR. LACKER. I guess the deeper question I have about this is—again, it seems clever, to echo Governor Kohn—that it seems like a lot of work for a few basis points. We have lived for years tightly targeting the fed funds rate but tolerating the RP rate 10 or 15 basis points on either side of the fed funds rate. And we have never had a solid conviction that it was one and not the other that was relevant for the constellation of rates. Or even look at, I don't know, one-month T-bill rates, right? So tolerating 15 basis points seems in the grand scheme of things to be something we are willing to do.

MR. MADIGAN. A question, President Lacker, is whether it would persist at just 15 basis points, 10 basis points, or so as the level of rates goes up. And we just don't know that.

MR. LACKER. That is a serious question.

CHAIRMAN BERNANKE. Vice Chairman.

VICE CHAIRMAN DUDLEY. I have a question about the brokered fed funds market versus the other. It seems as though we are a bit captured by the brokered fed funds market because that is where we have the rate information. But couldn't we actually get the rate information on the bank-to-bank funds market if we really made an effort and because we regulate these entities? [Laughter] And if that were the case, we might not want to have the brokered funds market be the dominant element driving our decisions. It is just an observation question.

MR. MCANDREWS. We gathered that information today with error, and I think we can improve it if we work with the banks. It is with some delay, so the brokers are real time, which is a benefit.

MR. BURKE. But in principle you could establish a collection scheme by which you get directly from the banks at the close of business each day the average rate and volume of business that they have done and then aggregate it and get a more complete picture of fed funds rates.

VICE CHAIRMAN DUDLEY. Then you don't have to worry about the GSEs contaminating your observations of the brokered funds market. You know, a lot of this is an effort to take the GSEs and the fact that they are contaminating that market. There might be an easier way to ignore that market and go to the broader market.

MR. BURKE. Until very recently, all of our evidence suggested that the brokered fed funds market was just a good and representative subset of the overall market. Clearly, we are under the impression that that has changed.

VICE CHAIRMAN DUDLEY. Yes, not so much anymore.

MR. BURKE. Right.

CHAIRMAN BERNANKE. Once again, there is a lot of benefit to trying to figure out what is the right target and what is the most meaningful target for policy. Are there more questions or comments on this range of issues that anyone would like to bring up? We will of course have two more go-rounds. If not, we have a vote to ratify domestic open market operations.

MR. KOHN. So move.

CHAIRMAN BERNANKE. Without objection. Okay. Why don't we take a coffee break? We have coffee available. Return at 4:15. Thank you.

[Coffee break]

CHAIRMAN BERNANKE. Okay. Why don't we recommence and turn to the economic situation. Presentation is by Larry Slifman and Nathan Sheets. Larry.

MR. SLIFMAN. Thank you, Mr. Chairman. If I may paraphrase Garrison Keillor, it's been a relatively quiet few weeks for macro forecasters. For the most part, the high-frequency data on activity that we have received since the June FOMC meeting have come in either in line with our expectations or a bit better, and the numbers continue to remain consistent with the hypothesis that economic activity is stabilizing. At the same time, as Brian has already described, financial conditions have continued to improve.

Before I discuss some of the details of the forecast, let me briefly cover two other matters: last Friday's labor market report and the comprehensive revision to the national income and product accounts. First, regarding the labor market, the BLS reported that private nonfarm payroll employment fell 254,000 in July, and the declines in May and June are now estimated to have been a little smaller than previously thought. The net result is that the level of private employment in July was about 85,000 higher than we were expecting when we published the Greenbook. In addition, the unemployment rate ticked down to 9.4 percent—we had been expecting a small increase. Although we would not be inclined to make any changes to our GDP projection as a result of this more favorable labor market news, it does help reinforce our view that a gradual turnaround in economic activity will begin in the second half of the year.

As regards the NIPA revision, I would emphasize two elements. First, as you know, real GDP was revised down considerably in 2008 and the first quarter of 2009. This downward revision reduced some of the tension between our estimates of the output gap and the unemployment rate gap but did not eliminate it. During the next several weeks, we plan to reassess all of our supply-side estimates, but at this point we don't anticipate any major changes. The second important element of the NIPA revision was a sequence of sizable downward revisions to real disposable personal income beginning in early 2007. The cumulative effect of the revisions was to put DPI on a significantly weaker trajectory through the middle of 2009, which was an important ingredient in our thinking about the outlook for consumer spending.

One other data revision, which we learned with the release of the June figures for personal income and outlays, was a downward revision to personal consumption expenditures in the first half of 2009. Prior to the revision, it appeared that consumer spending was edging higher during the first half of the year. However, the new data, instead, now show consumption to have been drifting down over much of the period. Nevertheless, we still expect a gradual turnaround in consumer spending in the second half of the year—based in part on a further boost from fiscal stimulus as well as less-pronounced employment declines and improving financial conditions.

Outside the consumer sector, the latest readings on housing starts and orders for capital goods point to a lessening in the declines for residential construction and equipment spending. Moreover, with final demand stabilizing and inventory positions considerably improved from earlier in the year, we think that over the next several months firms will slowly begin to move production back up toward the level

of sales. Indeed, a number of indicators of near-term movements in factory output—such as weekly steel production, durable goods orders, and various business surveys—suggest that such an adjustment may already be in process.

For next year, we continue to expect the growth rate of real GDP to pick up. Importantly, continued financial healing, supported by accommodative monetary policy, sets the stage for further improvements in household and business sentiment and an acceleration in final demand. All told, real GDP is projected to rise about 3 percent over the four quarters of 2010, close to the projection in the June Greenbook. Nevertheless, the rate of increase in GDP next year—while still faster than the rise in potential—is relatively tepid for an economic recovery, only enough to reduce the unemployment rate to 9½ percent.

Our forecast reflects a balancing of a number of forces. A negative factor was the lower trajectory for disposable income that I previously mentioned; given the typical lags between income and spending, this acts as a drag on consumption in coming quarters. On the plus side of the ledger, as Brian noted earlier, equity prices are up appreciably since the last Greenbook, whereas corporate bond yields and spreads are down. In addition, as Nathan will discuss, the foreign exchange value of the dollar is down, and the forecast for foreign growth is stronger.

As for the components of real GDP next year, the basic stories haven't changed in any important ways. In the household sector, we expect consumer spending to strengthen and the saving rate to drift down a bit as prospects for jobs and incomes brighten, negative wealth effects wane, and the availability of consumer credit improves. Meanwhile, housing demand and construction, which appear to have reached their bottoms this summer, are expected to strengthen as income picks up and low mortgage rates and lower real estate prices enhance affordability. In the business sector, we think that the usual accelerator mechanism should spur outlays for equipment and software, augmented by some easing of financial constraints and by some extra demand as a result of replacement spending that had been deferred during the recession. In contrast, business outlays for structures such as office and commercial buildings are expected to continue to contract throughout 2010 in the presence of extremely tight credit conditions and falling property values.

Turning to the outlook for inflation, the NIPA revision incorporated new information on nonmarket prices, which now show a sharp deceleration in the first half of the year. But we don't take any signal from this; and when all is said and done, it looks as though the underlying pace of core inflation has been running a little higher than we had anticipated. In addition, survey-based measures of longer-run inflation expectations have remained relatively stable. In contrast, the incoming data on hourly compensation have decelerated sharply this year. The employment cost index increased at an annual rate of only ¾ percent in the first half of 2009, whereas the Labor Department reported this morning that the productivity and cost measure of hourly compensation declined at a rate of about 1 percent. These low readings suggest that economic slack already is weighing heavily on labor costs. We continue

to expect that the low level of resource utilization will hold down price inflation as well over the projection period, with core PCE prices rising about 1½ percent this year and 1 percent next year.

In the Greenbook, we highlighted several risks to our output and inflation forecasts. On the downside for output, we noted the possibility that the improvement in financial conditions observed since the spring could prove to be short-lived and the financial system could suffer a relapse rather than recuperate. We also highlighted the possibility that, in the wake of the financial and economic turmoil of the past two years, households could raise by a significant amount their desired saving relative to the baseline. According to the policy rule we use, either outcome would noticeably delay the eventual liftoff of the funds rate from the zero lower bound. That said, we also recognize the possibility that financial healing could occur more rapidly than we anticipate. Such a development would lead to a more robust recovery of economic activity and less unemployment. Under those circumstances, the federal funds rate lifts off from zero a year earlier than in the baseline.

The funds rate also would be expected to lift off sooner under our assumed policy rule if the inflation outlook were to take a decisive turn upward. This might occur, for example, if the public's concerns about the expansion of our balance sheet were to manifest themselves in an appreciable increase in inflation expectations. We examined this possibility in an alternative Greenbook scenario in which we assumed that long-run inflation expectations rise about 1 percentage point over the next several months. In that scenario, core PCE inflation climbs steadily over the projection period, reaching 2½ percent by 2013. That development in turn brings forward the liftoff in the federal funds rate by three quarters.

So, what does this all mean? Well, while it's been a quiet few weeks for macro forecasters, the risks to the economic outlook are still all above average. Nathan will now continue our presentation.

MR. SHEETS. Since the June FOMC meeting, some encouraging signs have emerged in the foreign economies. We now estimate that average growth abroad edged positive last quarter, and we expect that it will rise to above 2½ percent in the second half of this year and to 3¼ percent next year. Relative to our June forecast, these projections are up 1 percentage point in the second half of the year and ¼ percentage point in 2010. Given the remarkable depth of the recent downturn, we continue to characterize the projected recovery as sluggish but not quite as sluggish as we previously envisioned. We also note that progress has been uneven across the regions of the global economy. Asia has seen a blockbuster rebound, while in many advanced economies and Latin America the declines in activity have continued, although at a much reduced pace.

In emerging Asia, Chinese GDP soared at an estimated 18½ percent annual rate in the second quarter, driven by fiscal stimulus measures and accelerated bank lending. Strikingly, the increase in bank credit over the first six months of the year was equal

to 25 percent of China's annual GDP. These hefty stimulus measures successfully lifted domestic demand, with both investment and consumption moving up sharply. Chinese imports have also risen significantly of late, creating positive spillovers for other countries in the region. Boosted by Chinese demand but also by their own stimulative macro policies, domestic demand in several emerging Asian economies has revived of late, including in Korea, where second-quarter GDP moved up at a 10 percent pace. All told, we judge that emerging-Asia GDP expanded at a 12½ percent annual rate in the second quarter. Going forward, we expect economic growth in the region to moderate to around 6 percent through the second half of this year and in 2010. However, there are risks to this outlook. The apparent intention of the Chinese authorities is to leave stimulative policies largely in place until external demand recovers. The problem is that the available policy tools are mainly administrative in nature and difficult to calibrate. If the present stimulus is removed too abruptly, we could see a hard landing in the region. And if the stimulus is left in place too long, the result could be an upsurge of bad loans, other financial imbalances, or overheating economies. How this will all play out strikes us as very much an open issue.

Demand from emerging Asia appears to have resuscitated the Japanese economy. A rebound in exports and production fueled an estimated 4 percent rise in Japanese GDP during the second quarter, following two double-digit quarterly declines. Going forward, continued demand from emerging Asia and the gradual strengthening of global activity more generally should allow the export-dependent Japanese economy to grow at a rate of 2 to 3 percent through the forecast period.

For the advanced foreign economies other than Japan, the pace of decline in the second quarter appears to have let up some, but GDP by our reckoning still fell at an annual rate of nearly 3 percent. Here too, however, recent signs have been hopeful: Exports have halted their downward slide; confidence and activity surveys have rebounded; and equity prices have continued to move up. Given these developments, along with ongoing policy stimulus, we see growth in these economies edging back into positive territory in the second half of this year and to 2¼ percent in 2010. This gradual recovery is likely to be constrained by persisting financial headwinds—particularly related to the still-fragile condition of major financial institutions in many of these countries—and by further deterioration in labor market conditions. The possibility that these factors may be more adverse than we now expect represents a notable downside risk to the outlook.

The spot price of WTI oil is currently around \$70 per barrel, essentially unchanged from the time of your last meeting. Although the stronger-than-expected rebound in emerging Asia likely points to a firmer path of oil demand going forward, oil inventory levels have increased further in recent weeks, and oil production in Russia and several OPEC countries appears to be edging up.

Concerns about the extent and timing of recovery have remained the primary focus of policymakers in the foreign economies. Since your last meeting, major

foreign central banks have largely extended their policy measures. The European Central Bank in late June auctioned a mammoth €442 billion of one-year term funding at its main refinancing rate, pushing overnight market interest rates down to about 35 basis points. Additional one-year auctions are scheduled for September and December, but the ECB has indicated that these auctions may be at an interest rate above the main refinancing rate. In July, the Bank of Canada reiterated its conditional commitment to keep its policy rate at 25 basis points until the end of the second quarter of 2010. Finally, the Bank of England surprised markets last week when it announced that it was expanding the size of its asset-purchase facility by £50 billion. The BOE plans to acquire the additional securities over the next three months, which suggests a slowing in the pace of its monthly purchases from about £25 billion to £17 billion. We see major central banks leaving policy rates at their current low levels through the end of next year. Given the gradual projected pace of recovery in these countries and our expectation that headline CPI inflation will remain muted, foreign central banks are likely to have ample room for maneuver in unwinding policy stimulus.

The somewhat better global outlook and a resulting increase in investor risk appetite have led to a further 1½ percent decline in the dollar, as Brian Sack has indicated. Notably, the dollar is now near the center of its trading range over the past 18 months, down about 10 percent since its peak in early March but also up nearly 10 percent from the lows recorded during the first half of last year. Going forward, we project that the dollar will remain on a modest downward trajectory, depreciating at an annual rate of about 2 percent, reflecting ongoing financing pressures associated with the current account deficit.

Consistent with news around the globe, we are also seeing signs that U.S. trade may be bottoming out. Although real exports on average appear to have declined further in the second quarter, recent monthly data are now pointing to a rebound. In line with these signals, we expect exports to bounce back at a 7¼ percent pace in the second half of the year and to expand 5¼ percent in 2010. Prompted by the weaker dollar and the upward revision to foreign activity, we have marked up export growth 4 percentage points in the second half of this year and 1¼ percentage points next year. Similarly, we see imports expanding at a pace of roughly 7 percent in the second half (boosted in part by a recovery in automotive imports) and nearly 5 percent next year (supported by the recovery in U.S. demand). Taken together, net exports are expected to subtract about 0.1 percentage point from U.S. GDP growth on average over the forecast period, somewhat less negative than in our June forecast.

The following point bears emphasis, however. Both imports and exports fell sharply during the recent recession. The level of real imports in the second quarter is estimated to be 20 percent below the previous peak, and the level of real exports is down 15 percent. While our forecast does incorporate some additional cyclical rebound, over and above what our models would suggest, there is a risk that imports, exports, or both could bounce back much more vigorously than we have written down, with potentially sizable implications for the contribution from net exports to

U.S. GDP growth. That concludes our presentation, and we are happy to take your questions.

CHAIRMAN BERNANKE. Thank you. Are there questions for our colleagues?

President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. A question for Nathan. You know, the Chinese economy is increasingly a central focus as we evaluate the global economy. And you referenced the bank lending in the last quarter, which appeared to be directed lending, top down, telling them to lend. Some years ago there was continuing concern about the banking system in China being insolvent. They seem to have muddled through that, but do we know anything about the potential of a banking crisis in China that could have been exacerbated by this directed lending?

MR. SHEETS. My sense is that there are some significant risks to the banking system associated with this extraordinarily rapid rise in bank credit that we have seen over the last six months. Now, a good chunk of that lending was associated with the fiscal stimulus program, and so in some sense it is at least being implicitly guaranteed by the government. Another piece of it seems to be related to lending to regional and provincial governments. So, again, there is something of a public guarantee. But I think, even over and above what we can link even loosely to the fiscal stimulus, there was a substantial quantity of lending that happened. I personally find it difficult to believe that that much credit could be allocated as quickly as we saw in the first half of the year and for it all to be perfectly efficiently allocated. So my instinct here is that at some point we will see some bad loans emerge. I think that is a risk. I think there is also ample room to question how effective and efficient the Chinese banks are. On the other hand, you have the Chinese government, which has ample resources. So my sense is that, yes, at some point down the road we are going to see some financial aftermath of what has happened over the last

six months. But my sense is also that the Chinese authorities have resources to be able to recapitalize and address and resolve these problems in their banking sector without its necessarily being a first-order issue for the Chinese economy or more broadly for the global economy.

CHAIRMAN BERNANKE. President Stern.

MR. STERN. Yes, thank you. Larry, I was struck by the decline in the productivity and cost measure of compensation in the first half. Is there something special going on there? Or should we conclude that compensation is less sticky than we might have earlier thought? If so, what are the implications, if any, for employment going forward?

MR. SLIFMAN. We don't know for sure, but our speculation is that some of this had to do with bonus payments—that there are just a lot fewer bonus payments being made now than had been made in 2008, 2007, and so on. So we think that that might have been part of what is going on; that is, taking the bonuses out lowers the level of compensation. But the broader point is that we think that labor market slack is having an effect on wage determination; probably there is less nominal wage stickiness in the economy than there was 20 or 30 years ago. And as I said, with the unemployment rate up in the 9½ percent range, that is putting a lot of downward pressure on wage determination.

MR. STERN. There certainly have been a lot of anecdotes about voluntary cuts in wages and salaries to preserve employment.

MR. SLIFMAN. Absolutely. So while we have not built in further outright declines in hourly compensation in the forecast, we do have very slow rates of increase in hourly compensation in the forecast.

CHAIRMAN BERNANKE. President Bullard.

MR. BULLARD. Larry, a year ago or more, we talked some about regime-switching models, where when we entered recession some of the relationships are different, coefficients are different, and so on. Now it appears that we might be exiting the recession. Would we switch back to some sort of more normal times model, or is this all by the bye here?

MR. SLIFMAN. In a mechanical sense, the way we have implemented this in the forecast for much of 2008–09 is to take what our models would want to forecast and then put in negative add factors to take account of the financial turmoil as well as a regime switching that you would get in a normal recession. In 2010, we are not getting rid of them, but we are diminishing the size of those negative add factors as we think the financial system recuperates and as we move out of recession and into a recovery period. But that said, it is important to keep in mind that this recovery is still quite tepid by historical standards. Typically, the economy goes back to its previous peak level of real GDP in two to three quarters. In our projection, it takes seven quarters for that to occur; so these things are still, in our view, weighing heavily on the economy.

CHAIRMAN BERNANKE. President Fisher.

MR. FISHER. Thank you, Mr. Chairman. I would like to ask a question of Nathan. At our last meeting and in previous meetings in talking about China, the issue was whether or not they might be able to convert their economy to be more domestic demand driven. Clearly, the stimulus package, in addition to leaking into the securities markets and all of the corruption that has ensued, has affected infrastructure, and that is where I think you see some of this boom coming in the rest of Asia. For what it is worth, my Chinese contacts and the ones in Singapore suggest that there still is a long-term dependency on U.S. and European demand, to the point that they assert that this boom or boomlet might go on for another two years or so. But unless we

pick up demand and unless Europe picks up demand, it is unlikely to continue. I wonder if that is an assessment that you might share.

