

**Meeting of the Federal Open Market Committee on
April 30–May 1, 2013**

A meeting of the Federal Open Market Committee was held in the offices of the Board of Governors of the Federal Reserve System in Washington, D.C., on Tuesday, April 30, 2013, at 2:00 p.m. and continued on Wednesday, May 1, 2013, at 9:00 a.m. Those present were the following:

Ben Bernanke, Chairman
William C. Dudley, Vice Chairman
James Bullard
Elizabeth Duke
Charles L. Evans
Esther L. George
Jerome H. Powell
Sarah Bloom Raskin
Eric Rosengren
Jeremy C. Stein
Daniel K. Tarullo
Janet L. Yellen

Christine Cumming, Richard W. Fisher, Narayana Kocherlakota, Sandra Pianalto, and Charles I. Plosser, Alternate Members of the Federal Open Market Committee

Jeffrey M. Lacker, Dennis P. Lockhart, and John C. Williams, Presidents of the Federal Reserve Banks of Richmond, Atlanta, and San Francisco, respectively

Deborah J. Danker, Deputy Secretary
Matthew M. Luecke, Assistant Secretary
David W. Skidmore, Assistant Secretary
Michelle A. Smith, Assistant Secretary
Scott G. Alvarez, General Counsel
Steven B. Kamin, Economist
David W. Wilcox, Economist

Thomas A. Connors, Troy Davig, Michael P. Leahy, Stephen A. Meyer, David Reifschneider, Daniel G. Sullivan, and William Wascher, Associate Economists

Simon Potter, Manager, System Open Market Account

Michael S. Gibson, Director, Division of Banking Supervision and Regulation, Board of Governors

James A. Clouse and William Nelson, Deputy Directors, Division of Monetary Affairs, Board of Governors

Andreas Lehnert, Deputy Director, Office of Financial Stability Policy and Research, Board of Governors

Jon W. Faust, Special Adviser to the Board, Office of Board Members, Board of Governors

Linda Robertson, Assistant to the Board, Office of Board Members, Board of Governors

Seth B. Carpenter, Senior Associate Director, Division of Monetary Affairs, Board of Governors

Joyce K. Zickler, Senior Adviser, Division of Monetary Affairs, Board of Governors

Michael T. Kiley and Thomas Laubach, Associate Directors, Division of Research and Statistics, Board of Governors

David Bowman, Deputy Associate Director, Division of International Finance, Board of Governors

Steven A. Sharpe and John J. Stevens, Assistant Directors, Division of Research and Statistics, Board of Governors; Min Wei, Assistant Director, Division of Monetary Affairs, Board of Governors

Stefania D'Amico, Senior Economist, Division of Monetary Affairs, Board of Governors

Randall A. Williams, Records Project Manager, Division of Monetary Affairs, Board of Governors

Kenneth C. Montgomery, First Vice President, Federal Reserve Bank of Boston

David Altig, Jeff Fuhrer, and Loretta J. Mester, Executive Vice Presidents, Federal Reserve Banks of Atlanta, Boston, and Philadelphia, respectively

Lorie K. Logan and Mark E. Schweitzer, Senior Vice Presidents, Federal Reserve Banks of New York and Cleveland, respectively

Fred Furlong, Group Vice President, Federal Reserve Bank of San Francisco

Evan F. Koenig and David C. Wheelock, Vice Presidents, Federal Reserve Banks of Dallas and St. Louis, respectively

Robert L. Hetzel and Andrea Tambalotti, Senior Economists, Federal Reserve Banks of Richmond and New York, respectively

Jonathan Heathcote, Senior Research Economist, Federal Reserve Bank of Minneapolis

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April 30 Session

CHAIRMAN BERNANKE. Good afternoon, everybody. Our first item today is “Financial Developments and Open Market Operations.” Let me call on Simon Potter.

MR. POTTER.¹ Thank you, Mr. Chairman. Over the intermeeting period, investors noted a broad weakening of global economic data and increased prospects for effective global policy accommodation that led, on balance, to an easing in financial conditions. In the United States, investors appeared to conclude that asset purchases could continue for a somewhat longer period of time and accumulate to a somewhat larger size. This, in combination with the Bank of Japan’s (BOJ) aggressive easing program and shifting prospects for additional accommodation in the euro area, led to a sharp decline in U.S. Treasury and foreign sovereign bond yields. Meanwhile, prices of domestic risk assets were modestly higher, while the broad dollar index was little changed despite significant appreciation against the yen.

Exhibit 1 begins with trends in advanced-economy equity markets and economic data. As seen in the upper-left panel, despite recent deterioration in economic data, G-10 equity markets were relatively resilient, supported by expectations that monetary policy will remain accommodative and that fiscal policy in the euro area may be somewhat less restrictive. The variation in equity performance across G-10 countries appears linked, in part, to changes in policy stances and associated shifts in growth outlooks. Core euro-area equity indexes were mixed but little changed, though they rose in recent days on growing expectations for a rate cut by the European Central Bank (ECB). In the United States, recent weakness in economic data led to a modest increase in expectations for total Fed purchases, and the S&P 500 index was 2 percent higher over the period. Meanwhile, equity gains in Japan were particularly pronounced, with the TOPIX up over 11 percent in local currency terms in response to the BOJ’s new measures aimed at ending Japan’s persistent history of deflation. Specifically, the BOJ will now seek to achieve 2 percent inflation within two years by doubling the monetary base by the end of 2014, mainly through a sharp increase in purchases of longer-duration Japanese government bonds (JGBs).

Many investors saw further yen depreciation as a necessary condition for the BOJ to achieve its new price-stability target of 2 percent inflation introduced in January, and as seen in the upper-right panel, the yen has depreciated further against major currencies and Japan’s main export competitors since the program announcement.

The next two panels compare central bank balance sheets and domestic sovereign debt purchases to illustrate the significance of the BOJ’s shift in policy. The middle-left panel shows domestic securities portfolios in excess of currency for the Federal

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

Reserve, BOJ, ECB, and Bank of England (BOE), as a percent of GDP, at the end of 2012 and a projection for year-end 2014. The BOJ's announced purchases are projected to leave the central bank's holdings considerably above the level of currency in circulation, and above that projected for both the BOE's and Federal Reserve's holdings relative to currency.

The middle-right panel contrasts the maturity profile of central banks' sovereign debt portfolios relative to the overall market. While the SOMA portfolio's weighted average maturity—or WAM—is shorter than the BOE's, it is significantly above the WAM of the Treasury market as a whole. In contrast, BOJ purchases of JGBs have traditionally been of much shorter maturity than the overall JGB market. Under the BOJ's announced purchase plan, the WAM of its portfolio is projected to be close to the WAM of the overall JGB market by year-end 2014.

While investors were expecting some shift of purchases to longer-dated JGBs, the size of the shift was significantly larger than had been expected. As seen in the lower-left panel, yields on 10-year and 30-year JGBs initially declined 12 to 30 basis points. Subsequently, JGB yields have retraced, though, on net, 10-year and 30-year yields remain 15 to 30 basis points below their late-February levels, when expectations for longer-duration asset purchases began to firm. There is likely a range of contributing factors to the retracement, though it is difficult to quantify them or even rank their importance: It may reflect uncertainty about the appropriate level of rates under the new policy regime, given the size of purchases and the BOJ's stated intent of achieving 2 percent inflation. Since the new easing measures were introduced, 1-year inflation compensation 2 years forward derived from inflation swaps has risen by only 20 basis points and remains well below the new 2 percent objective. However, given modest trading activity, these and other market-based inflation measures might not accurately reflect a shift in inflation expectations.

The recent rise in JGB yields may also reflect market concerns about the smooth implementation of such sizable asset purchases. Initially, the BOJ announced that it would conduct purchases on just six days per month with minimal guidance on the maturity ranges of purchase operations. The small number of operations also implied very large operation sizes, given both the size of net new purchases and ongoing reinvestment.

Market participants have suggested that these operational parameters, along with the surprise on size, contributed to a significant deterioration in market functioning. Bid–asked spreads in the JGB market widened by many multiples of typical levels, and, as seen in the bottom-right panel, intraday volatility on 10-year JGBs spiked. The BOJ eventually provided more clarity about its expected purchases and increased the number of days on which it would operate, which will lead to reduced operation sizes in most maturity sectors. These measures contributed to an improvement in market functioning over the last two weeks, with intraday volatility and bid–asked spreads declining back toward more normal levels. However, as yields have not declined as these measures of market functioning have improved, the contribution of implementation issues to the recent rise in yields remains unclear.

Your second exhibit begins with developments in global sovereign debt markets. Here, too, the BOJ policy action remains a focal point for investors. Many have noted that institutional Japanese investors, including firms in the ¥400 trillion life insurance industry, may increase their allocation to foreign markets. Investors suggest that increased bond allocations would likely be to high-quality sovereign markets such as the United States, Australia, and core European countries, though emerging market economies are also expected to see some inflows. To date, few such reallocations have been reported, though a number of Japanese life insurance companies have noted intentions to boost allocations to foreign bonds.

Anticipation of these flows has contributed to a notable decline in sovereign debt yields, as seen in the upper-left panel. However, the recent weakening of economic data has also contributed to lower yields. Indeed, as seen in the top-right panel, in the primary dealer survey, respondents viewed weaker growth as the most important factor behind the decline in the 10-year Treasury yield.

The pattern of 1-year forward rate changes, seen in the middle-left panel, indicates that most of the decline in the 10-year Treasury yield was associated with a sharp fall in longer-dated real forward rates. Most of the change in the real long forward rates occurred after the BOJ announcement. This period also included a number of weak U.S. data points, including the March employment report, so it is likely that shifting balance sheet expectations as well as anticipated portfolio rebalancing by Japanese investors contributed to the decline.