MR. SHEETS. I think it is very much the intention of the Chinese authorities to continue these policies until they see the pickup in external demand. Governor Tarullo used the analogy at the last meeting of the Chinese being in a holding pattern, waiting for the global economy to pick up, and I think that is exactly the right analogy. I guess what I am wondering and what I am questioning is whether they can calibrate this stimulus, particularly the awesome monetary stimulus, in such a way that they are able to build a bridge from where they are to the time when global demand picks up and whether there might not be some significant imbalances that manifest themselves between now and that point in time.

One way to articulate this concern very concretely is that I very much doubt that six months ago the Chinese authorities came to the conclusion that in the second quarter of the year they wanted to put in stimulus such that the economy would expand at an 18½ percent annual rate. The fact that they got this outcome really emphasizes the blunt nature of the policy tools they have. If they overshoot in the second quarter, I see that there is a risk they may further overshoot on the upside or significantly undershoot on the downside.

So I just don't fully see what the exit strategy is. Earlier this decade, people were very concerned about a hard landing in China, and they were able to thread the needle. Maybe they will be able to do that again. In fact, for what it is worth, that is what our forecast has written down as a baseline against which to talk about these risks. So there is a chance that they will be able to grow at 9 percent on average for the next six quarters or the next couple of years. But I for one am very concerned. I see this rebound in China as really being the key driver of a lot of what we have seen in the global economy, certainly in emerging Asia and Japan and even echoes

of it in certain places in Europe, such as Germany, where exports are picking up. So if the pace of Chinese recovery steps down, we are looking at a much softer global outlook than we are with a stronger China or a Chinese growth path similar to what we have in the forecast.

MR. FISHER. Thank you.

CHAIRMAN BERNANKE. I agree with the idea that they are looking to Europe and the United States. But in the latest strategic and economic dialogue that we had with the Chinese—Governor Warsh was there as well—I heard much more seriousness about a longer-term transition to a more domestically driven economy. What time frame that has and how that bears on the current situation is a different question, and I heard much more talk about that and a much more detailed discussion of that.

MR. SHEETS. Consistent with that, to their credit, through this period of softness and external demand, instead of trying to depreciate the exchange rate, they have depended on domestic demand and fiscal stimulus, and they are trying to do it themselves. So I would say that is a step in the right direction. But then the question is, How committed are they, and at what pace are they willing to pursue the deeper structural reforms that are going to be necessary to support private spending and private consumption in China, such as developing financial markets and social safety nets and that sort of thing?

CHAIRMAN BERNANKE. Other questions? Seeing none, we are ready for our economic go-round. President Evans.

MR. EVANS. Thank you, Mr. Chairman. The incoming data have been encouraging though a bit bumpy. On balance, although the developments over the past several weeks left my medium-term outlook essentially unchanged, they did give me more confidence. In my view, this reduced uncertainty strengthens the case for a wait-and-see approach to policy. The reports

from my directors and business contacts support the improving tenor of recent data releases. Business activity is plausibly stabilizing, albeit at very low levels; and in some sectors where the contractions have been on a horrific scale, we have even seen a bit of a bounceback.

Most of these turnaround cases are in auto-related manufacturing. Arcelor-Mittal Steel is following through on my earlier report of increasing its online capacity this summer. This reflects both an auto-related rebound in production and the completion of an inventory-adjustment cycle at steel service centers. Accordingly, steel prices have moved up off very low levels. And a large-scale manufacturer of relatively small auto parts said that his order flow has picked up and that the new rate is consistent with the higher level of production currently scheduled by the OEMs (original equipment manufacturers) for the third quarter. I spoke with Ford about the effect of the cash-for-clunkers program. They had an interesting story about which future sales were being stolen by the program. A substantial segment of the clunker trade-ins have been well-maintained SUVs that are about ten years old and whose owners have good FICO scores, above 650. This leads Ford to think that, without the program, these people would have driven their clunkers for another couple of years. So perhaps we are stealing sales from 2010 or beyond, not just the fourth quarter. But GM suggested that the payback would be sooner. Also, any uncertain extensions of this program could freeze potential buyers, and so they seem to indicate that it was very important to have a certain date to this program to fix everybody's attention. Nevertheless, both Ford and GM suggested that there would be a small upward adjustment to their current third-quarter plans and then further output increases in the fourth, and apparently Chrysler news reports are similar to this.

Moving to broader economy-wide conditions, labor markets seem to be stabilizing. Obviously, last month's pause in the unemployment rate's inevitable continued rise is a welcome

sign that moderating forces may be gaining some traction. But labor markets are still weak, and the predominant view among my business contacts is that companies' current plans are to strongly resist rehiring many of their laid-off workers when demand eventually does pick up. They would see anything more than minimal rehiring as undoing the difficult and productive labor cost-cutting that they had done during the recession. Now, there are reasons to be skeptical of this talk. They probably say it in every cycle, and they have been very aggressive in cutting employment this time. Still, it does suggest that the unemployment rate could remain stubbornly high well into the recovery stage of this cycle.

With regard to financial conditions, our market contacts say that the extreme tail risks have dissipated and that this is reflected in more-normal spreads and lending relationships. The Chicago Mercantile Exchange reported that market depth in euro, dollar, and Treasury futures has returned to pre-Lehman levels. I did hear that the legacy CMBS TALF has contributed to a dramatic improvement in liquidity in commercial real estate credit markets. Still, the fundamentals underlying commercial real estate markets are poor. A number of my contacts think that many properties are overvalued and that prices are headed for a further fall.

Summing up all of the developments, our near-term outlook for growth is a little more optimistic than the Greenbook's, but our projections for next year are about the same. As I noted earlier, my uncertainty over the economic outlook is a bit less than it was at our last meeting.

I can't say the same about my uncertainty over the inflation forecast, and this is perhaps the most difficult and confusing period we can imagine. Clearly, resource gaps will be an important factor restraining inflation over the immediate projection period and beyond. I hear this rationale for disinflationary pressures from many of my business contacts, particularly with regard to respective labor costs. But many of these very same contacts, and much of the more

general public, can easily visualize potential inflation pressures coming from the enormous current growth in narrow money and huge future fiscal deficits. And measures of inflation expectations have not moved down appreciably with the greater awareness of this coming resource slack. So that is a little surprising to me. Our task as prudent central bankers is to assure them that we will do what it takes to achieve our price stability goals. And yes, everybody is doing that. But I think we are unlikely to see much relief from this educational burden for some time to come. We are going to need to talk about this a lot more before we actually change monetary policy appreciably, I would guess.

Despite the risks on both sides, I continue to have a middle ground inflation forecast. By “middle ground” I mean that I see an uncomfortable balance between these disinflationary forces from large resource slack and inflation expectations that give notable weight to the large growth in our balance sheet and concerns that we may be reluctant to make a timely exit from our programs. This leaves me with a forecast that calls for core PCE inflation to remain near its current 1½ percent pace over the next couple of years. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Mr. Chairman, if I may, before I make my comment, I do want to thank Gary for his service. I have a friend who turned 107 and who died the other day. When he turned 100, [laughter]—he ran Kidder Peabody in 1931—being a great stock picker, he said it would split two for one. Gary, even if you split two for one, you would still have the shortest interventions of anybody at this table and probably the pithiest. You will be seriously missed.

I would like to start out by talking a little about what we see in the data, and then I would like to provide a summary of what I gleaned from my corporate contacts. Then given the

taxonomy that Mr. Wessel has imposed on this table, I am going to conclude with a comment about balls.

First, on the data in terms of our District, we are seeing significantly better signs about stabilization. Our initial claims for unemployment insurance are declining. Our housing industry, which wasn't suffering as much as others, has experienced an uplift. Our single-family permits were up 13 percent year over year in June; existing home sales were up 3½ percent. And other than President Pinalto's District, we had the best Case–Shiller performance, I think from a slightly higher base, in the recent numbers that were reported. As the leading exporting state, we are taking some succor in the data that are coming out. Our exporting activity is getting less bad, but it is still not positive. And from our own calculation of leading indicators at the Dallas Fed, we have seen three months of increase after nine months of decrease. So from the narrow perspective of our District, we are encouraged to see some stabilization.

I think the national picture has been well covered by the presentations that were made, with one exception. We don't quite share your relative pessimism about the bounceback in economic growth. We can expect, over the next few quarters perhaps, a little more aggressive activity. It is really when we deemphasize the negatives and accentuate the positives, as I like to say, and get a boost from inventory investment and government purchase. Nonetheless, both of those will be assuredly temporary. It is what happens after that that we are concerned about. So I would say from the standpoint of my District and from what we are seeing in the data nationally, if you will forgive a bad joke, it is a slightly brighter shade of beige—not tremendously exciting but nonetheless improved from what we saw before.

In terms of CEO contacts—and the Chairman has my list—just to comment, Brian, on your presentation, particularly your slide number 2 with regard to corporate earnings. By my

calculations, so far 443 of the S&P 500 have reported. Of the 419 nonfinancials that reported, revenues—I am not talking about earnings but revenues—are down 19.1 percent versus 4.6 percent for the 24 financials that have reported. This is the third double-digit quarterly decline in sales, and the previous quarter was the second back to back that we have seen since 1965. It seems to me, if I were to summarize the one theme I am hearing from my CEO contacts, that it would be that there is too much of everything relative to demand for the foreseeable future. There are too many ships at sea. And speaking of the Chinese, as you know they are becoming a building power. I talked about this many, many months, if not a couple of years ago, at this table. They expect, according to some shippers I talked to, to deliver up to 40 percent of the existing global fleet in 2010, 2011, and 2012.

There are too many railroad cars. There are 507 miles, Mr. Chairman, of unused mothballed railroad cars now in the United States, 5,280 feet in a mile, and each car is 90 feet long. I will let you do the math. But the point is we are not going to build a railroad car in this country for years. There are too many airplanes; there are too many homes; there are too many hotels, too many office buildings, and too many retail stores and malls. There are 145,000 convenience stores in this country, and the operators of those companies all expect to rationalize significantly.

There is too much oil. And to give you a number that comes from Rex Tillerson, the CEO of Exxon, there are 120 million barrels of floating inventory. That is the highest he can recall in his experience. There are 3 trillion square feet of natural gas on the ground. We have not before, to anybody's knowledge that I have been able to find out, had this high an inventory count this early in the year. And the resource wells and these narrow wells—that is, like the Barnett Shale—have to be counted as reserves as well.

There is too much corn. There is even too much polyester. [Laughter] As Governor Tarullo points out—and he and I watch the same television shows; we were raised on “Saturday Night Live”—there has always been too much polyester. But the Chinese are now bidding down their prices 5 to 6 percent for the fashion year that starts at the end of this year.

So capacity is vast. Cap-ex will remain subdued. As to head count—and the point that President Evans was making earlier about employment—many, many business people I talk with report that they have cut to the bone. But they also report that, not surprisingly, their workforce is much more productive than it was before, perhaps driven by fear of losing their jobs and benefits. They realize that, at least for the immediate term, these business operators can drive their businesses with fewer workers than they had assumed. So most remain in a defensive crouch. Most are focused on cost containment. They are driving their margins, but they are struggling to grow their top line.

I would just conclude with my earlier reference to balls: We seem to have to stay on the balls of our feet because—I am sure you are relieved about that reference—[laughter] as I believe you said earlier, Larry, the risks, like the children of Lake Wobegon, are all above average here. We are eliminating the negative. We are accentuating the positive of inventory replacement, a slight pickup here and there. But it is pretty clear to me, if you will again forgive a terrible pun, that business operators in this country are suffering from post-traumatic slack syndrome. They see it in the abundance of supply. They see it in labor. Their plans to step up to the plate in terms of cap-ex and head count are, it appears to me, constantly being postponed, and therein lies the difficult issue of how we are going to deal with unemployment. So that is my report, Mr. Chairman. Thank you.

CHAIRMAN BERNANKE. Thank you, President Fisher. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. Having exhausted my limited stock of witticisms about coming last in line before the Chairman, I asked Debbie to move me up.

[Laughter] But I also wanted to come a little earlier because, even in the five months since my first FOMC meeting, a lot has changed. At that time, we were contemplating essentially two scenarios, very bad and even worse. In no small part because of the various actions of the Federal Reserve, the financial system and the economy have largely stabilized, albeit at historically lower levels than we would certainly like to see.

It seems very likely now there will be positive, perhaps quite positive, growth in the second half of this year. As for 2010, more upside risk has crept into many people's forecasts. So in thinking about our policies going forward, we may be at a point at which it is useful to consider alternative outcomes in a roughly probabilistic fashion and to test how readily we can craft the narrative that leads to each outcome. It would be a bit quixotic of me to undertake this task for all seven of the Greenbook scenarios to which Larry alluded earlier, so let me distill the manifold possibilities to just three. One, grind it out—a gradual, somewhat halting recovery that leads to 2010 growth somewhere in the vicinity of trend but below what one might expect in a rebound from a severe slump. Two, relapse—a significant stumble for the recovery next year, with GDP growth again dropping significantly below trend. And, three, rejuvenation—a much more robust recovery, with GDP growth significantly exceeding trend, not quite a V-shape perhaps but a reasonably steep slope on the way up.

So just to put my cards on the table, I would assign roughly even odds to the first possible outcome, the grind-out scenario. Not coincidentally, I regard the Greenbook extended baseline to be consistent with this outcome. Although I am somewhat less optimistic about next year than the staff is, I note that their forecast for the second half of this year is pretty conservative. So if

one averages out their forecast over six quarters, it yields something akin to the first outcome. Of the remaining two, I see a somewhat greater chance of relapse than of rejuvenation, though I should say that I now regard the odds of the two alternative outcomes as considerably less skewed than I thought as recently as the June meeting. So clearly I find the story of measured recovery the easiest to tell, in part because the very factors that augur well for the remainder of 2009 may not have sufficient staying power to maintain a healthy pace of recovery through all of next year.

The salutary effects of the fiscal stimulus package will start tapering off in the first part of next year. The undoubted need for firms to replenish their inventories will lead to sustained production increases only if consumption increases can themselves be generated and maintained. The case for a steady increase in personal consumption expenditures is certainly plausible, but it is hardly compelling. According to the reported employment cost index, private wages and salaries have been decelerating. With large and still growing slack in labor markets, there is good reason to believe that personal income will continue to suffer from rising unemployment and suppressed wage gains. Moreover, there remains, as Larry mentioned, the important question of what saving rate we will see once incomes do begin to rise again. The Greenbook makes a reasonable case based on past experience for a 4 percent rate, but the present crisis may contain the seeds of a behavioral shift among some classes of consumers that could move the rate up a percentage point or more.

It appears that even the new normalcy in credit availability, both retail and wholesale, may be some way off. The progress in the corporate bond markets, and to a lesser degree short-term funding markets and plain vanilla securitization markets, has not extended to credit markets more generally. In particular, the rate of decline in bank lending has been accelerating during the

spring and summer. There will doubtless be multiple revisions to the July figures, but the preliminary estimate of a whopping 18 percent decline spread across all forms of lending is a sobering reminder of the difficulties ahead. While a considerable part of this drop is surely attributable to the decline in demand and cautiousness in underwriting that are typical of recessions, it seems likely that there are also structural factors in both bank lending and credit markets, such as capital impairment and business model challenges, that will weigh on credit markets for some time.

I can certainly tell the other two stories—though with less conviction and, in the interest of time, more briefly. A relapse could occur if privately generated demand cannot adequately fill in behind the waning effect of fiscal stimulus, given such factors as the expected persistently high levels of unemployment; the potential for more-rapid efforts to repair personal, corporate, and financial balance sheets; and the severe retrenchment of sub-federal government spending that is coming in the next two budget cycles. If commercial real estate markets turn out to be even moderately worse than currently expected—bad enough—loan losses at many regional and community banks could become truly debilitating.

Rejuvenation might come if both confidence and wealth are significantly boosted by a continuation of the equity market rally and a more rapid recovery of housing markets. The latter of course would also prompt a greater rebound in construction. Along with the effects of pent-up consumer demand for durables and other items, these developments could provide not just a substitute for fiscal stimulus but a boost beyond the temporary effects of cash-for-clunkers, infrastructure investment, and the various income transfer features of the February legislative package. Global economic recovery, particularly in Asia, may proceed more quickly with an attendant boost to U.S. export growth. While I can sketch out this more optimistic path, each of

its elements seems quite a bit less likely than those supporting the more sluggish outcome and modestly less likely than the catalyst for relapse.

I will be interested to hear if some of you can tell this last tale more convincingly. For the present, though, what I think is most important in my little exercise is that the chances of next year being somewhere between tepid and bad appear to me somewhere north of 75 percent in the absence of further monetary or fiscal policy measures. Where exactly along that spectrum the actual outcome falls will probably not become much clearer for some time. If this is a reasonable way of looking at things, our best-advised posture for at least a few more, and maybe more than a few more, meetings may be the somewhat unsatisfactory and awkward one of neither lifting another implement out of our toolbox nor closing the box up and declaring the job finished. Mom was right at least sometimes: Patience really can be a virtue. [Laughter] Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. The data since the last meeting have been broadly consistent with what we expected in our June forecast. We have received confirmation that the economy has improved significantly from the sharp declines in the first quarter. Economic growth in the second half of 2009 is likely to be positive, albeit too slow to prevent further job losses. Our forecast still expects a weak recovery as the balance sheets of consumers, businesses, and banks slowly improve. The improvement is, of course, contingent on no significant adverse shocks appearing over the next year. It also assumes that households and businesses will increase spending, as the stimulus provided by the variety of fiscal and monetary programs subsides—a component of the forecast that remains quite tentative at this point.

That the rate of decline in payroll employment in July was much slower than earlier in the year is welcome news. However, the unemployment rate is quite high and is likely to remain quite elevated for several more years. With many workers on reduced hours and much of the labor force still concerned about their job prospects, workers are accepting much lower growth in wages and benefits. Models run by economists in my research department that estimate inflation as a markup over labor costs, as well as many specifications of traditional Phillips curves used to forecast inflation, imply outcomes closer to the disinflation scenario in the Greenbook. Thus, there is a significant downside risk to the baseline forecast to inflation.

Significant impediments to the recovery, of which I will highlight just two, also remain. Until recently, most complaints by businesses in New England regarding credit availability were from customers of large, out-of-region banks that needed TARP capital. However, there are increasing complaints that small and medium-sized banks are now behaving as if they are capital constrained, despite New England's smaller exposure to the real estate and auto-related problems that plague many other parts of the country. The problem appears particularly acute for commercial real estate. Part 2 of the Greenbook characterizes commercial real estate as dismal. Most of my contacts are using much more colorful language. Problems with commercial real estate look likely to get worse, and many banks' loan loss reserves already lag with the growth in nonperforming loans.

Tight credit conditions are likely to make it difficult for businesses and households to finance spending critical for the recovery. A second potential concern is the unintended consequences of some of the remedies to recent problems. One example is money market mutual funds, which have experienced declines in assets as investors have increased their risk appetite, as Brian highlighted. At the same time, the SEC is considering measures that would

reduce the risk of mutual funds, including potentially prohibiting purchases of asset-backed commercial paper and A2/P2 commercial paper and reducing the weighted average maturity of holdings. While reducing the risk of mutual funds is desirable, if poorly implemented it could disrupt asset markets where mutual funds have been key players. Although I am cautiously optimistic that the recovery is beginning, the situation remains quite fragile. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. The Third District's economy seems to be bouncing along the bottom. Signs of stabilization abound, but evidence of robust activity is lacking in any specific sector. Let me hit just a couple of highlights.

There has been some improvement in the residential real estate market, and a large national homebuilder told me that the pickup might in fact be understated in the data. He indicated that very few offers are now being canceled, and he is actually becoming less willing to negotiate on price and in some markets even beginning to raise prices on homes. This seems to support the national data, which seem to show some firming in house prices nationwide. Further, he indicated that his firm is beginning to purchase raw land for development. On the other hand, non-real estate investment is still declining. Office vacancy rates continue to increase, and nonresidential construction contracts are few and far between outside of government, education, and health care. A number of leaders in small and medium-sized business have told me that they are willing and able to expand in the near term. But the Congress's debates about health care, taxes, deficits, and spending give them great pause, and they are indeed inclined to wait until some resolution has occurred in the Congress. This, in fact, could delay recovery rather than enhance it.

Labor markets continue to deteriorate in our District, although the pace of decline has lessened. One encouraging bit of anecdotal evidence comes from the CEO of a very large temporary employment agency, who told me that both requests and placements have risen substantially in the last couple of months. This seems broadly in line with what seems to be a somewhat less dour employment picture at the national level.

Bankers in our District are reporting deteriorating loan quality, and they are watching their commercial real estate portfolios very carefully. However, a very large national credit card issuer told me last week that new credit card delinquencies—that is, those showing up in 30-day delinquencies—have fallen for 8 consecutive weeks. Although there remain many delinquent accounts that are working their way through the system, this is indeed an encouraging piece of news and may suggest that the financial situation of the consumer may be starting to stabilize.

Our Business Outlook Survey was a tad weaker in July than June—and the August numbers are not in yet—but it was not significantly so. However, the general level of activity and new orders and shipments have all improved substantially since earlier in the year and are well above what were previously characterized as recessionary levels. Manufacturers in our District are not signaling that they plan to increase future hiring or capital expenditures as yet, but they do expect activity to pick up over the next six months. Indeed, our index for economic activity six months ahead remains at a very high level, consistent with early phases of recovery, given historical statistics. So the Third District's economy and outlook is largely in line with the national economy. We are seeing signs that both investment and manufacturing may be stabilizing and, I hope, improving.

I believe that we will see a bit more strength in residential investment than is indicated in the Greenbook projection, and I think inventory investment may become a source of short-term

strength as firms rebuild inventory from what seem to be very low levels. Countering that strength is weakness in nonresidential construction and consumption. Some of the weakness in consumption may wane, though, with the rise in asset prices and abating declines in house prices. And the credit card data I referred to earlier may be an early precursor of that improvement. All in all, I believe that the second half of this year looks a little better to me than it did at our last meeting and perhaps a little better than indicated in the Greenbook; and I expect to see approximately trend growth in 2010. That said, I am cognizant of the economy's fragility.

On the inflation front, my view of the underlying inflation pressures, unlike that of some of my colleagues, is less rosy than that of the staff, although let me stress that my near-term outlook for inflation is benign. But the divergence of the way I think about the inflation process and the underlying methodology for forecasting inflation in FRB/US leads me to see stronger inflationary pressures over the next few years than does the Greenbook. It is interesting that inflation expectations seem well anchored for now, and that's good. At the same time, both survey and financial market measures of inflation expectations are not particularly well aligned with the current Greenbook inflation forecast.

Indeed, one-year-ahead consumer survey measures of inflation expectations have been unusually volatile over the past year, but they have been rising since the beginning of this year and are now at about 3 percent, which is where they were in 2007. This is more than twice the inflation forecast in the current Greenbook. Longer-term survey measures have moved very little, and they, too, remain in the 3 percent range. Longer-term inflation compensation based on TIPS, the staff's over-five-year-forward rates, has actually increased this year. Now, I agree that we need to be very careful in taking signals from the TIPS measures at this point. I think expectations of increased liquidity in TIPS markets and other things can certainly affect that

market. But I don't think we should completely ignore them. Thus, the public and the staff seem somewhat at odds over the likely path of inflation over the next several years, and at this point I am a little closer to the public's view than to the Greenbook's. I think this disparity is reflected in the market's expected funds rate path, which anticipates a funds rate of almost 3 percent by the end of 2011, compared with the Greenbook baseline scenario, where the rate remains at zero.

Now, given my outlook for inflation, my views on appropriate policy conflict with the underlying policy assumptions in the Greenbook as well. Maintaining a funds rate so close to zero for another two years would, I believe, reignite significant inflation. Moreover, given the lags between policy actions and the surfacing of inflation, we will have to act well before inflation pressures become evident. Otherwise, we will be too late, risking both inflation and our credibility.

I have several reasons for this less optimistic view on inflation. As I have discussed at previous meetings, I put a good deal less weight on output gaps as predictors of inflation. As I continue to analyze this concept in more detail—and I really appreciate Michael Kiley's excellent presentation at the last meeting—I remain convinced that the usefulness of output gaps for policy depends very much on the nature of the shocks affecting the economy. In the standard New Keynesian model with the traditional time-series measures of potential output—whether trend or smoothed output measures—the output gap and inflation are negatively correlated with markup in technology shocks. But a monetary policy shock or a demand shock generates positive correlations between output gaps and inflation. Thus, in order for measures of output gaps to give an accurate read on inflation, you need to condition on the underlying disturbances.

This explains in part why the empirical relationship between output gaps and inflation are found to be consistently fairly unstable.

Without a clear explanation of or a buy-in as to what types of shock the forecasters believe are hitting the economy, I grow increasingly reluctant to rely on inflation forecasts based on output gaps. Indeed, the Board staff has estimated sizable output gaps in Canada and Europe over the past year, and yet we have seen very little decline in core inflation rates in these countries. I am happy that we are not seeing deflation, but I do think this should give us pause and we should be very skeptical of the reliability of output gaps for forecasting inflation. As always, I continue to study this issue and will continue to do so because I think the issue will loom large for us in assessing the point in time at which we must reverse course. Thank you very much, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. My outlook for the economy has not changed materially since the last meeting. I think we're in the beginning stages of what is likely to be an exceptionally slow recovery. In the period since the last FOMC, we engaged our contacts in the Sixth District and elsewhere around the country on the questions of slack in the economy, inflationary pressures, the inventory situation, and the state of the real estate sector, particularly commercial real estate.

In residential real estate, we are seeing more stability in sales and prices in our District, even in the Florida markets. The exception to this improved picture is the market for condominiums in large urban areas, which remains burdened by oversupply and very slow sales, due in part to very limited credit availability. The commercial real estate sector is still deteriorating and poses a threat to recovery in its potential drag on the credit system. Our

District contacts reported rising vacancy rates across every significant market and property type, resulting in widespread rent concessions. Financial contacts opined that so far delinquency, default, and valuation problems have been managed through restructuring but pointed out that much of the refinancing calendar is ahead.

The Southeast has a sizable leisure and hospitality industry, which is suffering from a slow tourist season. Even with pervasive rate concessions, hospitality and resort vacancy rates are high. We asked a number of contacts about inventory levels and the direction of inventories. We got the sense that inventory reduction has a bit further to go before firms align their inventories-to-sales prospects. Business contacts at all points along the spectrum from materials manufacturing to retail claim that they are still cutting inventories. Furthermore, based on these conversations, I doubt that inventories will be replenished to pre-recession levels as the economy improves. This projection of businesses running on leaner inventories on an extended basis contributes to my view that the recovery will be exceptionally weak.

In the latest round of calls made in preparation for this meeting, we probed contacts about their perceptions on available production capacity and willingness to rehire in a recovery. We heard that a large share of what is counted as excess production capacity should not be considered standing ready to be brought back into service. Contacts expressed unwillingness to bring previously idled capacity, including permanent hires, back on line without much stronger buyer commitments and better margins. This suggests much less disinflation potential in a slow-growth scenario than would otherwise be the case.

In this cycle, our financial market contacts exhibited much more confidence and described an unwinding of the flight to quality based on the view that a catastrophic scenario has been avoided. These contacts reported that they believe markets in general have confidence and,

more particularly, that the Fed has the tools to engineer an exit strategy as recovery proceeds. A widely held concern, however, is the timing of exit and the risk of a premature exit. In preparation for the meeting, we had a long conference call with several representatives of the American Securitization Forum in an attempt to gauge the rebound of the securitization sector and its ability to support consumer activity. We talked about the TALF earlier today, and they said that the TALF had been successful in bringing back the triple-A segment, but they cited a number of factors that pointed to a protracted period of less securitization. This adds to my view that consumer spending broadly will be constrained over at least the medium term. I think it's plausible that a major shift in household spending appetite is under way. But even if no structural change in consumer behavior is building, consumer credit markets seem to be weighed down by a still-compromised securitization process and constraints on credit card terms and issuance.

My view of the outlook is less optimistic than the Greenbook's baseline scenario. There are elements of the Greenbook's "higher saving rate" and "labor market damage" scenarios in my current thinking about recovery. I see an economy burdened by voluntarily restrained and credit-constrained consumer spending, a still-challenged financial industry that will be slow to expand credit, weak re-employment prospects, and what we believe is lower growth potential during a period of necessary structural adjustments. In light of this expected sluggish pace of recovery, I see the risks to economic growth as still weighted to the downside.

My view of inflation risks is roughly balanced. I do not get a sense that inflationary pressures are on the rise, and I don't see any indication that businesses and households are acting on inflation concerns in any way that would suggest that inflation expectations are currently on the rise. That said, in almost every venue I am hearing strong concerns that inflationary

pressures will develop in the intermediate term as the economy recovers. And to anticipate the policy discussion just a bit, I don't think these concerns warrant an immediate policy response, but they do tell me that our messaging is dealing with challenging crosscurrents and is particularly crucial at this time. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Yellen.

MS. YELLEN. Thank you, Mr. Chairman. Winston Churchill once remarked that nothing in life is so exhilarating as to be shot at without result. [Laughter] Well, exhilaration may be an exaggeration, but I am at least hugely relieved that our financial system appears to have survived a near-death experience. And I am optimistic that you will not be the Chairman who presided over the second Great Depression. [Laughter] Most, though not all, of the recent economic data suggest that the economy is bottoming out and the worst is over. Although the labor market is still struggling, auto sales have rebounded in part because of government rebates, and the bleeding has subsided in the housing market. My directors and advisory council members take the view that the economy looks to have survived a very sharp drop. It is now starting to brush itself off and climb out of the deep hole that it's in.

I expect that the current quarter will mark the end of the recession. Looking ahead, however, I foresee a slow recovery over the next several years with stubbornly high unemployment and very low price inflation, not the sharp rebound that typically follows deep recessions. In particular, I don't think that we can look to consumer spending as a strong engine of recovery. In addition to factors such as continuing job losses, heightened job insecurity, tight credit conditions, and the need to rebuild lost wealth and deleverage household balance sheets, all of which are weighing on consumption, I have been struck by the recent very weak labor income growth, driven in part by stagnating nominal wages. Wages have posted some of the

smallest gains ever recorded. Furthermore, my contacts report widespread reductions in pension contributions, medical coverage, and other benefits.

It seems equally unlikely that investment spending will propel a robust recovery with an overhang of excess capacity serving as a headwind. President Fisher provided some lovely examples of that. This excess capacity, or gap effect, is evident in the housing market, where a sizable inventory of unsold homes is holding down new residential investment. It is also likely to stifle capital spending in manufacturing, where utilization stands at its lowest level of the past 60 years. Even after adjusting for factories that will never reopen, this huge overhang of industrial capacity sets a high hurdle rate for new business equipment outlays.

I share the Greenbook's pessimism about nonresidential construction. My contacts uniformly expect commercial real estate conditions to deteriorate further, with rising foreclosures as loans come due that cannot be supported by falling rents and lower appraisals. Moreover, the shortage of credit to this sector may cause property prices to decline quite dramatically.

State and local budgets are another factor likely to depress growth in overall final demand. California is the poster child in this regard, but most states face entrenched, structural, fiscal problems. Despite all the press coverage, these problems actually have been tempered recently by the federal fiscal stimulus and by drawdowns from states' rainy day funds. Going forward, the pain may worsen with further revenue shortfalls and spending cutbacks acting as a drag on the whole economy.

Although I do not anticipate a strong recovery, I now see the risks around my modal forecast for a gradual recovery to be more balanced than before. My greatest worry on the downside relates to commercial real estate and the potential for deteriorating conditions to cause many community and midsized banks to fail. But with the improvement that we have seen in

broader financial conditions, there is now some appreciable upside risk as well. Even if we are lucky enough to get sustained, robust GDP growth of, say, 4 to 5 percent for the next two years, we are still likely to fall short of our full employment goal, given the size of the output gap and the pace at which potential output appears to be growing. Like President Evans's contacts, my directors report they are intensely focused on cost-cutting measures, and recent readings on productivity and earnings suggest that these efforts are paying off. With such healthy productivity growth, we're likely to see yet another jobless recovery.

Turning to inflation, I have two separate concerns. On the one hand, I am worried about the increasing degree of public alarm regarding the longer-term inflation outlook, and at the same time I am worried that the intense downward wage pressure reported by my contacts could result in disinflation over the next few years that is more severe than in the Greenbook forecast. Both of these separate concerns are apparent among forecasters participating in the survey of professional forecasters. Over the past six to nine months, the lowest quartile of forecasters has become increasingly concerned with disinflation over the next five years. In contrast, the top quartile of forecasters has become increasingly concerned with rising inflation five to ten years out. These shifts in the distribution of forecasts suggest a very different skew to the inflation risks we face over the next five years versus the longer horizon.

The fear of higher long-term inflation reflects to a large degree a loss of confidence that the Federal Reserve will be able to attain price stability in the face of unsustainable federal budget deficits. This fear is real, growing, and disruptive. To assuage this concern, it is important for us to emphasize and defend our independence, to express confidence in our ability to tighten monetary conditions when the right time comes, and to stress our determination to maintain price stability.

These inflation fears notwithstanding, the main threat to the attainment of our price stability goal over the next several years stems from the disinflationary forces that have been unleashed by the enormous slack in the economy. The 1980s provides a useful historical comparison along several dimensions. Remember that during the 1980s fears about burgeoning federal deficits in an unsustainable fiscal situation were widespread, as they are today. Moreover, the Federal Reserve was under significant political pressure, and there were concerns about its independence. Even so, with unemployment hitting 10.8 percent in 1982 and plummeting oil prices, core PCE inflation fell about 6 percentage points during the first half of the 1980s.

Inflation expectations appear to be more firmly anchored now than in the 1980s, and I expect that to help avoid a calamitous disinflation. But I am mindful there is a lot we don't know about how these expectations affect actual inflation and how to measure the expectations that are relevant for price setting. It is sobering to recall that, from 1981 to 1986, professional forecasters consistently overestimated year-ahead inflation, but these expectations did not stop inflation from falling quite rapidly. So while I would not quibble with the Greenbook projection of only 1 percentage point or so of disinflation, I think we should remain attentive to downside risks.

CHAIRMAN BERNANKE. Thank you. President Stern.

MR. STERN. Thank you, Mr. Chairman. Let me start with some comments about the District economy, where the anecdotes have been distinctly a mixed bag recently. On the positive side, clearly, there has been some acceleration in hiring in parts of the service sector. Auto sales are improving at least for the time being. Volumes in the housing market in terms of sales of both new and existing homes have picked up, and there are certainly anecdotes of the positive effects from the fiscal stimulus program regarding some infrastructure projects and so

forth. On the negative side, things related to transportation, whether it is trucking or volumes from the ports and so on and so forth, are weak. Residential and commercial construction remains weak, and tourism activity and most other measures of discretionary consumer spending are pretty soft as well.

As far as the national economy is concerned, I do think that the contraction in activity has ended and expansion has resumed. If we think about the circumstances today relative to four or five months ago, the bulk of the surprises both here and abroad have been on the positive side in terms of economic performance, and I would include in that the corporate earnings reports that we have been getting. Now, there may be some noise in all of this, of course, but I think it has been going on long enough and looks broad enough that there is a real signal here. Also, financial conditions have distinctly improved in both equity and credit markets and certainly more broadly than I would have earlier expected. So that is all to the good. And I do think that the latest information on compensation, where it appears that it is less sticky than we might have earlier expected, may augur well for employment at least going forward. All of those are on the positive side. My trajectory for real economic growth for the balance of this year and next year is for a bit more rapid growth—and it has been for some time—than in the Greenbook. I would not make any changes to it at this point, but if I were going to, I would probably mark it up a little further given the way things have developed.

Let me just make a comment or two about the dual mandate at this point. As everybody is well aware, we have had a very significant shock or a series of financial shocks, and in the wake of that, it seems to me that we ought not expect to achieve the dual mandate very quickly. Now, as far as inflation is concerned, if you take the Greenbook forecast seriously—and I do—and you look at core inflation, we are not very far off from it, at least not unless you are really

wedded to 2 percent as the precise target. But as far as employment is concerned, we are a good deal further away, and of course, if you look at the experience of the economy coming out of the recessions of '90, '91, and 2001, even though I would argue that a fair amount of stimulus was applied during and following those recessions, it took quite some time for employment to pick up in a sustained way and for the unemployment rate to begin to decline in a sustained way. What I conclude from that, and what I think we ought to be prepared for this time around as well, is that recessions are partly about, maybe largely about, resource reallocation, and it simply takes time for that to occur. There is only so much that traditional stimulative policies can do to hasten those kinds of adjustments, and if that is a reasonably accurate assessment of the situation, it is simply going to take time for us to resume the achievement of the dual mandate. Thank you.

CHAIRMAN BERNANKE. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. The Eighth District economy remains weak. The latest reading on Eighth District unemployment, 9.3 percent, is about the same as the national average, but this does mask a considerable variation within the District. Arkansas, for instance, has an unemployment rate of 7.1 percent, whereas Kentucky and Tennessee are at 11 percent. This variation has actually increased the spread between those numbers, which has about doubled in the last year.

Like others here, the reports from my contacts are mixed. There are reports of continuing job cuts from contacts in the automotive, transportation, electrical equipment, and aerospace industries—Boeing has a big presence in St. Louis. But firms in steel, fabricated metal, furniture, and plastic products reported plans to actually hire additional workers. I would interpret mixed signals like this as typical of a business-cycle trough, and I am hopeful that this

is what we are experiencing. I think the story from the Eighth District is very consistent with the narrative for the national economy.

On the national outlook, I am encouraged by signs of improvement, especially that the financial market turmoil continues to abate by many measures, but I think we still have some way to go on that dimension. And while the financial sector continues to repair, we are still vulnerable to further shocks, and so we have to remain vigilant. My sense is that we have established the credibility of government guarantees in many areas since late last year, and that the credibility of government guarantees has largely controlled what Governor Warsh and many others have called the Panic of 2008. I think we may be at the end of that phase right about now. Control of the panic is not the same as actually having a healthy and efficient financial intermediation sector. The next phase will be to emphasize efficiency and health in the financial intermediation industry. My sense is that getting that right will have important consequences for U.S. economic growth in the medium term. In particular, the Japanese have been widely criticized for not finding the right policies during this phase, contributing to their lost decade outcome.