As shown in the red line of the middle-right panel, measures of inflation compensation at long horizons were relatively stable. Five-year forward, five-year inflation breakevens declined only modestly and remain in the middle of the range seen since last September. As shown in the dark blue line, oil prices declined over the period, in part because of signs of slowing growth in China that Steve Kamin will discuss further.

There was also a precipitous decline in spot gold prices over the period, which appears largely related to concerns that peripheral euro-area countries could sell a portion of their gold holdings. Exchange-traded gold trusts, which have grown into a very popular investment vehicle in recent years, proved resilient amid the sharp price declines and vastly increased trading volumes.

Turning to Europe, weaker economic data has led to a firming of expectations for a cut to the ECB's main refinancing rate, as can be seen in the bottom-left panel. The EONIA rate, which reflects overnight interbank borrowing for the largest European banks, remains well below the main refinancing rate. However, a cut to the refinancing rate could still serve to promote more-accommodative funding market conditions for peripheral banks.

As shown in the bottom-right panel, both Italian and Spanish 10-year debt spreads to German debt narrowed over the period. Events in Cyprus appear to have had little sustained impact on financial markets. Still, investors noted that the terms of the

Cyprus program are consistent with some euro-area officials' objective of expanding private-sector loss sharing in bank restructurings. In addition, the use of capital controls for the first time in the euro area could increase the likelihood of depositor and investor flight from other countries seen as at risk of future bank or sovereign restructurings.

Your third exhibit turns to Desk operations. In the Treasury market, the Desk is continuing to receive good participation in the purchase operations. One recent trend we are monitoring, which is shown in the upper-left panel, is the decline in bid-to-cover ratios, particularly in the 20-to-30-year sector. With the conclusion of the MEP sales' operations, we reduced the size of each operation given the increase in number of days available for purchases. With smaller auctions, we saw an increase in the size of offers relative to the auction amounts; however, that trend has reversed, though the coverage level remains healthy and above ranges seen over the course of the MEP. Overall, we have not seen any notable shifts in Treasury market functioning during the intermeeting period, with both bid-asked spreads and trading volumes remaining in historical ranges, but we will continue to monitor auction performance to see if any adjustments in the operation schedule are warranted.

In the MBS market, the Desk continues to concentrate purchases in production coupons. As shown in the upper-right panel, issuance, and thus our purchases, remains concentrated largely in the 30-year 3 percent coupon. The bars to the right of that same panel show our projections for MBS purchases as a percent of gross TBA issuance using the March and current Tealbook baseline rate paths. These projections of purchases as a percentage of gross issuance have shifted down given the decline in rates.

While gross TBA issuance is a useful proxy for the most liquid supply of MBS available for purchase, it is important not to view it as an absolute limit. This is because the TBA trading convention allows both newly issued and existing securities to be delivered into transactions. In a TBA transaction, the seller typically delivers the cheapest-to-deliver MBS, irrespective of whether that security is newly issued. As a result of this dynamic, each month we are delivered both newly issued MBS and securities that were produced some time ago. This is reflected in the age of the loans backing the securities we are being delivered, seen in the middle-left panel. Most of the MBS we receive are backed by recently originated loans, which we define as having a weighted average loan age of zero to three months. However, for some coupons like the 30-year 3.5 percent, the cheapest-to-deliver securities were issued several months ago.

The ability to deliver both new and existing MBS in the TBA market is one reason we believe purchases can exceed gross TBA issuance without causing significant market dysfunction. As you can see in the middle-right panel, a sizable amount of production coupon MBS has been produced in the last year, providing a source for additional MBS purchases. That said, it is possible that purchasing from the stock of recently issued MBS will prove more difficult than purchases from new issuance because investors will be less willing to sell their existing holdings.

At this point, the MBS market does not appear to be showing signs of any significant market functioning issues. As shown in the bottom-left panel, implied financing rates showed some limited signs of stress. As noted in previous briefings, such indicators of scarcity drive our decision to postpone the settlement of securities by selling dollar rolls. As shown in the bottom-right panel, the Desk rolled 8 percent of expected settlements in April—a level close to the average observed since the purchase program began in September 2012. Overall, settlement fails in the MBS market also remain relatively low, and other measures of liquidity do not show any significant signs of market dysfunction.

Your final exhibit turns to balance sheet expectations as reported in the April primary dealer survey. The survey showed that the median expectation for peak balance sheet size edged up by \$150 billion, with most of the increase occurring in MBS. As shown in the upper-left panel, there was also a slight increase in the probability dealers place on the SOMA portfolio being greater than \$4 trillion at the end of 2014.

As seen in the upper-right panel, the median dealer now expects asset purchases to continue through the second quarter of 2014, with most dealers expecting some slowing of the purchase pace before the program ends. Dealers also expect that progress toward economic objectives will be the main factor determining changes in the pace of purchases.

Your final panel shows the median path of SOMA holdings through 2018 along with a dealer estimate of the economic conditions expected at important points along that path. Dealers were asked for their projections of economic conditions prevailing at the end of purchases and one year thereafter. The median dealer expects the level of payrolls to be close to the pre-recession peak and the unemployment rate to be 7.1 percent at the end of purchases. In the year following the end of purchases, payroll growth is expected to average 200,000 per month, and the unemployment rate is expected to fall 0.6 percentage point.

Turning to balance sheet normalization, the median dealer expects MBS sales to occur with only a 35 percent probability. Indeed, the median path of the SOMA portfolio suggested by the survey seems to imply no sales, or at most very modest ones, given that the steady pace of decline is broadly consistent with our projections of paydowns on agency MBS and agency debt.

Lastly, I would like to request a vote to renew our long-standing bilateral swap lines of \$2 billion with Canada and \$3 billion with Mexico. As you know, these swap lines were established under the North American Framework Agreement in 1994. Ahead of the meeting, Steve Kamin and I sent the Committee a memo recommending renewal of the lines at this time. Our proposal is to keep the swap lines in their current form. Thank you, Mr. Chairman. That completes my prepared remarks.

CHAIRMAN BERNANKE. Thank you very much. Questions for Simon? President Lacker.

MR. LACKER. Yes. My question concerns panel 5 on exhibit 1. There's a fairly sharp decline in yields for the 10-year, and even more so for the 30-year. And, strikingly, over the next several days, those movements are reversed. Do you folks have a narrative for what happened there?

MR. POTTER. There was the initial shock of how large the program was, and I think that caught market participants by surprise. This underestimates, on that day, the movement in the JGB market; we cannot actually get the intraday moves on Bloomberg quite accurately. There was a lot of turbulence; it is really hard to read anything into that. And then, as I discussed in the briefing, there was the issue of how easily the Bank of Japan could actually implement purchase programs of that size—and the size is both the net purchases and the fact that they don't roll over at auction, which means that they were looking at about ¥7½ trillion per month of purchases that they had to do across these six operations. I think that produced a lot of volatility. The futures price the next day made its high and low for the year. That kind of volatility tends to lead to people not wanting to hold these securities or not wanting to trade them. So that definitely made the yields move back up. The fact that those yields stayed higher relative to where they hit after the announcement of the purchase program is interesting. We don't have a good explanation, as you could tell from the briefing. The measures of market functioning that we have suggest the market is functioning better. Estimates of the term premium effect from purchases of this size suggest that the yields should be lower. The part that is hard to get in your head is: Suppose they were successful, and inflation is going to hit 2 percent, how would you

exactly price the JGBs right now? But this was a very interesting experiment about a large-scale asset purchase program for us to watch from a distance.

MR. LACKER. If I could follow up, Mr. Chairman? The obvious thing that comes to mind here is the methodology we've used historically to estimate the effect of large-scale asset purchases, and I wonder if this has any lessons for the reliability of our methodology.

MR. POTTER. I would be wary of trying to use JGBs. I would use the currency and the equity markets. The movements we have seen in those would be very consistent with some of what we expect to happen to financial conditions from large-scale asset purchases. But it is not a clean experiment because they've had deflation for about 20 years, and this is a very different policy, as we're trying to show, from the ones that they followed before.

MR. KAMIN. President Lacker, if I could just add a few thoughts that echo Simon's? First of all, I think it is worth keeping in mind that JGB yields had actually fallen a lot in anticipation of the program. So a lot of the response to expectations of more monetary easing was kind of built in. Now, indeed, everybody, including us, was surprised by how large the program was. But, in some sense, you might say a lot of the effect was already built in, and maybe that's part of the explanation for why, subsequently, yields didn't move a lot. That's one thing we're keeping in mind.

A second point, getting back to the issue of the extent to which rising inflation expectations may have been at play: I'll be referring in my remarks to some simulations that we've done using our models. In those simulations, the term premium on JGBs actually falls enormously, by 200 basis points, but because inflation rises in the simulation, the 10-year JGB yield only falls by maybe 10 or 20 basis points. Obviously, a model simulation is not proof or

evidence, but it does suggest that, in fact, you could have increases in inflation expectations offsetting some pretty substantial reductions in term premiums.

CHAIRMAN BERNANKE. President Fisher.

MR. FISHER. My question is on the domestic front, Mr. Chairman, and it deals with exhibit 2, graph 10. Simon, I'm curious from an Open Market Desk operator's standpoint—given that gold has come off, given that crude has come off, given that most inflation indicators, including the trimmed mean, are running significantly under 2 percent—why do you think it is that the red line, the five-year, five-year forward, pretty much stayed in the range that it has been in since we ramped up our program?

MR. POTTER. If I had just shown you the five-year forward, that has fallen a lot in the intermeeting period. This would seem an example of very well anchored inflation expectations in the United States. You can see the red line dips down just a little bit there—there was a TIPS auction, and that led to a substantial repricing. That just looks like it was market dynamics. And it got back to pretty much this range it has been in since September, but there was a little bit of action there. I assume it's because you guys are doing a good job of keeping inflation expectations well anchored.