I thought that during the intermeeting period our discussion and communication of exit strategy, mainly by Chairman Bernanke but also by many others around the table, was very useful. Markets seemed to back off the idea that the Fed does not have a plan. I think we did establish that the Fed certainly has tools and a plan for exit, and I think some medium-term inflation fears receded during the intermeeting period because of that communication. More—maybe much more—may have to be done in this area, though, because the message is quite a complicated one, as I found myself trying to explain to people. We have complicated interactions among our set of liquidity programs, the asset-purchase program, and what to do

about interest rates going forward in the longer or medium term. One lesson from this intermeeting experience is that markets are still pretty focused on interest rates at the end of the day, really overly focused on interest rates, given this Committee's apparent plans and given the fact that we have stressed that we intend to keep rates low for an extended period. I would like to knock markets further off the focus on rates because our plans do not contemplate moving back to ordinary interest rate targeting any time soon. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Hoenig.

MR. HOENIG. Thank you, Mr. Chairman. Let me start with the District. Like the national economy, we are showing some signs of stabilization. In our manufacturing surveys and with contacts, we have seen modest increases in production and new orders for the past couple of months, driven in part by rising export demand. In housing, sales and home prices have stabilized, and the inventory of unsold homes is the lowest in some time. With the collapse of the energy market, we did see some really sharp declines in drilling and production activities, and the declines account for much of the fall in our structure investments during the first two quarters of this year. With the stabilization of that market, that area has also stabilized in our region as oil production or drilling has begun to stabilize and increase slightly.

The labor markets, as everyone else has said, tend to lag, and they remain weak. In the nonresidential real estate markets, the volume of commercial construction activity continues to fall relatively sharply, and the financial difficulties in the industry continue to worsen. Delinquency rates on construction loans are rising. CMBS quality is deteriorating, and there is little refinancing available for maturing loans, and that is the case even when the properties are leased. There is just a very significant reluctance to finance right now. Appraisers are also being quite conservative. If they take a leased property and they look at their 2006 appraisal values,

they will discount them 20 percent, the assumption being that the higher cap rates have to be worth less and harder to finance. For those that are not leased or not occupied, the discounts run from 30 to 60 percent, with the greatest number in the condominium markets. However, they are working through that. The banks are being conservative right now, and I will come back to that in just a second.

In terms of the national outlook, I agree with others who have said that the economy is showing mixed data, and that is usually an indication that we are likely at the bottom of the recession. I expect very modest growth in the second half of this year and then a picking-up of momentum as we get into 2010, as fiscal stimulus engages even more than it has at this point. Monetary policy remains easy. Inventory rebuilding begins to occur, and consumer and business attitudes hopefully improve, and I think the consumer attitude will. It has been there in the past, and I think it will be once again.

Obviously, the risk to the outlook is in the financial system, which remains weak. Setting aside the largest institutions, we know that there is some retrenching in regional and community banks, especially in the commercial real estate area. What we find—and I think it is interesting—is that the banks with stress in their commercial real estate portfolio usually have stress in the rest of their portfolio as well—C&I loans and so forth. But in this instance, I think that going forward their effects will not be as negative as we sometimes fear, for a couple of reasons. They are in a defensive mode right now. They are conserving capital. Those that can survive will survive; and as the economy improves, they will be able, and will be interested in beginning, to lend again. For those that will not survive, another fiscal net is there, and that is called the FDIC because many of those regional and community banks will go under purchase and assumption when they fail. What that does is take the bad assets out, set them aside, and

recapitalize the bank, which is then actually in a better position to reengage as a financial institution than it otherwise would be. So they are either going to strengthen themselves and come out of this, or they are going to be taken over, which will recapitalize them. I think that will be a mitigating factor on the drag that these banks will otherwise have.

So it is a climb out. It is not an easy climb out, but on the outlook side, I think that it is a pretty positive outlook going forward so long as the economy is basically turning around and improving. Thank you.

CHAIRMAN BERNANKE. Okay. We made a great deal of progress on our agenda, and I understand that there is a 6:00 p.m. reception for the Conference of Presidents. So if everyone is agreeable, why don't we adjourn and begin tomorrow at 9:00 a.m. Thank you very much.

[Meeting recessed]

**August 12, 2009—Morning Session**

CHAIRMAN BERNANKE. Good morning, everybody. Overnight, Brian Madigan polled the members about the issue of adding ARMs to the MBS program, and we did not find a consensus in either direction. We are pretty evenly divided. So what I propose that we do is to hold this in abeyance until such future date as we decide to make significant changes in the MBS program one way or the other. At that point, if we were to expand it, for example, we might want to reconsider. But if we are winding it down, there would not be much point. So we won't take any further action on this until such time as we reconsider the MBS program. Let's continue with our economic go-round. President Pianalto, you are first up.

MS. PIANALTO. Thank you, Mr. Chairman. My contacts are growing more confident that the sharp decline in economic activity is in the process of ending. Auto producers are benefiting from the very popular cash-for-clunkers program. The success of this program is now showing up not just in sales but also in plants restarting or increasing production. Similarly, housing markets in my District appear to be stabilizing, with starts actually heading up. This, of course, is welcome news to the producers of building materials, who have been waiting a long time to see any signs of a recovery in housing.

Still, it would be hard to characterize the mood of business executives in my District as good. "Resignation" is a better summary. The declines in their activity levels have been so large that the uptick in growth that they are now experiencing is easily being met either by inventories or by only incremental increases in production. Most of my business contacts anticipate that their surplus capacity will continue for months or even years to come. They agree with President Fisher's view that there is too much of everything relative to demand.

The auto industry remains a clear example. A number of assembly plants in my District are not going to survive the restructuring that has already been announced. When I consider only the plants in my District that are going to continue to produce after the restructuring is completed, I find that those auto assembly plants produced 2.3 million cars and light trucks in 2007. Toyota and Honda plants account for over half of the total. Now, to give you an example of how low production has been for the past few months, in June these same plants collectively produced less than 36 percent of their 2007 output. Honda and Toyota were operating at well less than two-thirds of their 2007 levels, while the Big Three were at roughly 10 percent of their 2007 levels. The cash-for-clunkers program has been viewed as a national success, boosting July auto sales by 16 percent above June sales. Nevertheless, while this was a sizable percentage increase at the national level, this represents just a month's worth of 2007 production capacity for the surviving plants in my District. This is hardly a dent in the excess capacity available in this entire industry.

The problem is not limited to autos. Primary metal producers, as an example, are operating at less than 50 percent of their capacity. One community banker in my District who noted improving economic conditions cautioned that every plant in her region is operating on some form of reduced workweek. In fact, the dominant reaction of business people in my District to date has not been to close plants permanently but rather to hunker down and manage output levels to match current demand by cutting back on labor or other variable inputs. Workforces have largely accepted a variety of pay and hour cutbacks to make these lower levels of output possible. This downward pressure on wages is showing up strongly both in the employment cost index and, as we saw, in yesterday's unit labor cost numbers. While this pattern might sound as if it is limited just to the Midwest, international producers report similar

experiences in their locations worldwide. From the producer standpoint, it is just hard to see an impending acceleration of prices, although the growing stability in output does seem to have been enough to limit further discounting.

To gain further insight on the output gap, I met with a group of academic advisers who worked on different models that try various approaches of evaluating the output gap over the business cycle. They all essentially agreed with my business contacts' opinions that it is likely to take a long time before this output gap is absorbed. Combining their perspective with the information that I gathered from my business contacts, I ended up leaving my output projection largely consistent with my forecast at the last meeting, which has been broadly consistent with the Greenbook's viewpoint on output. I expect output to grow slowly in the second half of this year, followed by a return to more-solid growth rates next year.

Although I expect inflation to dip in the coming months, my outlook for core inflation calls for a gradual climb back toward 2 percent in the next two or three years. My inflation outlook runs a little higher than the Greenbook baseline, largely because of differences in our views of where inflation expectations will settle out. And although the large output gap in my outlook does serve as a disinflationary pressure, the research on this issue leads me to be cautious about how much effect this output gap is going to exert on my inflation projection.

So the risks to my outlook remain to the downside for output because the improvements that I have seen, notably in housing and auto sales, have relied on stimulus programs that may be quickly depleted and a still uncertain recovery in consumer spending. My talks with both researchers and business people leave me with a lot of uncertainty about the inflation trend, and I see those risks remaining symmetric. So while the news has been encouraging, I think watchful waiting seems like the right course for monetary policy to me. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. Manufacturing in the Fifth District appears to be running ahead of the nation, and I guess fairly confidently I can say running ahead of the Fourth District's. Our survey index moved up again last month and has been in positive territory for three months in a row. And the new orders component registered a particularly strong increase. Our service sector continues to contract, however, although somewhat less broadly than before. What improvement has taken place has been most notable in nonretail businesses. Apart from the cash-for-clunkers frenzy at auto dealers, retail firms in our District still report very slow shopper traffic and depressed big ticket sales.

Our directors and other contacts continue to describe conditions as gloomy—a view that seems to be associated with the low level of current activity rather than its rate of change. I suspect they are less impressed than economists by trends in first differences. Some of our contacts wonder how long current conditions will last, and one director reported that people are hanging on like Sergeant Snorkel, a character in the “Beetle Bailey” comic strip who is sometimes seen dangling from a small tree growing out of the side of a cliff. [Laughter] On the other hand, we have also heard reports of activity picking up here and there around the District. Both our surveys and our other contacts indicate little or no price pressures at this point. A couple of our bankers report strong deposit growth. One cited state and local government shifting funds out of money market mutual funds in order to obtain unlimited federal insurance. Some of our large banks—and I have seen these reports from elsewhere in the country—have seen a small decline in early-stage credit card delinquencies, thirty days or less, which they believe may be the beginning of a peak in consumer credit losses.

But one of our banks has done some really interesting research. This is a large, formerly monoline credit card bank with a fairly good reputation for quantitative research. Their staff looked at the 2001 and 2008 stimulus programs. And there, because the disbursement was staggered by the last two digits of your Social Security number, they were able to trace the effect through their customer base. They estimate an effect between 20 and 50 basis points on their second-quarter early-stage delinquencies from the stimulus payments this year. This is enough to undo the decline from the first to the second quarter in the early-stage delinquency results that they saw. Now, that said, if you look at their monthly data, even with the adjustment they still show a peak in May rather than in March as in the unadjusted data. So there is still a glimmer of hope, but it is a fainter glimmer than one would take just from the raw numbers. I thought that was pretty interesting.

Since our last meeting, the national data have come in pretty much as expected or, in some cases, not quite as dismal as expected. As a result, our projections haven't changed appreciably. It seems pretty clear now that the downturn has ended, and positive economic growth is set to resume. But as I said, I get the sense that economists are taking more comfort in this than anyone else. And it seems as though many people are coping with the depressed level of current activity and uncertainty about the timing and strength of the recovery. I think that, in turn, is going to depend critically on the path of household spending. The 2 percent decline in real consumption from the end of '07 through the beginning of this year has been fairly extraordinary. But the fact that consumption has been fairly flat this year I take as encouraging, considering the decline in compensation and the tightening in credit terms over that period. This suggests that consumer spending is likely to expand if labor market conditions stabilize and the recent gains in household net worth are sustained. That expansion is likely to be at a cautious

pace, however. Labor market conditions may stop deteriorating, but they are unlikely to improve dramatically anytime soon, I think. And any recovery in consumer creditworthiness is likely to depend on improvements in consumer income prospects.

For other components of demand, the outlook is more mixed, as some of you have said. The prospects in nonresidential construction are bleak, given the ongoing rise in vacancy rates. But the inventory swing in GDP is going to give us a second-half boost, and the drag from residential investment appears to be lessening as housing starts begin to affect the flow of residential construction spending.

Inflation has been sort of choppy lately but reasonably well contained. Core PCE over the last six months averaged 1.8 percent or a few tenths lower if you back out those tobacco tax hikes. One widespread view is that some sort of output gap is going to hold down inflation. There has been a little commentary on this so far around this table. This situation bears some resemblance to the beginning of the last recovery in late 2003, when the Greenbook forecast had inflation falling to 1 percent because of the remaining slack in the economy at that time. Of course, we had that scare in early 2003, when core inflation seemed to fall below 1 percent for a time. But by the time of the December meeting, inflation was running around 2 percent in the data we had at that meeting. Moreover, TIPS inflation compensation had risen pretty sharply in the second half of 2003, so inflation expectations and our expectations about the output gap were giving conflicting signals about how inflation was going to evolve. As it turned out, what we got was a small inflation scare in 2004, not disinflation. Overall inflation turned out to be 3 percent in '04. Core inflation was  $2\frac{1}{4}$  percent. And it suggests that, at least in that episode, expectations trumped the gap.

Reflecting on that episode reinforces my skepticism—others have commented on this—about the usefulness of conventional output gaps for forecasting inflation, particularly at the beginning of a recovery. Now you might argue that the amount of slack in the economy was far less then and it is far larger now. The unemployment rate then was only about 6 percent. And that may be true, but then the question that arises is, Why hasn't inflation fallen by more now if the output gap is so much larger? And a recent San Francisco Fed publication by a couple of its economists made this point pretty firmly.

President Plosser and I discussed output gaps with Mr. Kiley at the June meeting. That conversation may have seemed a bit confusing. It was when I read the transcript. [Laughter] But I think the point to take away from it is that in DSGE models, like the Board's EDO model, and all of the broad class of New Keynesian models that are coherent accounts of how the gap interacts with inflation, the relevant potential or natural output is something that varies a lot with supply and demand shocks. This is the point that President Plosser made yesterday. Now, you can always step outside one of those models and calculate some smoothed output trend from the data, and you can call that potential, but that number has no significance for the behavior of inflation within the model. I think these models provide a way of understanding how it would be possible for monetary policy to generate an increase in inflation even if output is fairly low relative to some smoothed trend calculated from outside the model. These issues have important implications for our strategy and our recovery, and that suggests to me that it could be very dangerous to rely on a sense that output and labor markets are not tight enough to trigger an increase in inflation. That completes my remarks.

CHAIRMAN BERNANKE. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Mr. Chairman. Like I think most people around the table, I am pretty confident that real GDP growth will be positive this quarter. Much of the economic news has been better since the last meeting, with a wide range of indicators suggesting that the recession is either over or will be over very soon. For the remainder of the year, the economy should be boosted by three factors that a lot of people have cited around the table—recovery in housing and a significant rise in motor vehicle sales, the effect of the fiscal stimulus program in supporting domestic demand, and a sharp swing in the pace of inventory investment. In fact, if the inventory swing were concentrated in a particular quarter, we could actually see fairly rapid growth for a brief period.

But I expect that, as in the 2001–03 period, the recovery will be slower than usual, at least over the next year or two. In particular, I expect that consumption is likely to grow only modestly. First, growth of real disposable income will probably be weak by historical standards. As I noted at the last meeting, there are a number of special factors that boosted real disposable income in the first half of the year, helping to offset a sharp drop in hours worked and very sluggish hourly wage gains. These special factors will be absent during the second half of the year. Second, households are still adjusting to the sharp drop in net worth caused by what will likely be a persistent decline in home prices and last year's fall in equity prices. This suggests to me that the desired saving rate will not decline sharply as the recession comes to an end. As a consequence, consumer spending is unlikely to rise much faster than income. In other words, weak income growth will act as an effective constraint on the pace of consumer spending. Third, the financial system is still in the middle of a prolonged adjustment process. Banks and other financial institutions are working their way through large credit losses, and the securitization

markets are recovering only very slowly. This means that credit availability will be constrained for some time to come, and this will also serve to limit the pace of the recovery.

Despite the big buildup of slack in the economy, the core measures of inflation have been somewhat sticky. I don't think this will last. Thus, I think the risks on inflation are still likely to be on the downside over the next year or two. There are two reasons why I think core inflation is likely to decline going forward. First, the variables that respond to labor market slack, such as the employment cost index, have already fallen quite sharply. This suggests that the output gap is exerting downward pressure on labor costs, which is a key component of overall costs in many industries. Second, during the first half of the year, core services inflation has been lower than core goods inflation. I think this is meaningful because core services inflation exhibits much more inertia than core goods inflation and because it is unusual for inflation for core services to be running lower than core goods inflation in the first place. I don't expect that we will see this pattern persist for long, and I suspect that it is more likely that core goods inflation will moderate than that core services inflation will pick up in the near term. So I would expect the overall core inflation rate to come down. Thank you.

CHAIRMAN BERNANKE. Thank you. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. As others have remarked, the incoming data have confirmed that the forces that have been dragging down the economy are abating, and as a consequence, activity is leveling out. Those forces included consumption, which fell very, very rapidly in the second half of last year and is in the process of leveling out. Housing demand is picking up a little. Most important, as others have pointed out, the inventories of goods are being brought into better alignment with the lower level of sales. Declines in inventories should taper off, and that will add to industrial production and damp declines in employment. In the

Greenbook, inventory investment subtracts 1½ percentage points from H1 growth and adds 1½ percentage points to H2 growth. So that is a big swing by itself. And, of course, better economic data are feeding, and feeding off, the better environment in financial markets and the resulting decline in risk perceptions and risk aversion.

Beyond the inventory cycle, the fundamental shape of the recovery will be determined by final demand. The question I asked myself was, Is there any reason to be more optimistic about that now in any fundamental way than the very gradual path most of us had written into our forecasts a month ago? And I think there are some reasons for greater optimism. The rebound in asset prices, including equity prices and wealth, has been faster than anticipated, and that will feed consumption and lower the cost of business capital; global economic growth is picking up more than expected; and with the weaker dollar, net exports will be less of a drag. I think we can have more confidence in a multiplier–accelerator effect from the shift in inventories feeding back on final demand.

But I think there are a lot of reasons for caution as well, and my fundamental outlook hasn't changed. Many of my reasons were already given by the Vice Chairman, Governor Tarullo, and others, but let me list them here. In fact, final demand was weaker in the first half of the year than we had anticipated, especially for consumption, which was held down by the sharp drop in labor compensation. I think labor compensation is going to be depressed going forward, given the high margin of slack in labor markets and the slow recovery of jobs. Some of the current signs of stability in demand are being driven by policy-induced borrowing from future consumption. I am thinking of the cash-for-clunkers program and the first-time homebuyer tax credit. That is all just taking demand from 2010. The stabilization of consumption spending occurred in the context of a major increment to income from the stimulus

program. So even with all of that extra income, consumption just stabilized. That doesn't repeat. Fiscal impetus dies out over the next few quarters, removing that source of support for final demand. The saving rate is not likely to go down from here, as the Vice Chairman remarked, and is more likely to rise than fall. The staff's roughly 4-percent constant saving rate is consistent with wealth-to-income ratios based on relationships over the past decade, and I think that is the most likely outcome. But those saving patterns could, partly at least, have reflected the not only rising comfort levels and increased appetite for risk associated with what had been thought of as the Great Moderation but also the innovations in credit markets that increased the availability of credit. I think the risk is that greater uncertainty about jobs and reduced access to credit will spark greater saving out of current income.

Despite the improvement in financial markets, credit is definitely tighter for households. They are facing substantial increases in borrowing rates and reductions in credit lines, especially for credit cards, due to rising loss rates and in anticipation of the effective dates of new laws and regulations. Respondents to the Senior Loan Officer Opinion Survey didn't see this going away anytime in the foreseeable future.

More generally, although financial conditions have improved, they are still quite tight in a number of dimensions. Small businesses have been constrained by the tightening of credit card and HELOC credit. These businesses, in addition, are likely to suffer disproportionately from the failures and churning in banking markets that President Hoenig and others discussed. There is a lot of asymmetric information in a small business loan. It is hard to transfer that business from a failing bank to another bank. The National Federation of Independent Business's survey suggested that small businesses themselves see great difficulty in getting credit. It is much tighter, much worse than even the early '90s, when we had the 50-mile-an-hour headwinds. The

banks' ability and willingness to take over more credit flow is constrained by their concerns about losses in capital. Credit availability is likely to loosen up gradually for those credits that aren't easily channeled through securities markets.