MR. FISHER. That was the answer we were seeking. And then second, Mr. Chairman, now that Mr. Lacker has already spoken, I'd like to second Simon's recommendation that we approve the swap lines. Thank you.

CHAIRMAN BERNANKE. Thank you. Just on the five-year, five-year, this is not a true forward market.

MR. POTTER. Yes. The Barclays measure that President George has mentioned a few times also came down, and it looked like it was going to fall below the level it had been trading

at for quite some time, and that's one you can trade. That also came back a little bit. The Markets Group has another measure, which doesn't require as much effort on the yield curve as the Board staff's does. They're all telling the same story, that these long-forward inflation expectations didn't move that much over the intermeeting period.

CHAIRMAN BERNANKE. I'm willing to believe it, but I always am skeptical of small movements in this because it's a difference of errors. So the variance is going to be twice what the variance would be on a normal interest rate.

MR. POTTER. Yes.

CHAIRMAN BERNANKE. Okay. Any other questions for Simon? [No response] Seeing none, let me first ask for a vote to ratify domestic operations since the March meeting. Are there any objections? [No response] Seeing none, we have a proposal to renew the swap agreements with Canada and Mexico. As you recall, these are mostly symbolic in nature, but, nevertheless, we have done this annually, as long as I've been here, anyway. Any questions or comments on that issue? [No response] Seeing none, are there any objections to renewing the swap agreements? [No response] Okay. Then we'll take that as a "yes." We turn now to item 2, and I'll call on Bill Wascher to introduce the economic situation.

MR. WASCHER.² Thank you, Mr. Chairman. I will be referring to a one-exhibit "Forecast Summary" handout that you should have. The data on employment, spending, and real activity that we received over the intermeeting period were mixed. Bond markets reacted negatively to the news, and some outside forecasters warned of another spring swoon. In the end, however, we didn't see the data as strongly at odds with our previous forecast, in part because we were already projecting a noticeable step-down in economic growth this quarter. Likewise, although we made some material changes to our assumptions for fiscal policy and financial conditions, these were largely offsetting in terms of their effects on activity. The result is a real-side forecast that is not significantly different from our March projection.

Starting with the labor market data, the March employment report implied a slightly lower unemployment rate than we had expected, but also a weaker pace of

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

payroll job gains. Specifically, the unemployment rate in March edged down 0.1 percentage point, to 7.6 percent; we were expecting it to hold steady at 7.7 percent. By contrast, private payroll employment rose by only 95,000 last month, almost 100,000 less than we had expected. However, this downside miss was accompanied by upward revisions to earlier months, leaving the average three-month change in private payrolls at 170,000 per month, only 20,000 less than our previous projection.

We have taken both of these surprises on board in our near-term labor market forecast. In particular, we now expect the unemployment rate to average 7.6 percent in the current quarter, 0.1 percentage point less than our March Tealbook projection, and have reduced our forecast for private payroll growth by 20,000 per month through June to 160,000 per month.

The incoming spending data have also been a mixed bag. On the upside, real PCE appears to have increased somewhat more in the first quarter and moving into the second quarter than we had anticipated. In addition, the downward surprise in energy prices since the last meeting led us to boost our forecast for real disposable personal income growth in the current quarter, and so to anticipate a little more support for spending. On the downside, near-term indicators of business fixed investment, including the latest readings on nondefense capital goods orders and business sentiment, were relatively lackluster. And the BEA's estimates of contributions to economic growth in the first quarter from federal government spending, net exports, and inventories all surprised us to the downside. In the end, the pluses and minuses roughly cancel each other out, in the following sense: Our forecast of real GDP growth over the first half of this year still stands at about 2¼ percent, unrevised from the March Tealbook.

As a check on how we have interpreted the incoming data, the top-left panel of the "Forecast Summary" exhibit shows results from a factor model that pools a large number of activity and price indicators to generate forecasts of near-term real GDP growth. The black line on the chart shows the projection using the data that were available when the April Tealbook was finalized, while the green line shows the projection as of yesterday. As you can see, the growth rates implied by the factor model are ½ percentage point or more higher on average than the staff's second- and third-quarter real GDP growth forecasts. But if we adjust for the projected effect of the sequestration—which the model does not know about, except inasmuch as it is already present in the data that we have received so far—the model's forecast is not materially different from the staff's near-term projection.

Moving to the medium term, we have made some adjustments to our assumptions for fiscal and monetary policy. With regard to fiscal policy, we had assumed in the March Tealbook that the budget sequestration would be modified so as to have roughly half the effect of a full sequestration. Given the absence of visible progress in resolving the budget stalemate, we now think that a full sequestration is more likely and have revised our fiscal policy assumptions accordingly. With this change, fiscal policy at all levels of government is now anticipated to directly restrain real

GDP growth by $1\frac{1}{4}$ percentage points this year, $\frac{1}{4}$ percentage point more than in our previous forecast; the projected direct drag from fiscal policy then steps down to $\frac{3}{4}$ percentage point next year and to $\frac{1}{4}$ percentage point in 2015.

Regarding monetary policy, we boosted our assumption for the ultimate size of the current LSAP program, on the theory that a program tapering down over the second half of this year would probably more-closely approximate your views than one abruptly ending in June. As always, we stand ready, with steno pad in hand, to further adjust our assumptions in light of your discussion at this meeting.

For completeness, I would note that our assumed path for the federal funds rate is basically unchanged in this projection, with the first rate increase occurring in the fourth quarter of 2015 (though the specific date of the first rate hike implicitly falls a little earlier in the quarter than we had assumed in March).

In total—and as you can see from the top-right panel of the exhibit—our medium-term real GDP projection is little changed from March. In effect, the improvement in financial conditions that we have seen over the intermeeting period, along with the larger cumulative amount of asset purchases that we have assumed, mostly offsets the greater assumed fiscal drag in this projection. In addition, as Steve Kamin will discuss, we have lowered the path of oil prices in this projection, which provides an additional small impetus to real GDP growth.

In line with previous Tealbook projections, we expect that labor market conditions will gradually improve as real activity and production accelerate. As shown in the middle-left panel, we expect the unemployment rate to be just under 7 percent at the end of next year; this path is a touch lower than our March projection as we carried forward the slightly lower level in the recent data. As a result, the unemployment rate edges below the Committee's $6\frac{1}{2}$ percent threshold in the third quarter of 2015, one quarter earlier than in March. In addition, our current projection is roughly $\frac{1}{2}$ percentage point lower than the forecast we made in September, when the FOMC first tied its asset purchase decisions to an improvement in the labor market outlook. Average total payroll job gains—the middle-right panel—are expected to reach 230,000 per month in the second half of next year; the projected pace of employment growth in the second half of this year through 2014 is similar to our March forecast, and is not very different from our September projection. That said, the level of payroll employment—not shown—is considerably higher this year and next than we had projected last September.

Finally, as you can see from the bottom-left panel, we have marked down our forecast for second-quarter headline PCE inflation in light of a large downward revision to energy prices, as well as lower-than-expected food prices. The recent data on core inflation—the bottom-right panel—have also come in lower than expected; however, much of the downward surprise to the core was in the erratic nonmarket portion of the index, which typically carries little implication for future inflation.

Thus, with no real change to fundamentals, we have made essentially no revision to our core inflation projection over the medium term. Likewise, our medium-term headline inflation forecast is little changed from March. In particular, we expect headline inflation to run at an annual rate of around 1½ percent starting in the second half of this year. Steve will now continue our presentation.

MR. KAMIN. Several weeks ago, Washington celebrated its annual rite of spring, a time when hope triumphs over experience, and when the coming year seems sure to bring better things than the last. I refer, of course, to the Spring Meetings of the IMF and World Bank. But even here, the mood was somewhat somber as participants pondered the sharp decline in Chinese economic growth, continued churning in Europe, and other headwinds facing the global economy. These concerns were on our minds, too, as we put together the Tealbook forecast. As in March, we still anticipate that foreign GDP growth will recover from its anemic pace of 2¼ percent in 2012 to 3½ percent by the end of the forecast. However, we now expect a somewhat slower pickup in the near term, and some of the downside risks we thought had diminished have come back to the fore.

The news from China is the principal cause of our more subdued outlook. As you will recall, after slumping in the first half of last year, Chinese GDP growth roared back to a 9½ percent pace in the fourth quarter, supported by policy stimulus and a recovery of exports. Viewing this growth as too hot not to cool, we had projected Chinese growth to moderate to 8½ percent in the first quarter, but it instead appears to have plummeted to 6½ percent. Of course, seasonally adjusting Chinese GDP data is difficult, and the reliability of these statistics is questionable. Nevertheless, we believe the slowing was for real, and our indicator model of Chinese GDP, based on industrial production, imports, and retail sales, predicts a similar decline in growth. Data for other emerging Asian economies have also come in weak, suggesting China's deceleration may have spilled over to its neighbors.

We cannot identify any policy tightening or economic shock that accounts for why Chinese growth fell much more sharply than we and most other observers had expected. The shortfall does not appear to reflect an emerging property bust, for example—real estate prices have been rising, housing investment has held up well, and overall credit growth has been brisk. Rather, with the weakness widespread across different categories of private domestic demand, we judge the underlying momentum in the economy to be somewhat weaker than we had thought. Accordingly, we marked down our outlook for the next several quarters and project that economic growth will recover only gradually back to 8 percent—near what we estimate to be its trend pace—by the end of this year. That said, the risks of further slowing now appear to be appreciably higher than we thought in March.