And even after the recent gains, there are important asset prices that don't really reflect the policy easing. Bond yields, say for the triple-B corporation, which is approximately the median corporation, are not far from where they were in August '07 or September '08, before the Lehman collapse. Stock prices are down 30 percent from August '07, despite the recent gains, and 20 percent from just before Lehman fell. The broad index of the dollar is unchanged relative to August '07, and it is higher relative to September '08. So I think in the context of a substantial widening in the output gap, you would like to see a marked easing of financial conditions. And although certainly in the short-term markets financial conditions have eased, I think across a broad array of markets they really haven't eased very much. So, on balance, I think this is going to damp the recovery, and I see the very gradual pickup in final demand as the best forecast, implying high and rising margins of underutilized resources. In that circumstance, it is likely to be consistent with damped inflation for the foreseeable future.

I am a little surprised at how damped the decline in inflation and underlying inflation has been, but I also recognize that the relationship between the gap and inflation is not tight. My sense is—and Nathan commented on this, and it was in the Greenbook as well—that globally inflation hasn't come down that much. This has been true for inflation-targeting countries and non-inflation-targeting countries. It has also been true, as near as I can tell, in countries that did a lot of quantitative easing and in countries, like Canada, that didn't do much quantitative easing. I was looking at the Canadian nominal TIPS spread this morning. It looks exactly like ours, despite the fact that they don't have the worry about exit strategy that we have. So I think what

we have is very firmly anchored inflation expectations. We could see that long-term inflation expectations remained anchored in '07 and '08, when headline inflation was high and rising, and they have remained anchored in '09, when headline inflation has fallen to the lowest level in several generations. I think the underlying pressure here is for lower inflation with the weakness in compensation and labor costs, and I interpret that weakness as indicative of the fact that there is an output gap. However large it is, it is substantial enough to put downward pressure on labor costs. And I think it will be very difficult to raise wages or prices by very much in such a competitive environment. There won't be any pricing power for a number of years under the most likely scenario.

Although inflation has been sticky, by most measures—even measures of core inflation—it has come down over the past year. I was looking at the Greenbook table of broad measures of inflation, which look at 2007:Q2 to 2008:Q2 and 2008:Q2 to 2009:Q2. Every measure, except one, in that table is off, and all of the core measures had declined over the past year. For example, core CPI inflation went from  $2\frac{1}{4}$  to  $1\frac{3}{4}$  in the four quarters ending in 2009:Q2. I think this does reflect weak demand and slack and is a situation in which expectations will remain anchored or could even begin to recede a bit. The lesson is, when inflation expectations are well anchored, the Phillips curve is flat. This suggests to me that we could have substantial output growth and a narrowing of the output gap without added inflation pressures. In fact, in my view, the next move in underlying inflation is more likely to be down than up. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Warsh.

MR. WARSH. Thank you, Mr. Chairman. I did some thinking overnight about the assessment of financial markets that Brian Sack highlighted yesterday, and I realized that

markets haven't seemed so good or seemed so self-satisfied since, I don't know, the spring of 2007. [Laughter] So I thought we should all take some good caution from that.

Let me put an exclamation mark around some of the points that Brian made in describing the remarkable move across equity and credit markets. First, on the equity market front, more industries, more companies, and more subsectors have participated in this rally and the expectation of recovery. The breadth of this move across assets and across geographies has been far more durable than I would have expected when we last met. The credit market improvements have been even more significant. We have seen the positive sentiment move down the capital structure. The bank loan syndication market, which had all but disappeared, to where obituaries had been written about it, is building remarkably over August. It wouldn't surprise me at all if, come the post-Labor Day rush to the capital markets, we see the bank loan market coming back after the improvements we have seen in the last several months in high yields, convertibles, and preferreds, again attesting to remarkable improvements in credit markets. Now, in some ways these improvements have been made possible by an increase in the emergence of investable assets. So re-risking is the new de-risking. Re-risking is the new fad in financial markets. Fund flows, particularly toward riskier assets, are impressive, and I think we have to continue to watch this trend and this development.

If I were to assess where we stand here in August against what our expectations of the financial markets could have been over the last few quarters, I can't help but think that we are very much at the high end of what might have been reasonably achievable. How much credit is owed to the Fed and how much credit is owed to the self-corrective nature of these markets or to some good fortune is hard to judge.

Let me turn now to the trends in these financial markets and what they might suggest for the real economy. Amid this rally, I think it is possible that this breadth of improved market activity ends abruptly. We don't want to suffer from a failure of imagination, and I think we could envision a series of exogenous shocks that bring many of these improvements to end more quickly. My own sense is that the prospects of those shocks are more likely outside the United States, particularly outside the U.S. banking sector, but not impossible here. But given the rally in these asset prices, they seem to be able to cover up for a lot of sins on balance sheets of banks overseas. So I think the prospects that I worried about six weeks ago—of a surprise that causes these markets to retreat—are lower but still not negligible.

Well, it would be nice if these trends were to continue unabated. But my sense would be that straight-line, undifferentiated moves in financial markets tend not to end well. What we might be enduring over the next few months might be some period of pause, some period of patience and consolidation that could give this rally some longer legs. If the next six months look like the last three or four, then it does strike me as possible that there is an upside, not only in financial markets but in the real economy, along the lines of what Governor Tarullo highlighted yesterday.

So fundamentally, one central question for us is whether financial market trends persist long enough and strong enough so as to markedly drive sustainable gains in the real economy. That is, will the wealth effects of improved balance sheets both to consumers and businesses offset the weak outcomes that were highlighted in the Greenbook and by the discussion yesterday?

Let me turn now to the real side. I broadly share the Greenbook's view of the real economy over the next six quarters, though I suspect that we will see pretty significant volatility quarter over quarter in GDP. But I think the Greenbook strikes it about right. You take some account of the

positive incoming financial market data but recognize that they cannot mask the weak incomes and the slow trajectory for improvement in labor markets. Weak real disposable incomes coming from weak labor markets and the problems that small businesses will no doubt confront in the next 18 months, as highlighted by Governor Kohn, suggest to me that we run the risk of more-persistent weakness on the income side than the upside improvements in balance sheets and household net worth.

So after these six quarters of somewhat bumpy but real improvement, what is next? I suspect that the predominant risk in the medium term is for slower growth and weaker labor markets than we have long grown accustomed to coming out of recoveries. The headwinds posed by financial markets have probably turned into crosscurrents in figuring the direction of the real economy, making our jobs around this table even more difficult than usual. Prudence probably requires us to take less signal from the improved financial market conditions and to seek further evidence not only of improved corporate profits but also of revenue growth. As I think President Fisher said yesterday, the most telling tale for the future, at least of the equity markets and the real economy, will be revenue growth. Outside of financials, is there top-line growth from the rest of the Fortune 500? Does that suggest some top-line growth from small businesses that is telling us that the economy is gaining some enduring strength not because of or supported by government programs but because of the improvements on the real side of the economy?

In the course of the last 18 months, we have debated first the prospects of recession and now the prospects of recovery. I think around this table we have struggled with trying to understand what has gone on. During the recession, we first asked ourselves some 18 or 20 months ago what was the breadth of the weak signs that we were seeing. Then we turned to a discussion of what was the depth of the real recession that we were confronting. Then late in the cycle, even now, we are

talking about what was the length of this recession. And I suspect that these same words—breadth, depth, and length—end up capturing our discussions in the next 18 months. What is the breadth of the improvements—the breadth of the green shoots—that we try to envision as we think of an economy coming out of recession? What is, in this case, the height—that is, what can this economy aspire to? What can it drive? And as questions of double dips happen as some of the fiscal and monetary stimulus and some of the extraordinary actions tend to abate, the question will be, What is the length of this recovery? I think it will make our challenge over the period in front of us as difficult as that over the past 20 months.

A couple of final items. First, on the international front, I was encouraged by Nathan's description of the improvements, particularly in the emerging markets. But I have to admit being less persuaded that there will be a V-shaped recovery, particularly in places outside China. I am less persuaded that there will be a V-shaped recovery or anything even like a U-shaped recovery in Europe and among many of our trading partners absent a strong U.S. recovery. Europe is likely to be materially weaker than the United States and emerge later from recession.

And a final note on inflation, after having heard a broad discussion around this table. Inflation measures do appear quite satisfactory for now. The situation certainly bears watching. My own sense is that, while expectations of inflation remain firmly anchored, the Fed has played in the last several weeks an important role in describing our conviction that we have the tools to exit from the extraordinary practices we put in place and that the Fed will be central to those expectations over the next 20 months, putting further burden on folks around this table. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. I am going to echo and maybe expand upon some of Governor Kohn's comments about credit. First of all, the current situation: In the overall lending environment, demand is extremely low, although bankers are very happy with the quality and the spreads on the new credit that they are originating and they continue to shift resources to work through problem credits. In C&I lending, credit quality is actually holding up better than they expected, but line utilization is at very low rates, in some cases 30 percent, maybe 50 percent on the high side, and again, new demand is weak. In consumer credit, they did cite early-stage delinquencies as being improved, but nobody seemed particularly comfortable with calling that a trend.

In residential real estate, the low-end product is beginning to move. Sellers are lowering their price expectations, in some cases being forced by the banks that will no longer extend interest carry to get through this, and the buyers seems to be less fearful of further price declines. Most of the buyers are either first-time homebuyers or investors who now see that the rental cash flow on these makes sense. The inventory is actually fairly tight in the 3-to-6-months' supply for the low end and in the 30-to-40-months' supply for the higher, larger properties. Some of the inventory is just plain bad product. It is bad construction; it is poor design, poor location, or too big. The new construction is generally smaller with fewer extras but still with quality finishes because that is what is being demanded at the moment.

On the commercial real estate side, they are working down construction loans—some through payout, some through charge-off, some through sales, and much through mini perm financing. There is very little demand for new CRE (commercial real estate loans)—a reminder that commercial real estate loans are still just business loans and their performance is dependent upon the industry and the local economic conditions. So the deterioration depends on the type of

property. Condos are awful. Hospitality properties are extremely weak. Retail is still suffering from rent renegotiation and vacancy rates, with rural areas and small towns being hit particularly hard by big box closures. Office and multifamily properties are weak but are still holding up reasonably well.

When I look at credit availability, I am struck by the Senior Loan Officer Opinion Survey results, particularly the part that shows reductions in the number of respondents that have tightened terms while, when weighted by balances outstanding, more than 75 percent of the respondents expect the standards for prime borrowers to remain tighter than normal for the foreseeable future and the fraction for tighter terms for the foreseeable future for subprime is even higher. In addition to having tighter terms for approval, banks are unlikely to engage in the aggressive acquisition strategies that they had—from the credit card mailings, the teaser rates, and that sort of thing—because of the inability to reprice post-acquisition. Those are unlikely to resume, and I did hear reports of 40 percent to completely eliminating those types of promotions.

On mortgage and home equity, as the indirect channels have performed so poorly, again, they are unlikely to resume indirect acquisition. The existing credit card and home equity line availability is still being reduced. I heard a lot about the credit card regulations, and my sense is that they are going to affect availability, pricing, and terms for maybe a couple of years but ultimately a new equilibrium will be found and a new business model will take hold. Most actually expect C&I lending to return with improving business performance as banks look for income. This is the place to which they all seem to be looking for additional income, but this may not translate into improved availability for small businesses. Charge-offs are running very high on small business credit, and small businesses are, frankly, very thinly capitalized. Many of them are just giving up, no longer willing to advance the funds to keep the businesses running. SBA eligibility is a very, very tiny

slice of this market. The majority of these loans are not even in C&I. Some are in CRE—if you think about hotels, gas stations, and that sort of thing, where the property is the business. Some are in consumer, in mortgages, in home equity, and in credit cards.

Then I have a hard time even envisioning what the future of mortgage finance is going to look like. The originate-to-distribute model is still broken, and there is no new model in sight. The future of the GSEs is murky. The FHA volume is growing amid rumors of credit problems and potential fraud. The private label is closed and unlikely to return without changes to originator compensation and examination, rating agencies, contracts with servicers, payment priorities, loss distribution and trust agreements, and transparencies of the loans underlying the securitizations. So it is difficult to determine how dependent even the GSE market is on the Fed purchases.

Finally, bankers are making loans regarding credit in light of a number of uncertainties in addition to uncertainties about economic outcomes. The first one is capital requirements. Will all banks be stress-tested? Is that the new norm? There is limited understanding of what the capital-assessment process is designed to do and what it might mean. Community banks insist that 12 percent is the new 10 percent in terms of risk-based capital, and many note statements regarding higher capital requirements for systemically important institutions.

In terms of treatment on commercial real estate loans, while all of the anecdotes are certainly not applicable to all banks and may not be applicable even to some banks, all banks believe that they could be true. They discuss the revival of the performing nonperformer. I heard reports of the entire construction portfolio being classified. If a property is not sold through two sales cycles, although nobody seemed to know what that meant, it must be converted to a 10-year amortization. Examiners are requiring new appraisals, and these are being affected by both reduced cash flow and higher cap rates and also by the fact that either there are no comparables or there are

distress sales on the comparables. The CRE loans are creating large classifications due to the reduced cash flows and lower appraisals, even if no loss is ultimately expected, followed by MOUs and C&Ds if the classified loans are over 100 percent of capital, and then a requirement of dollar-for-dollar capital for classified assets.

Accounting issues are also of concern because they actually affect the measurement of capital. FASB is getting ready to propose fair value accounting for all loans. Securitizations, participations, and loan sales are moving back on the balance sheet. We found in the stress test the issues in understanding acquisition accounting and what that means for reserve measures, capital measures, and loan book measures, and then loan loss reserve accounting, consumer protection rules, the credit card rules, the proposed CFPB, the proposal for plain vanilla products, the loss of preemption, and the prospect of a duty of care and fiduciary responsibility. All of these are weighing on banks as they make their decisions.

Given all of these issues, I cannot take my eyes off the alternative scenarios in the Greenbook for financial fragility or higher saving rates and their unwelcome outcomes. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you, and thank you all. Let me try to summarize the discussion I heard around the table, and then I'll add a few comments. There was a substantial consensus that the economy is stabilizing, albeit at a low level, and that the technical recession is ending. Conditions are quite heterogeneous, but that in itself was viewed by some as characteristic of a turning point. Participants agree that output is likely to grow over the remainder of this year, and the downside economic and financial risks may be moderating somewhat. Most expect the recovery to continue into 2010, but there were divergent views about the strength of that recovery. Uncertainties include the strength of the consumer rebound, the extent to which credit conditions are

normalized, and the rate of growth of economic potential. Fiscal stimulus should help to support growth, but state and local governments remain severely constrained. Slack in resource utilization may cap inflation in the near term, but there is a risk of an increase in inflation expectations associated with aggressive monetary and fiscal initiatives.

Now, turning to a bit of detail, consumer spending growth remains weak and discretionary purchases are limited; nevertheless, most saw signs of stabilization in this sector. Households still face considerable headwinds, including slow growth in labor income, uncertainty about jobs and job security, declines in asset prices, excessive leverage, and tight credit. An important issue is whether households' propensity to save will be permanently altered by the recent experience. Real income growth is likely to remain weak for the remainder of the year as stimulus payments decline and as labor markets remain slack. Retail sales are weak, outside of autos where sales have responded to the cash-for-clunkers program and perhaps greater stability in the industry. Households are facing much tougher terms on credit cards, home equity lines, mortgages, and other forms of credit, but stimulus payments may have helped reduce financial stress for some consumers.

Home sales, residential construction, and prices have shown signs of stability or even improvement in some areas, especially at the low end. The more-serious concerns now seem to be in the nonresidential sector, where deteriorating fundamentals, falling prices, and lack of refinancing capacity are weighing down the sector. Commercial real estate defaults are a significant threat to banks, especially small and medium-sized banks. Firms are seeing better-than-expected profits, mostly from rigorous cost-cutting, but revenues remain weak. Inventories are under better control, especially in the auto sector, although there is more to do. Firms are generally setting a high bar for expansion either through capital investment or hiring as managers see a good deal of excess capacity in the system. Uncertainty about government policy may also be slowing expansion plans.

However, some surveys show some optimism among manufacturers, particularly for the medium term. Manufacturers are benefiting to an extent from a better-than-expected global economy and export demand and perhaps a weaker dollar. In the service sector, tourism and retail, transportation, and other sectors are weak, but some areas such as health care continue to grow. Small businesses may suffer disproportionately from the credit environment.

In the labor market, employment data continue to be weak, but there is evidence that payrolls are stabilizing or at least falling more slowly. Staffing is now quite lean, and productivity has risen. Long-term unemployment and permanent separations remain high, suggesting possible problems of skill loss and a need for labor reallocation that could slow recovery in aggregate output. There was considerable discussion that reallocation is linked to the NAIRU. Wage and benefits growth continues to decelerate, reflecting poor labor market conditions.

The cumulative improvement in financial markets since the spring is quite significant. The stock market is up broadly. Private credit spreads continue to come in. Money markets are performing better, and risk-taking has increased. Market participants see the risk of catastrophic outcomes as much reduced. However, financial concerns remain. In particular, banks face significant credit losses yet to come, and as I mentioned, small and medium banks are particularly vulnerable to losses in commercial real estate. Bank lending has fallen dramatically. Loan officers report tight terms. Deleveraging is still under way, and securitization markets for their part are not yet taking up the slack.

Inflation has been moderate and generally stable recently. As measured by TIPS breakevens, inflation expectations have risen, especially at the medium-term horizon, though they still may be characterized as anchored. On the other hand, utilization gaps remain large, and wage growth has slowed markedly. Overall the risks to inflation seem balanced, with output gaps

exercising a deflationary influence and public concerns about the Fed's balance sheet, the federal deficit, and monetary and fiscal exit strategies tending to raise inflation expectations.

Communication about the Fed's ability and willingness to withdraw accommodation at the appropriate time remains important. Any comments?

Let me add just a few words to that. Again, Governor Tarullo mentioned that coming last has some difficulties. I agree, of course, with most of you that the intermeeting news has been quite encouraging. On the real side, there had not really been much of a markup in the expected path of growth, but we have seen now firm evidence of stabilization, and I think we can agree that the downside risks to the real economy are moderating.

In the financial markets, we have been head-faked before. We need to be careful. Nevertheless, improvements are substantial and do feel more durable. I think there may be some evidence, in fact, that we are getting into a more beneficial feedback loop, the opposite of the adverse feedback loop that we saw last fall as an improving economy raises stock prices, reduces credit spreads, and improves confidence in the banking system, which in turn helps the economy.

I think we will be seeing some growth for the rest of the year. In fact, I would venture to guess that there may be some upside risk to the Greenbook forecast for H2 growth. There are a number of forces that I think have baked-in growth for the next couple of quarters. Let me just give a short list. First, obviously, is inventory dynamics, notably in autos, which is being helped by the cash-for-clunkers program, but in other sectors as well. Inventories don't have to increase to improve economic growth; they just have to fall more slowly. Second, we have seen a rise in new orders in manufacturing and significant increases in global industrial production, which suggest some strength in the manufacturing sector. Third, there is a good bit of evidence of bottoming-out of residential construction, which will remove a significant drag. Fourth, fiscal support. Fifth, the

better-than-expected economic growth abroad, which both is directly supportive and suggests that some of the forces at work may be reversing more quickly than expected. Then, sixth, we shouldn't forget about the normal cyclical patterns, which include a rebound in demand—pent-up demand, for durable goods, for housing and other investment goods, and for other things that have been below normal in the last year.