We also revised down our forecast for the euro area, albeit by much less than for China. However, our euro-area forecast was pretty gloomy to start with, and recent developments reinforce our conviction that the euro area faces a long, hard slog ahead. After falling at an annual rate of 2¼ percent in the fourth quarter, euro-area real GDP appears to have contracted another ¾ percent in the first quarter as

industrial production fell further and the unemployment rate nudged up to a record 12.1 percent. We now project that the euro-area economy will not bottom out until the third quarter and then start an extremely anemic recovery, so that even by 2015, unemployment still exceeds 12 percent. The recovery, such as it is, will be supported by a moderation in the pace of fiscal consolidation—and to a slightly greater degree than in our previous forecast—as well as further easing of stresses in financial markets.

It bears noting that this financial normalization will not translate automatically into additional credit and spending. Since last July, when ECB President Draghi gave his “whatever it takes” speech, sovereign spreads for Spain and Italy have dropped more than 200 basis points on net, but bank lending rates have fallen by much less, credit availability remains very tight, and the demand for loans is quite depressed. By our reckoning, it will take considerable time to restart the process of lending and investment, especially in peripheral Europe, and this is one of the factors that will keep growth in Europe so subdued.

Moreover, the recent crisis in Cyprus reminds us that progress toward financial normalization will by no means be sure and steady. It is a good sign that the crisis triggered only transitory disturbances in European financial markets, for the most part, suggesting that the ECB’s OMT program may be helping to backstop investor confidence. However, the episode did nothing to enhance the reputation of European leaders as crisis managers. Additionally, their failure to help bail out senior creditors to Cyprus’s major banks, as they had done for other countries, may increase the likelihood of future runoffs in funding should European banks encounter problems. Finally, it is discouraging that, in the aftermath of this crisis, prospects for full implementation of European banking union remain highly uncertain.

I should note that not all is gloom and doom in the foreign outlook, however. To begin with, Brent spot oil prices have fallen some \$6 per barrel since the time of the March Tealbook. Although this decline certainly reflects slower global growth prospects, especially in China, it also provides some offset to that weakness by lowering consumer prices, boosting real household incomes, and providing greater scope for monetary accommodation.

More importantly, we have revised up the outlook for the Japanese economy in light of the more-aggressive monetary policy expansion that Simon described to you earlier. The BOJ’s plans involve more than twice as many asset purchases as we had assumed in our previous forecast. Given its huge scale, gauging the effects of the BOJ’s new plan on economic performance has been challenging.

One approach we used was to assume that BOJ asset purchases have effects on the term premiums in bond yields that are similar to those of our own LSAPs, and then trace these effects through to the rest of the economy. By this approach, the BOJ’s program would generate a 200 basis point decline in the Japanese term premium, a 3 percentage point boost to output growth during the forecast period, and a 1½ percentage point rise in inflation. As an alternative assessment, we estimated

the effects of the large market movements that have already taken place in anticipation of the BOJ's actions: a 50 percent rise in Japanese stock prices and a 25 percent decline in the yen. By our calculations, these movements could boost Japanese inflation and output by broadly similar amounts to those induced by the term premium shock. Given the long history of disappointments with Japan's economic performance, however, we chose to be quite restrained in translating these results into our projections. We are thus calling for output growth to average 1½ percent over the 2013–15 period, about ½ percentage point higher than we wrote down last October, before the advent of Abenomics. Inflation now rises to 1¼ percent by the end of the period, abstracting from the effect of consumption tax hikes, compared with the flat price path we wrote down in October.

Although the cautious nature of our projection implies some upside risk to the outlook, even a Japanese boom would have limited effect on the global economy and U.S. trade. Japan accounts for only 8 percent of global GDP and 5 percent of U.S. exports. Accordingly, the higher growth in Japan is not sufficient to offset the lower growth in China in our aggregate for total foreign GDP, which we project will rise only 2¾ percent this year, ¼ percentage point lower than in the March Tealbook. However, we still see foreign economic growth picking up to 3½ percent by 2015, and this recovery, along with the depreciation of the broad real dollar that we anticipate, leads export growth to rise appreciably over the forecast period. Import growth rises too, reflecting the acceleration of the U.S. economy, so net exports are a neutral influence on U.S. growth over the next several years, the same as in the March Tealbook. Bill and I will be happy to take your questions.

CHAIRMAN BERNANKE. Questions for our colleagues? President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I just had a question on core inflation.

Bill, your comment was that core inflation is lower and is about 1.2 percent measured from a year ago. Some of the commentary suggested that the market-based measure is different. But I am looking at the market-based core. It's 1.3 percent measured from a year ago, so it's almost the same. I looked at this picture previously, and I've been impressed that all kinds of different measures of PCE inflation measured from a year ago are all down, basically.

MR. WASCHER. I agree. Inflation certainly has come down over the past year. For the overall core in the first quarter, I mentioned that nonmarket prices actually fell.

MR. BULLARD. So your comment is that if you just look at what moved in the first quarter, it is the nonmarket components that came down a lot.

MR. WASCHER. Right. They fell a percent in the first quarter over the fourth quarter, and in the last three months, they were down at a 2 percent rate. The market-based core in the first quarter was up at an annual rate of 1.6 percent, close to what we were expecting. I think part of the slowing over the past year reflects the pattern of commodity and oil prices passing through to core; we also see that in import prices. The rise in import prices has been pretty modest, and that has contributed.

MR. BULLARD. Would you say the staff view has modified a little bit on this? Because a lot of times, the staff view seems to be that the commodity prices aren't going to feed through to core very well.

MR. WASCHER. Well, we sort of gauge that as they affect import prices, and we do see them affect core import prices. And that we do pass into core, according to the share of imports in consumer spending.

MR. REIFSCHEIDER. I think the distinction is that we think they would probably pass through in the very near term but there's very little, if any, pass-through to longer-run price trends, looking out six months, a year, or two years.

MR. WASCHER. Right. We haven't made any adjustments to our assumptions for inflation expectations. We expect them to hold steady. So, in some sense, we look through these effects of supply shocks on core inflation over a more medium-run period, but they do have effects in the short run.

MR. BULLARD. Well, the last time we were down at these low levels, commodity prices went up a lot, but then core prices followed behind. So now you have the opposite dynamic going on: Commodity prices are falling, and core is following behind.

MR. WASCHER. Yes. Then, in our forecast, as we have commodity prices leveling out, with inflation expectations stable and slack narrowing over time, we expect core inflation to edge back up toward 1¾ percent in 2014 and 2015. That is the basic story.

MR. BULLARD. Thank you.

CHAIRMAN BERNANKE. President Evans.

MR. EVANS. Thank you, Mr. Chairman. My business reports this time were somewhat different from the last couple of times. So I'd like to ask three questions, actually, about the Tealbook outlook, if you'd indulge me. One is on Europe, one is on consumption, and one is on the labor market.

In Europe, you're seeing economic growth recovering fairly decently in the next couple of years, and I'm still struggling to understand the underpinnings of how Europe is going to get out from under this. So, a couple of things. How does economic growth differ across the countries in your scenario, and in particular, Germany? Are you expecting Germany to be an engine of growth that pulls other countries along in Europe? How does that square with the traditional German export-led growth strategy? Those are the questions I'm struggling with. And are we seeing any evidence of the wage and price adjustments necessary to boost the competitiveness of the periphery countries? I mean, we must be seeing adjustments, but do you think they're close to the necessary degree for them to become competitive?

MR. KAMIN. Right. I'd like to start off by saying that we are, indeed, predicting a recovery in Europe, among other reasons because we don't believe any economy can continue to contract forever. It has got to move up at some point. We have more reasons than that, but [laughter] that is a common rationale for it in the economic forecast. But it's actually an extreme.

MR. EVANS. Even Japan is coming back, yes.

MR. KAMIN. As I emphasized in my remarks, it's a very tepid recovery, in the sense that, by the end of the period, we have an output gap for the euro area that's only a little bit smaller than it is right now, in the neighborhood of 4 percent of GDP. In our forecast for this year, 2013, from Q4 to Q4, there's basically zero economic growth in the euro area. That's followed by 1.3 percent next year, which is in the neighborhood of potential, and then 2 percent the year after, which is higher than potential. By this metric, this is an extremely tepid recovery, and it means that by 2015—eight years after their recession first started, at the end of 2007—their level of GDP is just getting back to the neighborhood of where it was at the previous peak, and their unemployment rate, at 12 percent, is extremely elevated. To be sure, this is a very gloomy forecast, and it means that in 2015 they will probably regard themselves as still being in recession.

That said, what do we think is driving it? Well, there are some concrete factors. One of them is that, certainly, the pace of fiscal consolidation in the forecast is going to lessen, and for other reasons, as they achieve their fiscal goals. To be a little bit more concrete, we estimate their fiscal drag last year was in the neighborhood of 1½ percent of GDP, which is pretty hefty. This year, it should be a little under 1 percent, and then next year and the year after, below ½ percent. That, right there, is one concrete reason why they should start growing a little bit. As you may have noted, there's been quite a bit of publicity lately—sort of a backlash against austerity—and we have, in fact, reduced the extent to which we think they're going to be fiscally consolidated by maybe a quarter of a percentage point—not a great deal, but that's certainly a factor. Number two is the fact that much of the recession that took place was because of soaring sovereign spreads in the wake of a panic about the fiscal sustainability of governments and the

situation of banks. We have seen these sovereign spreads fall a great deal. We have seen spreads on bank lending and CDS spreads fall a great deal. We've seen these improvements, as I emphasized in my remarks. We have yet to see those pass through to actual lending and borrowing conditions because we know by experience that that tends to take place with a lag, but we do expect to see that as well. Finally, as regards the pattern within Europe of these different adjustments, we're not really counting on Germany to be an engine of growth per se, dragging everybody else along. In our forecast, Germany certainly does better than other countries. For this year, even as euro-area economic growth is zero, we anticipate Germany growth of about 1 percent, rising to 2 percent afterward, but that's not really enough to drag the whole continent along.

Are adjustments being made, as far as relative prices within the euro area? Yes, to some extent. We are actually seeing some tailing-off of unit labor cost growth in the peripheral economies compared with the northern economies. It's not a great deal. It may not even be enough to answer those critics who say that the peripheral countries would be better off breaking away and devaluing, although that has its own problems. But certainly they're on the road toward slow adjustments in relative prices. It is also true that with regard to current account balances, which is another way we measure that type of improvement in competitiveness, the peripheral economies have substantially reduced their current account deficits. But that is probably due less to improvements in relative competitiveness than it is to the import compression due to their recessions. But, as I say, there are some initial indications of progress on the unit labor cost front. So putting all these things together, we do see a road toward normality for these countries, but it is a difficult road, and it's going to involve a lot of hardship

on the way. And it's going to be a while before the global economy or the United States' economy benefits substantially from higher growth in economic activity in Europe.

MR. EVANS. Right. Thank you. If I can ask about consumption. The Tealbook forecast has fairly subdued investment. Given what I hear from business contacts, that seems reasonable; if anything, the Tealbook may be on the optimistic side. Despite the weakness in business investment, the Tealbook forecast has a pretty decent growth in consumption and housing. The story that goes along with this is that of a virtuous cycle: Consumption increases because disposable income rises; disposable income rises because employment goes up; employment goes up because consumption increases; and that feeds on itself. I'm having a little bit of trouble with the chicken and the egg problem here. Which one is going to go first? How long can this cycle go on without participation by businesses? If they're cautious about investment, won't they be cautious about hiring? A lot of firms are telling me that they'd rather install technology than hire workers. And then on top of that, you've got the fiscal drag from the payroll tax increase. Can you make me feel better about this?

MR. WASCHER. I don't know. I think our business investment outlook isn't superb, but we have E&S going up 6 percent a year—and that's a solid gain—as well as increases in business investment overall. As you say, we think that over time the economy is going to recover as some of the things that are holding down economic growth now are going to wane. Fiscal policy, in particular, is a big drag this year. But that drag is going to lessen, in terms of its effects on economic growth, over the next couple of years, and that should contribute to more consumption and income growth and employment and so forth. Moreover, as that happens, confidence, which we also think is restraining growth now, will improve over time, again, as part of this virtuous circle. And going along with that, we continue to expect some gradual

improvements in credit availability where things are still tight now. I don't know if that makes you feel any better, but that's the story we have in there.

MR. REIFSCHEIDER. One thing I'd add to that is I think you can make an argument that you see the start of this virtuous circle in the housing market. I don't want to get carried away, but things are getting better there slowly, and that's an example of this sort of thing. It has got a ways to go before the economy is all the way back, but I think there is evidence that that is occurring. Consumer durables, particularly auto sales, have come back quite a bit. It's not as if the household sector is dead in the water; it is slowly improving.

MR. EVANS. Okay, thanks. Lastly, if you'll indulge me, on the labor market improvement, you have the chart on the middle left that shows the improvement in the outlook for unemployment relative to the September outlook. The improvement looks sort of like a parallel shift down in the projected half. So a big part of the improvement is what we've seen so far. Since September, we've seen a decent-sized decline in the actual unemployment rate, which I think the Tealbook assumes is almost all a decline in the gap between the unemployment rate and the NAIRU. That's one reading of yesterday's briefing document, I think. Yet we haven't seen a corresponding closing of the gap between the labor force participation rate and its trend. In fact, it has widened by a couple of tenths. This could temper one's views about how much labor market slack has been closed. What do you think is going on with these two margins?

MR. WASCHER. The unemployment rate has clearly come down faster than we had expected back in September, and, correspondingly, employment growth has been stronger than we had expected back in September. The level of payroll employment is about a million higher by the end of the forecast than we were anticipating back in September. So I think it has been the case that there has been, basically, more improvement in the labor market in terms of

employment and the unemployment rate than we, certainly, would have expected. Our interpretation of that was that the level of potential output was lower and that firms were doing some more catch-up in terms of bringing their workforces back toward more sustainable levels after having slashed them during the recession. In terms of participation, I think that often lags. As you get some more persistent and more definitive improvements in the labor market, we do expect the participation rate to move back toward a declining trend. And over the forecast period, that is what we have—we have the participation rate basically moving sideways and moving toward its trend. So while we may not have seen that yet, it actually may be too early to clearly see that at this point.

MR. REIFSCHNEIDER. Related to that as well, it's not just the standard unemployment rate; the broader measures of underemployment—the various U's—tend to show similar patterns. So you can bring in part-time employment, you can bring in discouraged workers, and those sorts of things, and you still see similar patterns—not identical, but similar patterns—to the unemployment rate in those broader measures.

CHAIRMAN BERNANKE. There's a paper by Chris Erceg and Andy Levin that was given at the Boston conference.

MR. EVANS. Yes, I saw that. That was a very interesting paper.

CHAIRMAN BERNANKE. Yes. One of the results is that the participation rate does have a cyclical component, but it's lagged considerably behind the unemployment component.

MR. EVANS. That's one thing that they point out.

CHAIRMAN BERNANKE. Yes. President Kocherlakota.

MR. KOCHERLAKOTA. Yes. Thank you, Mr. Chairman. Actually, in President Evans's tradition now, I have three questions of my own. But they are similar to his, so that will

make things easier, I think. On the “Forecast Summary,” the middle chart on the left, “Unemployment Rate,” if we were looking at the employment-population ratio, what would be your forecast for that, say, at the end of 2015?

MR. WASCHER. I don’t know that I have that. There it is: At the end of 2015, it is 59½.

MR. KOCHERLAKOTA. 59½?

MR. WASCHER. Yes.

MR. KOCHERLAKOTA. Okay. So we are going to see a full percentage point increase.

MR. WASCHER. Right.

CHAIRMAN BERNANKE. What is it today?

MR. WASCHER. It was 58.6 in the first quarter.

MR. KOCHERLAKOTA. Okay, thank you. I hope that happens. That would be great. My second question is, I actually don’t understand the 1 million increase in total payroll employment, and maybe I’m just doing the calculations incorrectly—so how much extra per month is that?

MR. WASCHER. A good chunk of that is the benchmark revision that occurred in February.

MR. KOCHERLAKOTA. Right.

MR. WASCHER. That’s about half of it, maybe even a little more than half of that. It’s not as big if you just looked at the changes since September.

MR. KOCHERLAKOTA. Okay, thanks. Yes. So really, we should have been thinking that we had more people in September itself than we thought.

MR. REIFSCHEIDER. Yes. And we did.

MR. KOCHERLAKOTA. That's helpful. And I had a question about Japan. We've been tracking zero-coupon inflation swaps in Japan, and that's an illiquid market, as was pointed out. They showed a lot of movement after the election but it really seems like those did not show much movement at all after the big policy innovation from the Bank of Japan. Do you have any thoughts on that?

MR. KAMIN. Well, I think that echoes back to the point I made earlier to President Lacker, which is that there was an awful lot of movement in markets in anticipation of the announcement of a large program. People expected a very large and very aggressive program, and, as your data show, those data move up from something under ½ percent, in terms of expected inflation, to something like 1½ percent now. So that is pretty substantial. Now, logic would entail that when the program was announced, and it was even bigger, that inflation expectations would rise even more, but they didn't. So it's a bit of a mystery. As you pointed out, the market is not too liquid, so it's a little hard to decipher these things. My best guess, as I say, is that most of it was baked in the cake, and market participants didn't quite know how to react to that remaining hunk of unexpected purchases; we'll just have to follow it closely.

MR. KOCHERLAKOTA. Okay. Thank you.

CHAIRMAN BERNANKE. Other questions? President Lacker.

MR. LACKER. Yes. If I could just follow up on that. So that makes the fall and then snapback in JGB yields more problematic, it seems to me. Because if you don't have expected inflation as the explanation for the return to the previous level, the initial response to the announcement looks sort of spurious and transitory. And if that's true, that sort of undermines our approach to estimating the LSAP effects in the United States because we use these little, narrow announcement effect windows, which is what I was getting at.

MR. POTTER. President Lacker, that's why I said it was even bigger if you did the intraday window, which is hard to see with what we have.

MR. LACKER. Right. It could be even more misleading.

MR. POTTER. It would be even more misleading. I think with the inflation swaps, we really need to wait and think that the Bank of Japan is probably the best source for trying to look at these data because they will know some of the technical features with them. They definitely did increase substantially leading up to the announcement. Given the announcement was about double what people thought, you would expect that, if it was perfect, to get them close to 2 percent because that's what they should be getting if they are credible. And, so far, there is nothing in that market that suggests that's true.

MR. KAMIN. I guess my best guess would be that it's just very difficult to get a clear read on what is happening to expected inflation, term premiums, and other factors at the moment. It has just been a period of some confusion, and we are hoping that, over the passage of time, things will clarify.

MR. REIFSCHNEIDER. Also, I don't think it's correct to say that in the United States, we rely just on event studies. For example, the estimates reported in Tealbook, Book B, about LSAP effects on term premiums are uninformed by event studies. Those are based on a model.

MR. LACKER. That's something else entirely.

MR. REIFSCHNEIDER. Yes, something else entirely. I would say there are three different methodologies, one of which is event studies.

MR. CLOUSE. Right. The term-structure models are based on an underlying historical time series of numbers, and we do use the event studies to inform it. And then we also looked at

intraday movement, or CUSIP-by-CUSIP responses. All three of them point to the same rough ballpark estimates.

MR. KAMIN. Going forward, I would hope that we would get a little bit more clarity, as we see further evolutions of inflation swaps and other measures of inflation expectations. But, presumably, one other approach we can take once enough of these asset purchases have been made is to look cross-sectionally at impacts of these purchases on yields. But that is work down the road.

MR. POTTER. And there's still the effect on the yen and the stock market, so you could try to back it out. We have tried to measure inflation that way as well, and you see, perhaps, more of an increase in inflation.