So, again, I think the next half year will be reasonably good with positive growth. Of course, the \$64 billion or trillion question is what happens in 2010 going forward. I guess, as we have discussed around the table, the two key questions will be, first, once the inventory cycle has worked through, is final demand growth going to be sufficient to sustain a near-term recovery; and, second, as evidenced by some of the discussion of the NAIRU, what is really happening to potential, and what constraints will that put on growth?

The consumption path is very difficult to forecast. We are projecting recovery, and we should just keep in mind that so far we really haven't seen really strong evidence even on stabilization at this point. Consumption and disposable income were revised down quite a bit in the NIPA revisions. Consumer confidence ticked down in the latest readings and is still very low in absolute levels, and we have talked about all of the various constraints and drags on consumer spending. And so there certainly is some risk still in that sector. The question, again, is, Will consumption begin to strengthen next year? The Greenbook projects both real final demand and real consumption growing at a rate of about 2.6 percent in 2010. The standard errors for this are very wide, as I will discuss further, but I actually think this is a pretty reasonable guess. First of all, we have to keep in mind always that what matters for growth is the rate of change and not the level. So even if consumption is weak relative to some benchmarks, so long as there is improvement coming from higher asset prices, some improvement in labor markets, greater confidence, and

improving financial conditions, that would support growth in consumption even if the level in some sense is low. So that is important.

A deeper, almost philosophical question is, What is going to happen to saving rates? The Greenbook has households sticking with the household saving rate of about 4 percent that we have seen recently, and that is what the staff projects into the 2010 period. In this respect, the Greenbook saving rate projection is lower than that of many outside forecasters. I think the reason that some people think the saving rate is likely to go up comes from staring at a picture that shows the household saving rate over the last 20 years, which shows a steady decline from 8 or 9 percent to close to zero to where we are today, about 4 percent. I am actually, again, inclined to side with the staff on this. I think that the household saving rate is a pretty flawed measure of consumer behavior for a number of reasons. One reason has to do with the artificial distinction between household saving and private saving—private saving including the saving of businesses. To the extent that households can either see stock prices going up or know what the value of their small business is, they ought to integrate very largely their saving behavior with the business sector. When I was in graduate school, I learned about Denison's law from 1958, which said that private saving is more stable than its components, sort of a preliminary to Ricardian equivalence in a way, and there is some good evidence for that. If you look at the private saving rate, it has been much more stable than household saving. Another indicator that I think is useful, and we discussed in the Board meeting on Monday, is the wealth-to-income ratio, which theory says would be a determinant of saving behavior. What is important to understand is that wealth-to-income ratio behavior was abnormal in the late '90s and the early part of this decade, when you had first a surge in stock prices and then a surge in house prices, and in neither case was consumption able in some sense to keep up with those increases in wealth. The longer-term wealth-to-income ratio is about 4.75 rather than the

5.5 to 6.0 that we have seen recently, and it happens to be exactly where we are today. So there is less of a sense that we need to have substantial wealth building when you look at those data than when you look at the household saving rate. Finally, just in terms of looking at the data, despite all the uncertainties and the drags on consumer spending, we really haven't seen saving go above 4 percent thus far. The temporary increase in the second quarter was due largely to the transfer payments.

So just to reiterate, I think the Greenbook forecast for saving and final demand in 2010 is reasonable. That said, as I said initially, the standard errors around this are large. I think we can be confident that, at some point, consumption will begin to grow again—we don't have to worry about secular stagnation—but the exact timing of the consumer recovery and the speed at which it occurs will obviously make a big difference for medium-term cyclical dynamics. In particular, the Greenbook simulation shows a case in which the saving rate rises sharply. That causes the economy to be very weak in 2010 and then just to begin to grow again in 2011. Another possibility is that the saving rate will rise but only very slowly, which would give us slower growth and a longer, more-extended transition period. So this remains a very important question. Again, I think the modal forecast of moderate growth next year is a good one, but there is an awful lot of uncertainty about that.

On the side of economic potential, we had some very interesting discussion today about output gaps, the NAIRU, and so on, and I think it is an interesting question as to what extent the NAIRU may have risen or may be rising going forward. There are some arguments for a higher NAIRU. The level of long-term unemployment now is exceptionally high, and as we have seen in other countries, the loss of skills and loss of job attachment can lead to hysteresis-type effects, which can raise unemployment going forward. As I had noted myself in the past and others noted

today, there is a significant amount of sectoral reallocation going on from certain sectors that were overexpanded to other sectors. Indeed, as others have noted, a relatively high fraction of layoffs in this episode have been permanent rather than temporary. In the medium term also, we had very low rates of capital formation. We have tight credit and other factors that may inhibit job creation and business creation. So those are some factors that may raise the NAIRU.

My own sense is that the NAIRU may be a bit higher, but I wouldn't go nearly so far as the 6½ percent in the "labor market damage" scenario that the Greenbook looks at. There are a number of reasons to think, in particular, that the reallocation argument should not be taken too far. First of all, if you look at the cyclical variation across industries, it is, in fact, relatively normal for a deep recession. The sectors that are suffering the most are sectors like construction, manufacturing, durable goods, wholesale, and transportation. Those are the sectors that normally are badly hit during a recession, and of course, I would have to say that most of these sectors are now well below what their steady state was likely to be. Diffusion indexes and cross-sectional standard deviations of growth in employment also don't suggest that we are in an extraordinarily different situation from other recessions.

With respect to the permanent layoffs, the real change seems to have happened around 1985. In the '70s and early '80s, we saw a dominant factor. The marginal firing in recession in the '70s and early '80s was more likely to be temporary than permanent. But since about 1990, in the last three recessions, the temporary and permanent shares have been about as constant on the margin as they are on average. That did not say it very well, but what I am trying to convey is that the role of permanent layoffs is not particularly striking compared with the last two recessions. It is striking compared with the '60s, '70s, and early '80s. In fact, there is a good bit of evidence of labor

hoarding of different types. One example I would give is part-time work, which is a way of keeping workers, who can be restored to full-time work when the economy recovers, connected to the firm.

Finally, a note on the NIPA revisions: Prior to the revisions we had the puzzle that unemployment seemed too high given the decline in real output, which suggested that maybe there was a more-strenuous-than-normal effort to get rid of workers and to reduce staffing. With the NIPA revisions, Okun's law is looking better; again, it looks as though we are fitting a more normal cyclical pattern. So there is a lot of uncertainty here, and I find it fully plausible that the NAIRU will be a bit higher than it has been in the past. But in looking at that issue, I don't think we should overstate the differences between this recession and at least the last two recessions.

By the way, there was an interesting interrelation between the two issues I talked about—the consumer response and the NAIRU—which was, in fact, captured in the staff's "labor market damage" scenario. They assumed in their simulation that consumers understood that the NAIRU was higher and that, therefore, employment, growth, and output will be lower in the future. That feeds back on their consumption decisions in a permanent income sense, and as a result, the simulation actually showed bigger effects on GDP than it did on inflation, contrary to your simple intuition about what the NAIRU would do. I think that is an open question. If the NAIRU is larger and we around this table are not sure, are consumers better able to assess that than we are? That may turn out to be an interesting question as we see what connections there are between the potential of the economy, on the one hand, and consumer behavior, on the other hand.

I don't have much to add to what has been said about inflation. I think we have to wait and see how the gap story works. I agree with President Plosser that in principle it depends a lot on the source of the gap, although I do think that aggregate demand has been very important in this particular episode. We did work very hard, all of us, during the intermeeting period to try to

communicate our exit strategy and our resolve to defend price stability. We should continue to do that, and I hope that will be constructive going forward. So those are my comments. Brian, if you will, we can just turn now to the policy alternative.

MR. MADIGAN.<sup>2</sup> Thank you, Mr. Chairman. I'll be referring to the package labeled "Material for Briefing on Monetary Policy Alternatives," which includes the same set of statements that was distributed earlier this week. Although the economic outlook has changed only gradually on balance, the economic and financial situation has improved significantly since early spring. The economic downturn has abated considerably, with activity apparently now in the process of leveling off; financial markets display fewer strains and have become much more supportive of growth; and downside risks to the economy seem to have diminished appreciably. Still, the outlook continues to be weak, with the staff, many private forecasters, and Committee participants projecting a subpar recovery and slow progress in reducing unemployment. Meanwhile, inflation has been subdued, but not as low as might have been expected given the substantial resource slack that has developed. Moreover, concerns persist about the possible effects of unprecedented monetary and fiscal stimulus on inflation. Depending on your assessment and weighting of the risks, you might consider a substantial range of policy adjustments to be appropriate.

In addition to this broad economic backdrop, the calendar itself may be a factor in the Committee's consideration of its options today. The Treasury purchase program is scheduled to come to an end in September, and the agency and MBS programs are due to expire at year-end. Given these impending expirations, the Committee would seem to have reached a key decision point at this meeting. In particular, an important part of your deliberations today and presumably at your September meeting will be whether to allow the existing programs to expire, to let them reach their existing limits, or to extend and expand them. Against that background, the Bluebook presented four policy alternatives: A, B, C, and a variant of alternative B, labeled B'. In addition, on Monday we provided another version of alternative B, labeled alternative B (revised), for your consideration.

The staff forecast and the analytical approaches summarized in the "Monetary Policy Strategies" section of the Bluebook continue to suggest that a near-zero federal funds rate will remain appropriate for some time. Consistent with that view, each of the alternatives maintains the existing 0 to ¼ percent target range for the federal funds rate. The alternatives differ primarily in their options for large-scale asset purchases and in their guidance about the federal funds rate going forward.

Under alternative A, page 2, the Committee would expand its purchases of Treasury securities to \$450 billion. The Committee would also indicate its expectation that it will purchase the full \$1.25 trillion of agency mortgage-backed securities while continuing to state that purchases of agency debt will total "up to"

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<sup>2</sup> The materials used by Mr. Madigan are appended to this transcript (appendix 2).

\$200 billion, thus implicitly allowing for a likely shortfall in this program. The time frame for Treasury purchases would be extended by three months to year-end.

The Committee might be motivated to adopt alternative A if, like the staff, it continues to expect a comparatively slow economic recovery, with high levels of resource slack persisting for several years and inflation falling to rates below those that Committee participants see as most consistent with the Federal Reserve's dual mandate. Based on our reading of market reactions to previous announcements of changes to LSAP quantities, we estimate that the \$150 billion expansion in Treasury purchases would likely reduce longer-term interest rates by 10 to 20 basis points. In turn, we estimate that a reduction in longer-term rates of this magnitude would lower the unemployment rate two years ahead by 0.1 to 0.2 percentage point. However, these estimates are subject to considerable error, in part because it is difficult to tell whether worries among some market participants about monetization of the debt could be exacerbated by the expansion in Treasury purchases.

If members are also concerned that market participants may be pricing in a much earlier shift toward monetary policy tightening than currently seems likely and that these expectations are resulting in financial conditions that are tighter than appropriate, the Committee could consider sending a more explicit signal about its expectations for the path of policy. In particular, as shown at the end of the third paragraph of alternative A, the Committee could indicate that “economic conditions are likely to warrant maintaining the 0 to ¼ percent target range for the federal funds rate at least through mid-2010.” This statement would provide a more specific time frame than indicated by the current “extended period” phrase, and it would also be more explicit about the trajectory of rates than the current “exceptionally low levels of the federal funds rate.”

If the Committee broadly concurs with the staff forecast but judges that the costs of expanding LSAPs—such as potential difficulties in tightening policy down the road or possible adverse effects on inflation expectations—would likely exceed the benefits, it might opt for one of the versions of alternative B. Under the Bluebook version of alternative B, page 3, the Committee would essentially maintain the current limits of its large-scale asset purchases. However, the statement would indicate that the Committee will gradually slow its purchases of Treasuries in order “to promote a smooth transition in markets” and, to allow time for that transition, will extend the period for completing these purchases through October.

Under alternative B, the Committee would not specify its plans today for exiting from its MBS and agency debt programs. Although Desk and Board staff members recommend tapering those purchases as they are brought to a close, the MBS and agency debt programs are not scheduled to expire until year-end. Thus the Committee might conclude that it is not yet necessary to spell out its exit strategy for these programs and may see silence on this point as helping to preserve optionality over coming weeks to increase these purchases if economic or financial conditions unexpectedly deteriorate. However, the Committee would probably wish to decide

and announce no later than its September 22-23 meeting whether and how to wind down its MBS and agency programs. If it were so inclined, the Committee could announce at its September meeting that it was tapering the current program of MBS and agency purchases into the first quarter of next year. Such an approach would be consistent with the recommendations in the Desk's memo.

The language of alternative B would suggest that the Committee was unlikely to resume purchases of Treasury securities absent very unexpected developments. Should the Committee instead wish to preserve significantly greater scope for restarting Treasury purchases in coming months, it might choose instead to adopt the language of alternative B', page 4. Under this variant, the statement would note explicitly that the Committee "is prepared to consider resuming its purchases of Treasury securities in light of the evolving economic outlook and conditions in financial markets." Like B, alternative B' would preserve flexibility with respect to possible changes in the agency debt and MBS programs.

Alternative B (revised), on page 5, incorporates several changes from the draft of B in the Bluebook. First, to avoid a possible implication that the inventory correction is close to completion, the third sentence has been revised to indicate that businesses "are making progress" in bringing inventory stocks into better alignment with sales, rather than "have made progress." Second, on further consideration it seemed appropriate to characterize financial market conditions as having improved "further" rather than just "somewhat further." Finally, changes to the third paragraph would preserve the option of resuming Treasury purchases but use language that is less explicit than that in B'. In particular, the penultimate sentence would indicate that the Committee will continue to evaluate the timing and overall amounts of its purchases of securities generally, not just those of agency debt and MBS. Overall, alternative B (revised) would maintain significant flexibility for the Committee to change its purchase strategy in either direction.

Market participants generally appear to expect an announcement along the lines of the various versions of Alternative B, and any market reaction seems likely to be relatively modest. If anything, market rates might move up a little as investors would be confronted with the reality that the Committee's asset purchases were now being wound down.

Under alternative C, page 6, the Committee would begin to lower the degree of monetary policy stimulus, partly by reducing its large-scale asset purchases and partly by revising its forward rate guidance. Members might be attracted to this alternative if they were more optimistic than the staff about the likely strength of the recovery or if they were otherwise concerned that inflationary pressures could be greater or build more quickly than expected by the staff. The latter concerns could reflect a view that the influence of slack on price pressures is likely to be smaller than the staff anticipates, perhaps because you judge that financial turmoil is restraining the economy's potential by more than allowed for in the Greenbook projection. Alternatively, you may worry that the high current degree of monetary

accommodation, if sustained much longer, could spur inflation through any of a variety of channels—for example, by leading to an unmooring of inflation expectations. Such concerns might have been amplified, for instance, by the recent nearly ½ percentage point increase in five-year-forward inflation compensation.

Under alternative C, the Committee would state that “in view of the improved economic outlook,” it “now expects that its purchases of agency mortgage-backed securities (MBS) and agency debt will cumulate to about \$1 trillion and about \$150 billion, respectively, somewhat less than the previously announced maximum amounts.” The Committee would also indicate that, with its purchases of Treasuries well along toward completion, it anticipates buying the full amount of \$300 billion. As in the B alternatives, the Treasury purchases would be extended through October, thus encompassing a tapering strategy, and the reduced purchases of agency debt and MBS would permit those transactions to be tapered over the balance of the year. The announcement would also note that the Committee now expected that it would maintain the current 0 to ¼ percent range “at least through the end of this year” rather than “for an extended period,” which would likely be seen as a weaker policy commitment.

Overall, the combination of reduced asset purchases and a signal that policy tightening might begin soon after the turn of the year would represent a considerable surprise to investors and probably would cause quite a sizable market reaction. A reduction in total asset purchases—apart perhaps from a small undershoot in the agency debt program—is not expected by the market, and thus the announcement of these reductions would likely prompt a noticeable backup in market interest rates—perhaps 20 to 25 basis points on MBS rates and 10 to 15 basis points on Treasuries from the supply effects alone. Those increases would be reinforced by the revision to the Committee’s forward rate guidance, as that change would probably be seen as a signal that the Committee now anticipates that it might begin tightening policy early next year. Although market participants currently see some chance of such an outcome, most appear to expect policy tightening to commence no sooner than mid-2010 and probably later. The decision to combine the revised expectations for the funds rate with the reduced size of asset purchases might be seen as reinforcing the message that the Committee clearly wants to move away from its accommodative policy stance, and hence this announcement would probably lead to a significant increase in yields on instruments with terms of six months or more.

Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you, Brian. Are there questions for Brian? Seeing none, we can begin our go-round with President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. I support the policy described in alternative B, much for the reasons laid out in the Bluebook and as Brian just explained in his

lead-in. The economic story in my view is unfolding close to my expectations, and negative deviations from this outlook might justify an increment of stimulus as detailed in alternative A, but I don't see such deviations developing quite yet. At the same time, as noted in the earlier go-round, I view the economy as remaining in a fragile condition, so I think the reduction in stimulus laid out in alternative C is premature.

I support the language in alternative B (revised). I think it best serves us in remaining flexible and keeping our options open. And I don't favor the language "prepared to consider" in alternative B'. In our deliberations, we translated this subtly suggestive language into Southern. In Southern it would come out "fixin' to ponder." [Laughter] If you detect a little sarcasm in that, that was my view of the "prepared to consider" language.

I do support the extension of TALF. I favor this. As I mentioned in my economic go-round discussion, we had a long conversation with the American Securitization Forum, and the take-away from that conversation convinced me that the securitization sector is extremely vital to the financial system. Its recovery is important, and it continues to need help. I think it does raise the question, in terms of exit, of whether we will have to extend the TALF further in order to continue that support, particularly for CMBS, beyond June 1 of next year. So at this time, I think it is sensible to extend the TALF. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. Financial market conditions have indeed improved, and there is increased evidence that the economy has bottomed out with all of the mixed signals that turning points generally experience and, therefore, it is poised to grow somewhat in the second half of the year. Based on these developments in the outlook, I see no compelling reason to increase our purchases of long-term assets. Indeed, I would prefer that we

cut back the scale of our MBS purchases somewhat. Our current rate of purchase is outstripping the issuance, and the Fed's share of that market is significant. We are potentially crowding out private investors and risk preventing the healing process from progressing and, in doing so, perhaps permanently affecting the functioning of this important market.

Thus, I am going to favor beginning to taper our rate of purchases of MBS immediately. Doing so would have two primary benefits. It would allow us to better gauge whether private financial intermediation in MBS is improving and thus allow us to recalibrate our total asset purchases based on those additional data. If the experience is good, we may not choose to reach the maximum we indicated—that is, the \$1.25 billion. If we have concerns, we can always extend the purchases into next year. Given the increased stability in residential real estate markets and the improvements in intermediation in some other MBS markets, my expectation is that the MBS market will improve and that we will be able to pull back.

I welcomed yesterday's discussion of the tools we will use to tighten policy when the time comes. Improving the efficiency of interest on excess reserves is an important avenue. But given the size of our balance sheet, as I indicated yesterday, I wouldn't want to rely entirely on just this. I think we need to discuss whether or not we are prepared to sell assets, even if it means taking losses on our balance sheet, should the need arise. I for one would want to do so if our price stability goals required it. Another element that would help our efforts in this regard to maintain price stability is to continue to pursue our efforts to implement inflation targeting. I appreciate the difficult political environment we are in, but I hope we don't lose sight of that initiative.

As I have stated in the past, I think the language in our statement should be modified with a view toward our eventual exit from the zero bound. That means trying to find a way to

extricate ourselves from the current exceptionally low levels of the federal funds rate for extended periods. At some point, we will have to move away from the “extended” language. I believe we should be preparing ourselves and the markets for that eventuality. My preference would be to say that the Committee will maintain the target range for the federal funds rate at zero to ¼ percent and anticipates that economic conditions will likely warrant low levels of the funds rate for a period of time. Just drop “extended.”

The options in alternatives A and C are, however, worse than the current language in my view. At least the use of “extended period” can be interpreted as a state-contingent or a state-dependent context. I think that replacing state-contingent language with time-dependent language is misguided for a number of reasons, not the least of which is that we actually make policy on a state-contingent basis. Tying ourselves to a time table, given the tremendous uncertainty surrounding the future economic conditions, I believe is not wise. In general, I would prefer alternative C, without the time-dependent language because it scales back our asset purchases.

I would be comfortable, though, with alternative B or B (revised) if we indicate that we will immediately begin to taper the pace of MBS purchases without necessarily committing to an end amount or an end date. We have already said that we will go to \$1.25 trillion, yet we may not want to get there. We don’t have to decide that yet. But reducing the pace immediately would give us some flexibility to allow the private markets to gradually reenter this market and would let us reemphasize that policy decisions are in fact state-dependent. We might want to stop the agency debt purchases altogether, given the size of that market. But the amount is not very significant, so I don’t feel terribly strongly about that. Thus my preference would be to replace the sentence regarding MBS with something very simple like “the Desk is authorized to

purchase up to \$200 billion in household-related agency debt and up to \$1.25 trillion of agency MBS. The Desk is expected to gradually slow the pace of purchases of these securities as markets improve.”

Finally, Mr. Chairman, I think we must be very careful in our interpretation of recent declines in inflation. A tremendous run-up in oil prices in 2007–08 had both a significant effect on headline inflation and, to some degree, a pass-through into core inflation. We are fortunate that expectations remained well anchored during that period, and we were helped when oil prices made a sudden, dramatic reversal and declined. I think this oil price decline accounts for much of what we have seen this year in the decline in inflation, though expectations have been remarkably stable throughout this period, which is a very good sign. Apparently, the markets are looking through the large relative price changes, both in the run-up as well as the come-back-again. So I think we must be careful not to attribute inflation to last year’s oil prices and then attribute the reduction in inflation this year or the risk of persistent deflation to output gaps. That is my view. Those are two sides of the same coin. We will learn more, I think, about underlying inflation pressures, or lack thereof, in coming quarters as we have a more stable period of oil prices, so that it is not jerking around both headline and core inflation. Thank you very much, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. I am thinking about what President Plosser just said. I haven’t changed my hawkish feathers, but I don’t want to be anybody’s pigeon. I think we have to be cognizant of what is actually happening in the microeconomic sector. Yesterday I spoke of post-traumatic slack syndrome, and I want to expand slightly upon that to explain why I am in favor of alternative B. On the run-up side, which was only a year ago, what business women and men did

was to tighten the cost of goods sold. They were ferociously driven by the fact that everything under their control was accelerating in price. Now that they cannot grow their top lines, they are continuing that process. I will give you an example. If you look at the spending pulse data that is compiled by MasterCard—and this is not yet public to my knowledge, because it goes until the end of July—and you look at the airline industry, the spending pulse data will tell you that revenues for airlines were up 1.6 percent year over year in July. Airfares were down 14 percent. What accounts for the difference? A 48 percent increase in transactions. They are nickel and diming everybody on baggage, what you pay for food, et cetera, et cetera, and that is how they have made up the shortfall. You can see this also roll over into the way small business suppliers are being treated. In my conversations with the CEO of AT&T, he told me that he listens in to their small business call center. Fifty percent of the current calls are women and men in small businesses begging to have their phone bills reduced by at least half. Bad debts are rising, and they have other pressures operating upon them.

My point is this: We are likely to have significant slack for some time. We are unlikely to see cap-ex grow, as I mentioned earlier, for some time. And, yes, Mr. Chairman, we have to be careful not to make assumptions that are somehow different from those in previous recoveries. But I think that, on a microeconomic level, the shock that business women and men have gone through does condition their response and is likely to lead to an additional lag in cap-ex and give pause to hiring new workers for a longer period than we would like, particularly in the globalized environment in which we live and which in previous recessions didn't exist to the extent we have today. So we know that in the short term, for several quarters at least, slack does have an effect on price movements and inflation. Long term, we know from Milton Friedman and others that sustained inflation is always a monetary phenomenon.

Therefore, I think it is important that we recognize reality. We are likely to have a snapback here. It may be somewhat frisky in the short term, assisted by inventory corrections, as you mentioned, and more-felicitous market conditions, such as have been described at the table. The longer-term outlook is still somewhat tenuous, so we have to take account of that. We also have to take account of the still-palpable concern that we may or may not be willing to pull the trigger. Mind you, I come from a state where even the former Vice President of the United States did not hesitate to pull the trigger.

I think all of us have made an effort—in addition to the tools laid out—to make it clear that we are not going to be hesitant. Therefore, I think it is very important that we signal clearly that we are not going to buy Treasuries beyond the number that we mentioned. I was against it in the beginning. I am still against it. I am happy to see it die. I think it shows that we have resolve. That, combined with the statement that, if I understood correctly, you will issue on Thursday at the Board, that we will—and I am quoting you, Mr. Chairman—“suspend consideration of additional asset classes” while we extend the timeline to March 31. To me that is sufficient to indicate that, indeed, we have the resolve to do what we are going to do. At the same time, it doesn’t cut off the salutary effects of what I think we are doing to offset the forces that I just described.

So I would favor alternative B. I do not favor alternative B’ or B (revised). To me, those are like St. Augustine’s prayer, “O Lord, help me to be pure, but not yet.” I think we should proceed to show our resolve. Alternative B does it, and it also reflects the reality of the current economic circumstances. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Is the coffee ready, do you think? [Laughter]  
All right. It is 10:30. Why don’t we take a 20-minute break.

[Coffee break]

CHAIRMAN BERNANKE. Okay. Why don't we recommence. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. The baseline forecast has inflation too low and unemployment too high for the next several years. Such a forecast would almost surely imply further easing, if we had not hit the zero bound. The asset-purchase program has probably helped stabilize markets and lowered key interest rates compared with what they would have been without the purchases. However, the amount of macroeconomic stimulus produced to date by our large asset purchases has been smaller than I expected. In part, our implementation continues to favor market functioning over the broader macroeconomic goals of pushing rates down more aggressively to more rapidly achieve desired macroeconomic outcomes. Given current implementation strategies, I prefer alternative B (revised), though I remain concerned about the pace of a likely recovery and would favor more-aggressive measures if the economy were to falter or the risk of significant disinflation were to increase. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. I, too, favor alternative B (revised). Despite the series of positive surprises that President Stern pointed out yesterday, since March the center of gravity of expectations around this table is for a slow recovery—maybe a little faster than the Greenbook but not much—and damped inflation.

I think it is way too early to signal that we are thinking about withdrawing or cutting back on stimulus, so that leaves one with two consequences. I would keep the “extended period” language in there unchanged, and I would not curtail the large-scale asset-purchase programs. I would complete our announced purchases, with the possible exception of the agency securities, as that market is not liquid enough. I would taper off those mortgage-backed security purchases

over the fourth quarter and maybe into the first quarter to get up to the total, but I am okay with waiting until next meeting to tell the public what we are going to do there. I think the public is expecting something like alternative B (revised). They won't miss it, and we can do that next time. I am okay with winding up the Treasury purchase program. The economic situation is improving. There are some costs in terms of concerns about the exit strategy and our ability to keep inflation low. But I wouldn't rule out anything for the future, including resuming the purchases under certain circumstances.

I think we need to keep all our options open. As President Rosengren just said, the central tendency itself isn't a really satisfactory outcome relative to our legislative mandate. There is huge uncertainty. And while there is upside risk, there is still a lot of downside risk as well. And, there are nontrivial odds on whether we get a slow recovery, inflation begins to abate, unemployment rises, and bank losses mount further, and we are back into a kind of adverse feedback loop in the financial markets. I don't think that is what is going to happen, but I think there is some possibility. There are lots of things we need to think about if the economy starts going down and if we start getting into a deflationary situation. In that case, if we were to resume Treasury purchases while inflation was going down and while the economy was weakening, there wouldn't be adverse consequences for inflation expectations. So all of those things lead me to want to keep all of the options open, and I think alternative B (revised) does a good job of that. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Stern.

MR. STERN. Thank you, Mr. Chairman. I favor alternative B (revised). I think it has at least two important virtues. One is that it maintains our flexibility, and the second is that it is likely to do no harm. [Laughter] And I think these are both constructive.

I have given some serious thought to alternative C, but I really think it is premature to go to something like that. In that connection, I have been asking myself if it is possible that the economy will grow considerably more rapidly over the next six quarters than I currently expect and than is indicated in the Greenbook. And I just don't see the ingredients, the precursors, for something like that over that time frame. So I think alternative C is premature at this point.

In light of the discussion, I have also been thinking some more about the inflation situation and the inflation outlook. I have never been a particular enthusiast of the gap models, mainly because my impression is that you have to work pretty hard empirically to get a significant and stable relationship. I guess if you work hard enough you can, but I don't think it is overwhelming. The staff can correct me if I have mischaracterized that situation. On the other hand, it takes a model to beat a model, and I don't think we have another model in the short run. So we are kind of left with that. But in the longer run, I do think it pays to look at the monetary aggregates. In particular, if you look at M2, you see that—going back as far as 2003, anyway—growth there has been pretty moderate for a sustained period of time, something between 5 and 6 percent on average. It was certainly rapid last year. It was certainly rapid in the first quarter of this year, but it has tapered off again. I certainly don't see in the aggregate data a case for a sustained near-term burst of inflation—“near-term” meaning within the next six or eight quarters. You might say, “Well, the monetary base gives you a different picture”; but if the base were so reliable, we would have targeted it. I think we have learned that its relation to broader aggregates and to things like inflation just isn't very convincing even in the longer run. So I don't see a significant inflation threat in the near term. I do think, if you look at those M2 numbers, we may want to bring those down consistent with the price stability part of the dual

mandate eventually. But there doesn't seem to be any urgency to it, and I think the deceleration required isn't likely to be terribly great. Thank you.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. I think we need to be very careful going forward and watch the banking system very carefully as we continue with our large-scale asset-purchase program, as we discussed yesterday. I don't think of discussing cutting back on additional purchases as withdrawing stimulus so much as reducing the size of the planned increase in stimulus. Our understanding of just what will happen when we reach this discontinuity, when our asset holdings drive short-term liquidity facility usage to zero, is significant. And there is a chance that we may inadvertently at that time begin increasing our stimulus quite powerfully and more than we expect and more than we intend, just at a time when we are starting to consider withdrawing stimulus or reducing the amount of stimulus we provide in light of a strengthening economy.

I see some merit in alternative C for this reason—to hedge our bets somewhat with the economy turning and downside risk moderating. In addition, I think there are abundant reasons—at least, I see abundant reasons—to be deeply uncomfortable with large-scale holdings of agency mortgage-backed securities. There is a sense—and I think this was explicitly acknowledged in the design of the program—that it is impeding a structural transition to whatever is next by way of the configuration of our housing finance system. But it also involves some very serious political entanglements that I have alluded to before and that give me pause about our ability to flexibly shed that portfolio should we find the need to do so.

However, I am prepared at this meeting to support alternative B (revised) for now. Along with President Stern, I think it is a little premature to scale back our announcement about what

we intend with mortgage-backed securities. But, again, we need to be very watchful of what is going on in the banking system with reserve holdings, and it might be good to mount an effort to do that on a very systematic and granular basis. More broadly, with the economy turning, I think it is time to stop looking around for credit spreads to fix. As I said yesterday, our interventions in some segments of the credit market have reduced the supply of credit to other segments, and there are always going to be markets in which some spreads are elevated compared with the spreads that prevail in markets in which we have intervened. That is just always going to be the case from now on. Moreover, continuing to add market segments or to extend the life of programs beyond this point in the business cycle could be mistaken for an intention that we will extend our intervention deeper into the next expansion.

We have talked a lot about exit strategy. But when we have done so, it has been in the narrow sense of the capacity to manipulate our balance sheet and our policy tools in a way so as to raise the federal funds rate. Mr. Chairman, you have done a very good job of articulating our capacity and the tools we have for doing that and, I think, have allayed a lot of concerns in the public's mind about our ability. But one byproduct of the way in which we have done that is that some of the means of doing so allow for the continued coexistence of fairly broad and deep intervention—in other words, a large balance sheet and raising interest rates on reserves and so raising the funds rate without reducing our balance sheet.

That leaves open the broader question about our intervention in credit markets. I think the other sense of exit strategy that we need to ponder is the nature of our engagement in credit markets and what transition that is going to display over the next couple of years. I am assuming—I may be wrong as we haven't talked about this—that at some point in the expansion we will want it to be the case that we are no longer intervening in any market, even MBS. And I

think that communicating about that transition would be useful and thinking about it would be useful as well. We have intervened on the basis that emergencies in credit markets warrant protecting the economy from damage from credit market malfunctions. And when the economy recovers and is growing strongly, it seems to me that the compelling need for that will be diminished. On the other hand, it is not clear that we have articulated principles that would necessarily lead an observer to believe that in an expansion we wouldn't be intervening. I refer again to the list of pros and cons that we heard yesterday about agency ARMs that make it seem as if elevated credit spreads are a primary consideration for a lot of these programs. So I think it would be useful for us to think more broadly about the transition we intend to make from the current level of engagement and intervention in credit markets to whatever the sort of normalcy is beyond that. This sets aside what we want people to expect from us in the next recession, which is another problem as well and another set of issues we need to grapple with at some point. But, again, I can support alternative B (revised). Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. President Lacker, I think that there is pretty strong consensus that we do need to normalize and move out of special intervention as the economy recovers. And we have taken some steps in that direction, including letting one facility expire, reducing the size of others, and announcing this week that we are not going to add any categories to the TALF program. So I think we agree with your perspective on that.

MR. LACKER. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. President Yellen.

MS. YELLEN. Thank you, Mr. Chairman. I support the revised version of alternative B. I do want to emphasize, though, that I believe a strong case exists for further monetary stimulus. This case is amply demonstrated by the unconstrained optimal policy path in the Bluebook,

which shows the nominal federal funds rate continuing to ease over the next four quarters and reaching negative 6 percent. Moreover, even in the unlikely circumstance that we are lucky enough to get robust economic growth over the next few years, it will still be a long time before the economy is operating close to full employment. And I found it striking that in none of the alternative scenarios in the Greenbook, even including the most optimistic one, would the Committee need to raise interest rates this year or in 2010.

With regard to asset purchases, I would not argue for expanding our Treasury purchases. I think it would be unwise at this time. The bang for the buck from these purchases is probably pretty small, and our program has had some unfortunate costs. It appears to be contributing to the growing concern about high long-term inflation. Even though I don't favor raising our current target for Treasury purchases now, I consider it important that we avoid completely closing the door on future Treasury purchases. I would associate myself with Governor Kohn's comment that there could certainly come a time when the economic outlook worsens considerably. We shouldn't rule out that possibility, and further long-term Treasury purchases could, in that type of scenario, be needed to stimulate the economy, so we shouldn't rule out the use of that policy tool. The revised version of alternative B keeps the option open. I think the wording of the original version of B would be likely to be read as closing the door to future purchases, and I don't think we need the more explicit language in alternative B' that says that we are prepared to consider resuming purchases.

With respect to MBS and agency purchases, I am in favor of preserving our optionality, waiting to decide until closer to when the program comes to a conclusion in the same way that we did with Treasuries. Again, I wouldn't want to take anything off the table at this point. If we were to announce today either scaling back on the amounts we expect to purchase or announce

that we intend to end those programs, I think it would surprise markets and ratify expectations that it won't be too long before we start raising the funds rate.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. I favor a continued wait-and-see approach, which I think is best captured roughly by alternative B, the revised version. I would make some observations. The modest recovery in GDP is in progress, and the expected peak in the unemployment rate is six or more months away. The Greenbook and Bluebook measures of our policy stance suggest to me that they are near policy accommodation stances that close the resource gaps within three years. I know we could hope to do better, but I think we pushed our nontraditional policies pretty far, and the remaining fruit is hanging pretty high. I agree with President Stern when he says that sometimes there is just not a lot more that you can do or that you should consider doing.

I interpret the prospective resource slack that we are facing to be large, and this is going to restrain inflationary influences from economic improvements and low policy rates. I thought Governor Kohn did an excellent job of discussing the inflation prospects and walking us through inflation expectations and the resource gap and how they are interacting or how we have to take account of those. It does appear that inflation expectations have remained higher than one might have expected with this slack. That has been important, I think, for the evolution of inflation.

That said, we are in uncharted territory with respect to the enormous expansion of our balance sheet and the public's reaction to this, and so liquidity growth and historic-sized fiscal deficits as far as the eye can see are going to present a challenge at least from the public's expectations. The narrow measures of money that we would look to as very troubling are not yet

in the broader measures, and I think that that is an important part of what we would be paying attention to if we saw large inflationary expectations.

For me, our current setting of policy seems appropriately accommodative to balance these risks. Let's be patient and monitor the situation more. Until something breaks one way or the other, I would expect this type of policy outcome. When the situation clarifies, we should make the appropriate judgments. It could be that the downside risk appears and it is quite bad and we need to do something or the other way around. I do not see the need to signal an alternative B about future programs.

So alternative B, the revised version. I didn't see the tremendous value in mentioning tapering off for Treasuries, given the deep market that we have, but that doesn't seem to be expressed by others. So I am fine with that.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. I, too, support the revised version of alternative B. Given the large output gap that I see closing only slowly and an inflation rate projection that remains low over the forecast period, I am comfortable maintaining the current level of monetary stimulus. Market participants clearly recognize that our Treasury security purchases will cumulate to a level near the stated objective around the time of the next meeting. So it seems appropriate to recognize this in our statement today, to be more transparent about our intentions, and I think alternative B does that well. Also, as Brian mentioned, it is not necessary to specify at this meeting changes to our purchases of agency debt and mortgage-backed securities. So I prefer to wait until our September meeting to comment on those purchases. Like others, I believe that it is important to leave our options open, and the revised version of

alternative B gives us, I think, the appropriate flexibility that we need. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I also support alternative B, the revised version. I think the tapering ideas that have been expressed by the staff are fine, and I also think that we can think about tapering the MBS program at the next meeting. As you know, I have suggested growth rates instead of these flat, level amounts, which I find a bit arbitrary. They are still in this Bluebook with \$450 billion in alternative A. You may want to think about moving to very low growth rates for these programs. You know, a lot of people have expressed the idea about keeping the programs alive. You can move to very low growth rates, and I'll talk a little more about that in a minute. If we did that, we could react more easily if the data came in worse than expected and we wanted to again expand asset-purchase programs.