CHAIRMAN BERNANKE. Seeing no other questions, let's begin our economic ground, and I'll turn to President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. My baseline outlook for the economy has not changed in any significant way from the last meeting. The recent data are mixed and suggest an economy that continues in a mode of moderate growth with little upside price pressure. While the current circumstances and outlook vary considerably from industry to industry, and to some extent across geography, most of our business contacts expect slowly improving conditions. Businesses remain very cautious about expansion-oriented investment and adding to payrolls. We did hear from some directors that the patterns of discretionary business spending are shifting more to the offensive, with renewal of broad-based advertising campaigns, more employee-development spending, and increased business travel. Businesses in the energy, tourism, and real estate sectors reported improved conditions and an optimistic outlook. A senior auto manufacturing executive opined that sales are leveling off at a healthy

level. Industries exposed to lower-end retail or government spending are less buoyant. We did not pick up a clear signal of widespread impact of the sequestration beyond the direct spending targets. Looking at consumer spending, consumer spending patterns appear to vary widely by income level. Retailers selling mostly to lower-income customers perceived greater weakness and point to the payroll tax. The reports of our contacts suggest very little pricing power and little inflationary pressure. If anything, in this cycle, we heard comments suggesting a slightly softer price environment. Some referenced the influence of lower commodity prices. We heard few reports of wage pressure, except where there are shortages of qualified candidates in specialized skill areas.

Our inflation forecast relative to the Tealbook previously showed a faster convergence to the Committee's inflation target. Based on the incoming data and anecdotal soundings, we have lowered our inflation forecast and now see a return to the longer-term inflation objective taking more time, closer to the Tealbook. On the growth line, our forecast is thematically in line with the Tealbook, but we are a little less optimistic about the pace of a pickup of growth in 2014 and 2015. I continue to perceive the risks around this growth outlook as roughly balanced. Importantly, the sense we get from talking to a broad spectrum of business contacts is they believe the downside risk has lessened. I have taken that on board.

As a check on anecdotal reports, we have been polling a large panel of businesses about their unit sales outlook. Last November, our panel of roughly 200 firms assessed the downside risk potential in their businesses as large—on average a 50 percent chance that unit sales would show either no growth or a decline in the year ahead. Two weeks ago, we polled the same firms and asked the same question. They cut their estimate of downside risk to about a third and now see a significantly greater chance of an upside outcome over the next 12 months. That said, I

see, at the moment, few indications that the recovery is about to kick into higher gear. In my view, we are not getting much indication of a move in either direction. I think the situation calls for letting things play out for a while longer in order to get any real understanding of the trajectory of the economy.

And anticipating a possible topic in the next round, if I ask myself whether I expect to see justification in the data for claiming that the outlook has improved in a material way, I am not highly hopeful. For that reason, I will continue to favor the positioning of any decision on the LSAP element of policy in terms of a reduction of downside risk around the outlook and improved confidence in the sustainability of a slow and steady growth picture with gradual progress on unemployment. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. As the Tealbook notes, the 10-year Treasury rate declined significantly since the last meeting. During the week prior to the March FOMC meeting, the yield was fluctuating around 2 percent. Over the last week, it has fluctuated around 1.7 percent. I would like to take a moment to consider what the roughly 30 basis point change in the 10-year bond yield might reflect. Just to place this movement in perspective, based on the FRB Boston's more conservative estimates of the effect, an additional purchase of \$500 billion in long bonds would move that 10-year Treasury rate by approximately 20 basis points. Most of the downward movements occurred between April 2 and April 5. Two announcements were particularly relevant during that time period: one from a major foreign central bank, as Simon highlighted; and one that raised concerns about our recovery.

First, the Bank of Japan announced a significant quantitative easing program. The market reaction was striking. The yen depreciated 2.6 percent against the dollar; the Nikkei

closed 2.2 percent higher; and Japanese government bonds declined significantly. This is despite the fact that more-accommodative policy had been widely expected, having been telegraphed by the personnel changes at the Bank of Japan. If we use a larger event window, in the spirit of President Lacker's question, since the beginning of the year, the Nikkei has moved from 10,600 to 13,900. The exchange rate has moved from ¥88 to the dollar to ¥99 to the dollar. And the 10-year Japanese bond yield has declined from 83 basis points to 59 basis points. These asset price responses strongly suggest that vigorous quantitative easing can significantly alter a wide range of asset prices. The magnitude of these asset price responses in expectation of aggressive actions, despite being at the zero lower bound for more than 15 years, should bolster our confidence that quantitative easing can have a large impact if boldly implemented. In fact, significant quantitative easing in Japan seems to have been associated with lower rates in the United States as well as in Japan, as Simon's figure showed.

The second major announcement was the employment report. Payroll employment increased by 88,000 jobs in March, only half the amount expected. Moreover, the March survey was conducted before the full effect of the sequestration could be reflected in government employment or in private employment at firms that strongly depend on providing goods and services for the government. Still, despite the weak employment report, the Tealbook outlook for the unemployment rate at the end of this year has improved since September of 2012. While last September, the Tealbook had projected an unemployment rate of 8 percent at the end of 2013, it is now projecting an unemployment rate of 7.4 percent at the end of 2013.

The question is whether the realized or expected improvement in labor markets is substantial enough, or self-sustaining enough, that an outside observer would agree that labor markets had substantially improved. I want to make two points on this subject. The first

concerns the reason for the apparent improvement since last September. The employment-population ratio in September of 2012 was 58.7 percent. The March employment-population ratio was 58.5 percent. Similarly, the labor force participation rate has declined from 63.6 percent to 63.3 percent. That we are employing a smaller percentage of the population than last September, that those of working age are less likely to be in the labor force, and that employment growth over the last quarter has averaged less than 200,000 jobs per month are several reasons why an outside observer might feel that we have yet to experience a substantial improvement in the labor market.

Second, I interpret “substantial improvement in the labor market” to mean not just improvement in the level of labor market conditions, but an improvement in the speed and certainty with which the economy is returning to full employment given that level, much in the spirit of President Evans’s question. The economy’s speed, as measured by GDP, has not changed significantly since last September’s forecast. As a result, it is taking too long to get to most measures of full employment. More specifically, in terms of real GDP forecasts, there has been little change. Last September, the GDP forecast was 2.4 percent in 2013. It is now virtually the same. However, the September Tealbook was based on an assumption of no balance sheet expansion, while the current Tealbook has much more accommodation included.

Furthermore, inflation developments since last September are worth highlighting. The March 2013 reading for core PCE inflation is 1.1 percent on a 12-month basis. The same reading also applies to the 6-month measure. Relative to September, the April Tealbook forecast for core PCE inflation this year is down, despite a lower projected unemployment rate. Similarly, the September forecast for PCE inflation for 2013 was 1.4 percent. The April forecast is only 1.0 percent. Note that the Tealbook has had much lower forecasts for inflation than most

of the SEP participants but has generally been more accurate than most participant forecasts, especially those that assumed we would quickly return to the 2 percent inflation target.

In summary, what have I learned since the last meeting? First, the Japanese experience and the continued strong growth in U.S. interest-sensitive sectors make me more confident of the effectiveness of quantitative easing. Second, we have not yet had substantial improvement in labor markets, and I am worried that the sequestration could undermine what progress we have made. Finally, inflation has been considerably lower than expected, and, as a result, we will continue to have large misses for both elements of our mandate through the forecast horizon. Thank you.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Thank you, Mr. Chairman. I'm going to start with a comment on the 11th District's economy and briefly review what I gleaned from my national and international CEO contacts; make a comment or two about the financial developments that I'm concerned about; and then, following the tradition of President Lockhart and President Rosengren, tip my hand as to how I'm likely to discuss policy tomorrow.

With regard to the 11th District—and I want to stress this because of the prosperity we've been enjoying and the fact that we have been a job-creating machine—our economy has grown at a moderate pace over the last six weeks. Payroll employment growth is running about 2.1 percent; that's the average long-term growth rate. There is some good news: Existing home sales are on fire. The inventory of available homes has fallen to the lowest level since the Clinton Administration. We're seeing a significant amount of all-cash and absentee-buyers activity, which has been particularly robust in the major metropolitan areas, with one source reporting an investment group buying 200 homes in Dallas alone. One broker—as I reported to

you by telephone, Mr. Chairman—a woman named Allie Beth Allman, reported a billion dollars in home sales last year in three Zip codes in the Dallas area. Even if you take into account the double counting on both sides of the transaction—where she's able to do it—that's a pretty robust number. So that's good news. Tax revenues are robust. The rainy day fund is approaching its constitutional limit. It may soon require the state to disburse money or to spend more, and there is serious discussion, on the good news side, in the legislature about issuing a 100-year taxable revenue bond tied to infrastructure, such as bridges, roads, and water. Major political figures have all signed off on it. There's actually a bill in the legislature, but its fate will depend on political horse-trading, and one thing I've discovered is that even among the most conservative, anti-debt, anti-tax people, they always want something for their district. So we'll see how that goes. But it is interesting to note that the underwriters have said we will be able to place more than \$5 billion at less than 5 percent for 100-year bonds, taxables.

The bad news is that we've seen significant volatility in our employment numbers. Jobs were up 4 percent in December, up ½ percent in January, up 7 percent in February, and down 0.8 percent in March. I don't know what that tells us, but it's of note. Of greater concern are the results of the Dallas Fed's recent manufacturing, service, and retail surveys. I would note that they were conducted between April 16 and April 24, so they're the most recent of all the Federal Reserve Bank surveys, but on the other hand, they are in keeping with the negative tone of those recent surveys. As to manufacturing, our manufacturing survey indicates that activity is ebbing. The new manufacturing orders index was negative for the first time this year. Our backlogs in volume of shipments are negative. Among manufacturers' perceptions of broader business positions, they've worsened in April, and our index of future business activity reported its first negative reading in over five months. Cap-ex has declined in our District. In this last survey of

our manufacturers, we asked specific questions as to what was their greatest cause of concern, and we drilled in specifically on the issue of health-care costs. When asked about this, 81 percent of those surveyed expect health-care reform to increase their health-care costs and their employee costs. Fifty-six percent expected to either pass on these increased costs to their employees directly or to reduce employment. Zero percent said that they would increase employment until they had clarity on this front. Forty-one percent say they have no idea what the cost impact is likely to be. So it is not a very positive development in the manufacturing sector.

In the service sector, as reported this morning by the New York Fed's AMDATA mailbox, which we appreciate, activity slowed in April. The revenue index, which is a key measure of service-sector conditions, while remaining positive, fell to its lowest level in nine months. Employment and hours worked both rose a bit. Prices and wage premiums increased slightly but were nothing to write home about. And of concern is that respondents' expectations of future business conditions in the service sector, while still positive, are declining. And as to retail sales, where we take a separate survey, and I think it is somewhat unique, hiring continued to grow, but at a much slower pace. Prices and wages were unchanged, but, again, as with the manufacturers and the service-sector providers generally, perceptions of broader economic activity were markedly less optimistic, and the measure of optimism about the future outlook fell sharply.

This less-than-peppy tone in what, again, has been heretofore a very prosperous area and continues to be so was reflected in my soundings of national and international CEOs. In fact, had I not served in the Carter Administration, Mr. Chairman, I would use the word "malaise" to describe the current mood among the CEOs.

The sum total of my soundings of the truckers and rails and airlines and express delivery and logistics firms and tech companies; the regular manufacturers and telephonics; retailers, including restaurants; and the sellers of the working man's elixir, as I like to call it, beer is the following: There was little anecdotal evidence of inflationary or deflationary price pressures. Every single contact I talked to continues to drive productivity and cost containment. This even relates to casual dining, by the way. It's interesting to talk to the casual-dining restaurant owners. They are now putting in place what they call "labor cost enhancers," and what that means is they've reduced their kitchen costs and their waiter count. Like everybody else is trying to do, they're driving productivity. The big truckers like Swift report that price competition among truckers is increasing. So there is some downward price pressure there, despite increasing miles in year-over-year transportation gains. With regard to food prices, the large food producers report that crop conditions are creating a little bit of price deflation presently. Perhaps our president from Kansas City will reflect this, but they are reporting price declines in the grains of up to 10 percent. But they note that the global food inventories "are running on fumes," to quote one, and they expect restocking to begin in earnest in October, at which time they expect prices to come back but remain contained.

Obviously, housing is strong nationwide. There are two indicators of interest that one doesn't typically hear, and I'd like to mention them. Among the rails, we've had 22 consecutive months of positive growth in center-beam car count; these are the cars that carry lumber. All over the country, we are strong in housing-related areas, and the rails report that every aspect of housing, from roofing tiles to the goods that go in, fixtures and so on, has robust volume. And then what I found to be one of the more interesting indicators is that according to Anheuser–Busch, the Mexicans are coming back to the United States. The volume of beer consumption

dropped 0.9 percent nationwide from 2007 to 2010, but in heavily Mexican-Hispanic areas, the drop was mid-single digits to high single digits. For example, in Houston, the drop was 5.6 percent. And they have actually gone through, Zip code by Zip code, to measure their most Hispanic-intensive areas to see where this drop came from, and it, of course, indicates that Mexicans went home. Mexicans build homes in the United States, all over the country. But the news is that within the past four to five months, according to my contact, over one-third of the Mexicans have returned. So my staff is very eager to do field trips to the Busch distributors to do a little more refinement of that data. The point is, the housing market is robust.

Regarding overall demand, one sees a slowdown in the top-line growth among the S&P 500 ex financial, ex utilities companies. Sales growth in the first quarter of this year was 2 percent and has been on a down slope. This is confirmed by my discussions with the CEOs. Enterprise demand, as I like to call it—that is, non-consumer-driven demand, or directly driven demand—remains weak. And the driver of activities reported by my contacts is the consumer, who, despite hiccups reported because of the payroll tax—but maybe more influential in the beginning of the year was the lack of tax refunds and the slowness with which they were paid—continues to spend, presumably by drawing on savings, as employment is not expanding. AT&T, Verizon, GE, IBM, and others confirm that, again, enterprise demand is weak, but consumer-driven demand is strong.

I just want to make a quick comment on defense. The defense contractors I speak to are less worried about the short-term programs, but they actually expect a 10-year decline in terms of spending because they have gone in waves after the ramp-up in the 1990s. So we can continue to expect, regardless of short-term developments in Washington, a slowdown in that activity, and with it a constriction of employment and a drive to further productivity.

As to the global picture, my contacts continue pointing to France as being weak and worrisome. France is “in the dumper,” to quote one major operator there, and you see it in everything from demand for iPhones and computers to theme park traffic. And with regard to China, Steve, my contacts say it’s even weaker, as you reported, than the official numbers, both on the export side and domestically driven. A company like Emerson Electric, which has been operating there perhaps longer than, or as long as, anybody else, just reported its first year-over-year decline in domestic demand starting about two quarters ago. And Apple reports that it’s seeing a slowdown for the first time ever. And my direct Chinese contacts report trouble brewing among the trust companies, with widespread defaults in the gray financial areas expected.

Just a very brief comment, Mr. Chairman, on the financial markets. I discussed views with some 25 market veterans in New York, and you’re going to be coming down as our guest to discuss with some of the local Texas market operators. I would say one consensus, and one only, emerged, and that is that quantitative easing is unambiguously inflating asset prices and, according to some, is distorting financial market functionality. As one said, artificially low interest rates invite fiscal sin. So I’ve been looking for where that sin might occur. We’ve had some discussions around this table in terms of developments in debt markets. There are two that I would hope we would keep our eyes on. One is the percentage of companies that are borrowing with fewer covenants than is customary, the so-called cov-lite issuers. We all know what covenants protect. The lack of covenants typically means that there are few restrictions on collateral and payment terms. And presently at 34 percent, cov-lite issuance is fast approaching its June 2007 peak of 38 percent. In fact, Moody’s has devised a covenant-lite quality index in which a 1 score indicates the strongest covenant quality and a 5 is the weakest, and the March

run rate was 3.76. The other worrisome area, I would say—and we discussed it before; I certainly mentioned it at the last meeting—is the number of weak-credit-quality companies, those rated triple-C, that have access to the primary market. The 12-month moving average of triple-C companies having access to the primary market has hit 46 percent. It is fast closing in on the December 2004 record of 55 percent. Actually, the previous record to that was August of 1998, when you had 85 percent of triple-C-rated companies having access to the primary market. But in 1998, the size of the global high-yield market was \$235 billion. By 2007, it was at \$780 billion, and today it's at \$1.8 trillion. So I think that bears watching.

Those are my comments, Mr. Chairman, with regard to the economic developments. I would say, just, again, bridging to tomorrow, that that doesn't translate into my changing gears and advocating for continued asset purchases. In fact, it hardens my conviction that the efficacy of our current policy may not be as great as you think.

I want to come back to Japan, and Steve's comments on Japan. For Abenomics to work in Japan, as the prime minister has said—and by the way, Governor Kuroda, who was my counterpart in trade negotiations for years, has also said—a third arrow is needed, that is, a regearing of fiscal policy and economic restructuring. What has retarded Japan's recovery for the last two decades, as you mentioned, Simon, has not just been monetary policy. It has been feckless government and poor economic gearing—gearing that should have been adjusted but was not. And I would say for the *n*th time, for the googolplex time, as I've argued at this table, I just want to reiterate my mantra: Unless fiscal and regulatory policy incents business to use the cheap and abundant capital we've made available, it will not be used to create jobs to the degree that we desire. It will be used to set the stage, but it cannot lift the curtain and act the play. And it has, I believe, had a wealth effect, but principally for the rich and the quick—the Buffetts, the

KKRs, the Carlyles, the Goldman-Sachs, the Powells, maybe the Fishers—those who can borrow money for nothing and drive bonds and stocks and property higher in price, and profit goes to their pocket. But it has not done much, at least it seems to me, looking at the data, to put people back to work to earn a living by the sweat of their brow. This is confirmed by the data, including the employment cost index that was released today. The share of labor compensation in nominal nonfinancial corporate output has fallen to record lows. The main source of income for people who work has been steadily shrinking. I think, in the end, Mr. Chairman, I'll conclude here and just tip my hand for tomorrow. I want to remind people that I'm not talking about fiscal austerity; I don't think that's the answer. But a regearing of our economy is extremely important in order for us to attract direct investment in job-creating employment and cap-ex, and I don't see that happening until we have a regearing driven by our fiscal authorities. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. The Eighth District economy continues to expand at a modest pace. Business and consumer sentiment in the District seems to be moderately positive. As one business contact put it, "There is continued subdued enthusiasm for sustained economic recovery." To the extent there is negative sentiment, it often reflects frustration with continuing political gridlock in Washington. A clear bright spot in the District is the housing sector. District real estate market conditions have continued to improve, and prospects for commercial and industrial markets have also become somewhat brighter. One comment from a builder in the Louisville area sums up the feeling: "We're struggling to keep up with demand. Homebuyers are feeling more confident in the economy. The recovery is finally here, and it seems to be real." District labor market conditions continue to improve slowly. The

District employment growth rate has been similar to the national rate over the last six months. The District unemployment rate for 18 District MSAs, at 7.3 percent, continues to run below the national unemployment rate. Large District businesses with daily tracking systems suggested that relative weakness in overall business conditions during March seemed to be reversing, according to the data available in April. To the extent that firms with global reach reported weaker-than-expected results in recent weeks, the weakness tended to be concentrated in markets outside the United States.