On policies to manage excess reserves, that sounds as though we're planning to rely a lot on our interest-on-reserves policy. I have a comment on that. I think it sounds expensive. It could be viewed as a large transfer to banks in an environment where that would be politically quite unpopular. As I understand it, the Congress opposed interest on reserves for decades exactly because of the revenue implications. So this is just a caution that it seems as though we are going down this path pretty rapidly and we are putting a lot of emphasis on interest on reserves as a way to manage the very extensive excess reserves that are in the system, and it could be viewed in an unflattering light.

President Stern made some comments about the monetary base, and because I have the last word and it's his last meeting, I'm going to comment on that. It is true that, if you run regressions over the last 25 years on the monetary base, you are not going to get very much. But

I just want to stress that we are in an absolutely unprecedented situation. We have more than doubled the size of the monetary base. I do not think you can rely on whatever those regressions said in the past as to what the outcomes of this experiment might be. So we have to be very careful in thinking about what the implications are going forward. Of course, it all has to do with, well, how would that ever get out into the money supply and so on, and what are future policies? How permanent is it, so on and so forth? How much slack is there in the economy? All of those things are important, but this is an unprecedented experiment in U.S. monetary policy.

Let me turn to communication for a minute. I take the lesson of the last 25 years in macroeconomics to be that it is important to communicate future policy partly because you care about the future but also partly because it really affects your equilibrium outcomes today. It informs the pricing today. We do not really have that for this asset-purchase program. I think we made some progress in talking about exit strategy, and I actually think that was pretty successful during the intermeeting period. But still, there is a lot of uncertainty about future policy, say, over the next two years and about what we would do.

I agree with President Yellen that, if we went with alternative B unrevised, it could be interpreted that the Fed goes on hold. We have said that we are not going to do any more asset purchases. According to the Greenbook, we are not going to raise the funds rate off zero for a long time. So we just go on hold for two years. I don't think that is really the intent of the Committee, and I would not want to lock us in that direction. As many people have said and I think Governor Tarullo said, you have a pretty high probability that you will get an outcome that isn't very desirable over the next two years. Then the question is what the Fed's reaction will be, and I think you have to keep the option open that you might extend the asset purchases at that

point. The market doesn't know what we will do; this Committee doesn't know what we will do. If we could reduce that uncertainty, that would help us a lot. I would like to make some progress toward a more systematic policy on asset purchases and more generally a systematic policy while we are at the zero bound.

Let me just make a couple more comments. Fixed dates for rates at zero—some of the language in these policy options says things like we will keep rates low until the end of the year or we will keep rates at zero until the middle of next year. I really prefer not to get into the particular dates for when we might raise rates. I think it does two things that we don't like. First of all, it de-emphasizes the state-contingent nature of optimal policy. Everything depends on the data. It depends on how the data on the economy come in. So I do not think that we should be saying, all of a sudden, that we are going to make it non-state contingent and that just at this certain date we are going to do something. Also, I think it sets up an expectation that we really will raise rates at that point, and we may not want to do that at that point. This is not in alternative B, but it is in the other alternatives. I think it is not something we want to get into in any of our alternatives.

Lastly, I agree with President Plosser and many others who have commented here concerning the narrative that slack alone will contain inflation pressures going forward, which is really reflected in paragraph 2 of our statement and has been there for a long time in alternative B. I think too much reliance on this view could lead to a policy mistake and a repeat of the 1970s experience. There are three problems with the output gap. One is the conceptual problems that were outlined by President Lacker. Another is empirical fit, as mentioned by President Stern. No matter how you do the measurement, it just doesn't help you that much in forecasting inflation. It helps a little, not much. And the third one, which has not been

mentioned, is that it is also inconsistent with a lot of our rhetoric about a bursting bubble. If you think that something went wrong and you had some housing bubble or some other kind of bubble and this thing collapsed on you, you can't be saying, well, we want to go back up to this bubble level of output. When you get into the discussions of potential output, bubbles are out of the picture, right? But when you're talking about the economy and the situation today, bubbles are a big part of the story. So that's another piece that I think is inconsistent with our current rhetoric about output gaps. Thank you very much, Mr. Chairman.

CHAIRMAN BERNANKE. Just a question about your comment on the base. Why wouldn't Japan be a precedent for this experiment?

MR. BULLARD. It is a great example to look at. I don't think theirs was that persistent, and so they didn't get that much inflation. Ours is looking pretty persistent.

CHAIRMAN BERNANKE. Okay. President Hoenig.

MR. HOENIG. Thank you, Mr. Chairman. Let me give the background on where I come out on this. That is, as I mentioned yesterday, the evidence is that we are at or near the bottom of this cycle. At least the evidence is pointing that way, and in that environment at this point, we obviously have excess capacity: railroads, 50 percent in use. That is to be expected. But I think as we look ahead, we are starting to see improvement, and that should continue and perhaps accelerate, given the fiscal and monetary policy that is in place. So it is not where we are; it is where we are going that matters importantly as we consider our choices. I am not suggesting here that we tighten or exit where we are from a current easing policy, but only that we, as President Lacker said, stop increasing our purchases or increasing our easing process and back off in that because we can't exit until we complete our entry into this, and I think it's time to complete that. We may not see inflation or asset bubbles now. I think that is clear. But the

more we pump into this balloon, the larger it will eventually be and the more difficult it will be to bring back down. And that is what I think we need to begin to think about if we are, in fact, recovering.

So my view is that we begin to signal that we are. I think that is perhaps what alternative B (revised) does. Although I would like to see us begin tapering immediately, I would be in favor of that alternative and that, as soon as possible, we stop purchasing assets and turn to the TAF and the primary credit facility as means of providing liquidity into the intermediation process or the banking industry and allow our economy to move more toward normality. So my immediate goal is to cease purchasing assets and cease growing our balance sheet or allow our balance sheet to begin to shrink normally. But the reality is that I think alternative B (revised) is the reasonable place to be at this point. Thank you.

CHAIRMAN BERNANKE. Thank you. Governor Warsh.

MR. WARSH. Thank you, Mr. Chairman. I, too, support alternative B as revised. Let me confine my remarks to the asset-purchase discussion in that alternative. First, with respect to the Treasury purchases, I think that the Treasury purchase experiment has been a testament to the strengths of this institution. I think we have had differences of opinion going back to discussions of last December on the merits of this program. We debated it, we all marshaled our arguments, and we all decided at least publicly to support this experiment. I think the stars have given us an opportunity to deftly exit the Treasury purchases. Alternative B as revised gives us the flexibility, if circumstances warrant, to hold hands yet again, but I'd consider the prospects of that to be quite unlikely. The data of the intermeeting months on the Treasury purchases, particularly given the question of fiscal sustainability coming from the other branch of government, have made this particularly problematic for us to undertake successfully. I do think

the benefits have been outweighed by the costs, but we do have an opportunity to end it in way that lives up to the commitment that we made some months ago but doesn't go beyond that. I think alternative B as revised also does provide that flexibility should the situation change.

On the tapering question that President Evans raised, my own sense is that it would not be necessary, if we had only Treasuries as part of our asset purchase, to go with the tapering. Even out of an abundance of caution I don't think that it would be necessary. The reason that I suspect it's a prudent move for us now is that it will be a signal to markets that, when we do undertake the mortgage-backed security discussion probably at our next meeting, they will have seen some bread crumbs as to how we could think about exiting or at least about cutting back on these. So all in all, I would favor the tapering approach, not because of Treasuries but because of the signaling effect on MBS.

On the mortgage-backed securities, as President Yellen suggested, I think that we should take advantage of the option value and defer our discussion on that. I would be interested in staff's thoughts in advance of that meeting as to what the net benefits are of our continued presence in that market. So while I do think there were marginal benefits, maybe even meaningful benefits, at the beginning of the MBS program, we are well past the point of diminishing returns on that. I look forward to a broader discussion come September.

CHAIRMAN BERNANKE. Thank you. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. Given my pessimism about credit availability and concern about the likelihood of alternative scenarios, I started thinking about, well, if they came to pass, what policy action might we take. My thoughts are probably further colored by the time that I have spent with the TALF and with the staff working on the TALF. But as I look at

the experience with the commercial paper facilities and the ABS markets, I do see signs that the markets outside of our purchases have improved.

Then as we looked at the RMBS for the TALF, it became clear that the problems in the private mortgage market were probably beyond our tools to repair. So although we have talked about a lot of market improvement, the only mortgage market now and for the foreseeable future is the government-supported market. And I see the very likely need to support the mortgage market at least through visibility of how the GSEs might be resolved and perhaps even through that transition, and I hope that we would see some signs of how the private mortgage market might actually reemerge before we withdraw support to that market.

So the MBS purchases in relation to the total outstanding and the originations right now are large, but it seems quite likely to me that we will need to extend the support, at least in time if not in total, well past March 2010. I don't see a similar need to expand Treasury purchases, and the tapering certainly prepares the way for a much bigger tapering job ahead with the MBS purchases. But I think we really do need to look at what we might need to do longer term on the mortgage market and when we announce what we are going to do on that. And I do support alternative B (revised).

CHAIRMAN BERNANKE. Thank you. Governor Tarullo.

MR. TARULLO. I support alternative B (revised) for a lot of the reasons a lot of you have stated to this point.

CHAIRMAN BERNANKE. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Mr. Chairman. First I want to make two brief comments, one on the dry tinder concept that we brought up at the last meeting and the other one on potential changes in the NAIRU. The reason I want to bring these up is that I think

they are both relevant in terms of our communication strategy and our ability, by consistent messaging, to keep inflation expectations well anchored. If we do not speak with a relatively consistent voice, I think we run risks in that dimension.

The last time the view was expressed that excess reserves sitting on banks' balance sheets are essentially dry tinder that could quickly fuel excessive credit creation and put the Fed behind the curve in terms of tightening monetary policy. I have to admit that, in terms of imagery, this concern does seem compelling. The banks are sitting on piles of money that could be used to extend credit on a moment's notice. However, I think this reasoning ignores a very, very important point. Based on how monetary policies have been conducted for the past several decades, banks have always had the ability to expand credit whenever they like. They don't need a pile of dry tinder in the form of excess reserves to do so. That's because the Fed has committed itself to supply sufficient reserves to keep the federal funds rate at its target. If banks want to expand credit and that drives up the demand for reserves, the Fed automatically meets that demand in its conduct of monetary policy. So in terms of the ability of banks to expand credit rapidly, it makes no difference whether they have lots of excess reserves or not. I think it is an important point.

In terms of the NAIRU, there has been some discussion that the NAIRU may have moved up. I certainly do not dispute that idea and its implications. But I think there is an implication that is sort of implied by some that this might be a reason to exit from our current stance of monetary policy somewhat earlier than otherwise. I think we need to be careful about exaggerating the potential import of the possibility of a somewhat higher NAIRU. The key question in a world where the unemployment rate is currently 9.4 percent and likely to rise higher is how much the NAIRU has increased. To get an idea of what might be in the feasible

set of outcomes, we looked at the CBO's estimates of the NAIRU, which extend back 55 years. I am not saying that the CBO's estimates of the NAIRU are perfect, but they are an interesting starting point. We found that the largest three-year increase in their estimate of the NAIRU over this 55-year period was 0.3 percentage point, and at its highest point in this fifty-five-year history, the NAIRU was still below 6½ percent.

So what do I make of this? Well, it implies to me that, even if one thinks that the NAIRU has increased, it is implausible to think that it has increased sufficiently to change the story meaningfully over the next couple of years. We have a large output gap that is going to take a long time to close. Thus, arguing that the NAIRU may be higher is likely just to confuse market participants about the issue at hand unless we can credibly claim that the NAIRU has increased so much that we are going to hit this very, very quickly. I do not think that claim is plausible. So I would be counseling people not to make this argument because it is going to confuse people about how quickly we are going to exit from our monetary policy regime.

With respect to the statement, I favor alternative B as revised. I think the case for expanding Treasury securities is very weak—first, given the improvement in financial conditions and the economic outlook. When we did this in March, it was with considerable reluctance, I think, but it was because the outlook was really quite grim, and the outlook has improved significantly since then. Second, there are lots of uncertainties about what this would mean for inflation expectations, and that is the part of the Treasury purchase program that was always wrought with some peril, and we found out that there was really some risk associated with that in terms of that dimension. Third, market participants do not expect us to expand it. So I think that we should stick with alternative B as revised, where we basically say we're bringing it to an end with the taper. I think Governor Warsh is absolutely correct that the tapering is not necessary for

Treasuries but it is a good signaling device to imply what we are likely to do with the other programs.

Financial conditions have improved considerably since the last meeting. I think that is important. It means that abstracting from other factors, such as the GDP revisions, the optimal unconstrained funds rate is considerably less negative now than it was at the last meeting. But it still remains below the zero bound by most measures at a relatively high degree of confidence. That suggests to me that a steady-as-she-goes policy for the time being is the right one. That means keeping the pre-commitment of an extended period in place and completing the purchase programs that we had committed to earlier. I have a strong presumption that, as we go forward, we are going to finish the agency MBS program. On the agency debt program, I am sort of agnostic. I don't think it is really that important whether we stop at \$150 billion or we go all the way to \$200 billion. But with the agency MBS program, the market has a strong presumption that we are going to do the whole thing, and I would hope at the next meeting, assuming that we are still on the same economic trajectory that we think we are going to be on, that we would commit to doing the whole thing at that meeting. Thank you.

CHAIRMAN BERNANKE. Thank you. Thank you all. If you recall last March where we were and our concerns about both the financial system and the economy, we were extremely aggressive; and whether by dumb luck or prescience or whatever, we seem to have hit the sweet spot. The economy is improving. The financial markets are improving, and I see little reason to increase stimulus at this point. At the same time, obviously there is still a lot of uncertainty about consumption, final demand, and the strength of recovery, and I think I agree with the Vice Chairman that, by any reasonable calculation at least at this point, there still is a considerable amount of excess capacity in the economy. So on that basis there is not much case either for

pulling back on stimulus. At the risk of sounding Nixonian, I think we should stay the course on our policy and continue along the lines we have been following since March.

I would agree with the majority of the participants in proposing that we go with the revised version of alternative B. There was little discussion this time of the descriptive paragraphs, maybe again because we hit the sweet spot—I do not know—but the output description in particular is a little more upbeat and, I think, conveys the sense that there has been noticeable improvement even though there are still some important barriers to full recovery.

I think that there is considerable agreement around the table that we should allow the Treasury program to expire as previously signaled. I think the revised version of alternative B will be read primarily as saying that the FOMC is allowing this program to expire. There is a bit of flexibility in the sense that we do not completely rule out a future program, and as Governor Kohn has pointed out, there could be contingencies in which we might want to consider a future program. But I think it will be read mostly as just a bit of prudence on the part of the Committee to leave that potential option open for the future. Again, I think the primary signal will be that the program is being allowed to expire.

I agree with the Vice Chairman that the tapering aspect is useful as a signal. It is going to essentially provide a bit of foreshadowing to the markets about how we may exit from the larger agency program. We discussed today and I gave a lot of thought to announcing a tapering of the agency programs today as well. I found it very difficult to write that in a way that didn't sound as though we were conclusively ending those programs or going to the full extent. What I would propose—along the lines of President Stern's parting advice, which is always wise—is to do no harm. I propose that we have at the next meeting a robust discussion of exactly how we want to exit or proceed with the agency MBS program. And long the lines of what President Bullard

said, one possibility would be to extend it—to reduce the rate of purchase and extend it out. It might be more effective in the sense that we would not be dominating the market as much but maybe have a longer horizon.

Those are the kinds of issues that I think we ought to talk about in the next meeting. On that basis, I think it is a bit wiser to leave the status quo on the agencies for this meeting, and that is also consistent with Brian Sack's memo, which suggests that we do not yet have to begin the tapering process in the agency markets. So my recommendation would be that we allow the Treasury program to expire and that we adopt the revised version of alternative B. And before we go further, let me just turn to Brian Madigan for a moment because there was an issue he would like to highlight on the directive related to B.

MR. MADIGAN. Yes, Mr. Chairman. I wanted to note two things for the Committee on the directive for B, which is on page 60 of the Bluebook. First of all, of course, the directive would indicate now that the Desk is expected to purchase about \$300 billion of Treasury securities rather than "up to," and it includes language indicating that the Desk is to gradually slow the pace of purchases. The other point I want to make is that the following sentence is a little modified from the corresponding version in the previous directive. The previous directive and the past few directives have indicated that the Committee anticipates that the combination of outright purchases and various liquidity facilities outstanding will cause the size of the Fed's balance sheet to expand significantly in coming months. With the liquidity facilities coming down pretty significantly, I think that it doesn't make sense to continue to describe them as causing an increase in the balance sheet. So we have suggested deleting the reference in that sentence to the liquidity facilities.

CHAIRMAN BERNANKE. Question?

MR. LACKER. Do we anticipate our purchases to expand the balance sheet significantly in coming months in view of recent history?

MR. MADIGAN. Well, certainly we expect the purchases to continue to add to the balance sheet. That is laid out in our projections in the Bluebook.

MR. LACKER. Haven't we missed on our liquidity facility forecast?

CHAIRMAN BERNANKE. As you point out, President Lacker, we are getting close to the zero bound on that side. So it looks like a good bet that we will continue to see an increase in the overall balance.

MR. LACKER. So is it in the intermeeting period? In the intermeeting period do we expect to drive this down to zero and on that basis? Is that why we are expecting the balance sheet to expand?

CHAIRMAN BERNANKE. Brian, do you have a reply?

MR. MADIGAN. This is the monetary base that I am referring to, but as shown on page 51 of the Bluebook, our baseline projections show growth of 97 percent in August, 116 percent in September, and 60 percent in October. So there is still pretty significant growth overall.

CHAIRMAN BERNANKE. Any other questions or comments? Yes.

MR. LACKER. Excuse me, I just want to be clear about the question. You have described the forecasting procedure that goes program by program and neglects any consideration of the demand for reserves. And we keep missing on that basis in a way that suggests that the demand for reserves is driving demand for liquidity facilities, not the other way around. So I just raise the question. That is why I was asking. Mr. Chairman, you called for a robust discussion next meeting of the MBS program; I think that is great. This consideration,

which we have been discussing, deserves some attention there, too. What staff work could be done on that might be useful as well.

CHAIRMAN BERNANKE. Well, the staff will look at that. I think it is an interesting question, how much is pure substitution and how much the general improvements in markets are changing demand as well. Any other questions or comments either for me or for Brian? Seeing none, Debbie, would you call the roll?

MS. DANKER. Yes. This vote encompasses the language of alternative B (revised) for the August FOMC statement and the directive from page 60 of the Bluebook.

Chairman Bernanke	Yes
Vice Chairman Dudley	Yes
Governor Duke	Yes
President Evans	Yes
Governor Kohn	Yes
President Lacker	Yes
President Lockhart	Yes
Governor Tarullo	Yes
Governor Warsh	Yes
President Yellen	Yes

CHAIRMAN BERNANKE. Thank you very much. The next meeting is Tuesday and Wednesday, September 22 and 23. There is a buffet lunch available. There will be no further business or presentations. So if you are able to stay, please do, and I guess we will be seeing each other next in Jackson Hole. Thank you very much. The meeting is adjourned.

END OF MEETING