Turning to the national economy, I continue to expect real GDP growth at or above 3 percent for 2013, slightly more than the Tealbook forecast. I envision somewhat less drag coming from fiscal retrenchment than the Tealbook, and this likely accounts for the bulk of the difference in the two forecasts. While the decline in government purchases is a negative, I put more weight on the implied decline in future distortionary tax liabilities of the private sector, which provides an offsetting positive effect. Nevertheless, the differences in the two forecasts are not large. I agree with the analysis in the Tealbook emphasizing positive momentum from stronger equity markets, lower oil prices, and the continuing rebound in housing. I continue to expect unemployment to tick down this year, reaching 7 percent by year-end. This is somewhat faster than the Tealbook, but it is consistent with the pace of improvement in unemployment during the past three years—the past three years, which were not great years for economic growth.

On inflation, I'm concerned that the headline PCE inflation rate measured from one year earlier is approaching 1 percent, as is the associated core measure. These are particularly low readings. Both headline and core PCE inflation rates measured from a year earlier have been trending lower since the beginning of 2012. While I expect our very aggressive policy stance to

reverse the trend during 2013, I think this development bears careful scrutiny in the months ahead. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Williams.

MR. WILLIAMS. Thank you, Mr. Chairman. Recent data have been mixed, but the medium-term economic outlook hasn't changed appreciably since our March meeting. Overall, my forecast for growth, unemployment, and inflation is very much in line with the Tealbook's. In preparing for this meeting, I, too, found it helpful to compare how the outlook has evolved relative to my projections from September, when we began the current asset purchase program. For reference, my September forecast was predicated on continuing asset purchases until the fourth quarter of 2013 and on funds rate liftoff in the middle of 2015. Economic growth has progressed more or less in line with my projections from last September, and my outlook for GDP growth hasn't really changed. This outcome reflects offsetting developments that have emerged since last fall. The federal sequestration was a downside risk at the time but is now baked in the cake, but private-sector spending has provided greater impetus. This is especially true for housing, which is benefiting from the low-interest-rate environment. My contacts say everything related to housing is doing well, including windows, furniture, and pickup trucks, reflecting the stepped-up pace of construction and home purchases. House price appreciation has also been more brisk than I had expected, and the economy is benefiting broadly from the effects of the appreciation on household balance sheets and the financial conditions of lenders.

Now, despite economic growth being reasonably close to expectations, two developments since last fall stand out. First, the unemployment rate has come down more quickly than I had expected, although some of that sharper decline reflects falling labor force participation, rather than stronger-than-expected job growth. Second, the downside risks to the economy have

become less predominant. Indeed, some upside risks to the economic outlook have emerged, including an even-faster rebound in housing and stronger global growth, with aggressive policy actions by the Bank of Japan. Overall, I don't see developments since September as arguing for significantly more or less monetary stimulus than I had assumed back then. Accordingly, I still view appropriate policy as including about \$750 billion of asset purchases this year, the same figure as in the new and improved Tealbook assumption.

In coming to that determination, a key issue is how to gauge where things stand relative to our goal of substantial improvement in the outlook for labor markets. Toward this end, my staff examined various measures of the underlying momentum in the labor market and the economy. In particular, they found that normalized six-month changes in a group of economic indicators are highly correlated with future improvements in labor market conditions, measured either by declines in the unemployment gap or increases in total payroll employment growth over the next six months. The indicators that they found were correlated in this way include the six-month changes in private payroll employment growth, initial UI claims, the ISM manufacturing index, industrial capacity utilization, temporary help employment growth, and the difference in the share of households that find jobs hard to get rather than plentiful. Nearly all of these measures of momentum in the labor market are stronger than the historical normal values, signaling that the outlook is for an improving labor market. Moreover, the six-month changes in most of these indicators are stronger than they were back in September, reinforcing the message of an improving outlook for labor market conditions since we started our current asset purchase program. Of course, this analysis cannot tell us exactly where we are relative to the threshold for substantial improvement in the outlook for labor markets. My own reading of the data is that we are not there yet, but we are clearly making tangible progress toward that goal. Now, even with

the pickup in momentum that we see, I expect the pace of improvement in the labor market to be gradual. My contacts tell me that outside of housing, businesses are still cautious about expanding their payrolls. They want to see a sustained pickup in demand for their products or services before stepping up hiring. And in my outlook, with the pickup in economic growth coming late this year, the prevailing wait-and-see mentality may not change quickly.

Turning to inflation, core and total PCE inflation have fallen well below our 2 percent longer-run goal over the past year. Although the low rate of PCE inflation is worrisome, some of the recent decline appears to be due to transitory factors, as discussed in the Tealbook. As a result, I haven't yet changed my medium-term inflation forecast and continue to expect inflation to gradually edge up toward 2 percent over the next few years. Thank you.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. Reports from our contacts in the Fifth District have been mixed, similar to, but a touch more positive than, prior to the previous meeting. I'll share just a few assorted highlights to give you a flavor of what we're hearing. Housing gets mentioned a lot, of course. One manufacturer said that the small uptick in residential activity is having a huge effect for makers of flooring, windows, and cabinets. West Virginia contacts say lumber supply there is constrained by the fact that so many small sawmill operators went out of business during the recession. A commercial construction contact reports that the commercial real estate outlook is quite positive based on strong prospects for health care and data centers. The sequestration, again, featured prominently in many reports, as you might expect for our District. We had the usual plethora of reports of job cuts among government contractors. One contact cited it as a reason that auto sales in Northern Virginia and Maryland are lagging national trends.

In labor markets, demand is said to be very strong in IT, particularly for team leads and middle managers, as well as in advanced manufacturing, telecommunications, and autos. Widespread reports persist that the difficulty in finding skilled workers is constraining hiring. One contact this time, for example, said that a large fraction of qualified applicants can't pass credit checks. We are hearing reports of wage increases associated with difficulties finding workers, particularly in hot areas within IT. An auto parts manufacturer in West Virginia said he raised wages from \$8.50 to \$10 an hour, his first increase in many years. Some employers tell us now they are adjusting hours and holding back hiring to stay under the threshold of 50 full-time-equivalent workers under the Affordable Care Act, or to keep workers under the 30-hour-per-week threshold.

Several of our bankers have reported a shift in lending activity from refinancing toward new lending. That is, almost all of their new business lending had been loans shifted from other banks, whereas now they are reportedly seeing some newly originated loans, brand-new loans. One banker also relayed to us that he has seen a lot of cash transactions for home purchases by folks looking for better returns than they are getting on their savings accounts.

So I'd say the picture we get from our contacts is one of generally improving conditions, particularly in housing, autos, and related manufacturing sectors, but with challenges related to the ACA, sequestration, and finding suitable workers. Our surveys paint a somewhat different picture, however. Both our manufacturing and services surveys' composite indicators were negative in April; manufacturing for the first time since January. The employment components of the surveys were also down from the previous month. We are at something of a loss to explain this disconnect between our surveys and anecdotal reports. Interestingly, the wage-increase components in both surveys remain quite positive.

At the national level, I think we have clearly seen a bit of softening in the data flow. After an encouraging growth spurt in the first quarter, the pace seems to be easing off a bit. We have seen several short-lived spurts in economic growth over the last four years, and at this point, it looks to me as if we're fluctuating around a slow growth trend. This Tealbook features an acceleration in growth over the next year, and it is one that is even more pronounced than in the previous Tealbook. A key driver of that pickup in growth is the general improvement in consumer confidence that leads to a significant decline in the personal saving rate and an increase in consumer spending growth. President Evans was asking about this virtuous circle earlier. Personally, I share President Evans's skepticism. Clearly, households have been quite cautious ever since the Great Recession, and I expect that caution to continue. One argument for an increase in consumer spending growth is that households have already made a lot of progress reducing their leverage. The debt-to-income ratios are still elevated relative to pre-housing-boom levels, which suggests there is more deleveraging to come. Moreover, consumer credit availability is not what it was in the midst of the boom. One can debate whether the pendulum swung too far in the other direction, but given the current regulatory and economic climate, I don't see a major relaxation in credit standards ahead. Certainly, the SLOOS doesn't provide any indication that is happening.

Another argument for an acceleration in consumer spending is that household wealth has increased significantly since the recession. But for any given levels of wealth and income, household spending is also influenced by their assessment of their future income prospects. I suspect, though I cannot prove it, that one of the main reasons consumers are so cautious now is that the breadth and severity of income and wealth losses that they experienced personally, or observed among family or friends during the Great Recession, has caused them to revise the

probability they place on large future income shocks. Prior to the recession, the last big downturn was in 1981 and 1982, over 25 years earlier. It seems plausible that many households came to believe that the Great Moderation was relatively permanent and that future downturns were likely to be shallow and mild. The memory of the Great Recession, which contradicted those views, is relatively fresh in people's minds now. It is likely to fade only slowly, in time. So it is likely, I believe, that for some time, households will act as if a repeat of the income and wealth shocks they suffered in the Great Recession is quite plausible. And this suggests to me that higher personal saving rates are likely to persist for a while, and consumer spending is likely to grow at closer to 2 percent than 3 percent. And without an acceleration in consumer spending, it is hard to see how we would ever get top-line economic growth of 3½ percent. Thank you very much, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. I came into 2013 expecting this would be the year that headwinds substantially abate and allow our best accommodative policies to propel economic growth to a much more positive trajectory. The Tealbook forecast has this shape. Some critical features it mentions include the expected waning of a number of restrictive forces: the economic and financial struggles in Europe, domestic fiscal restraint, and downbeat consumer and business sentiment. I cannot say that these assumptions and projections are wrong. My own staff's analysis continues to be quite similar to the Tealbook's, and I am still expecting an improving economy in the second half of 2013. But I also agree with my reading of the Tealbook's assessment that there is a downward skew of risk to these projections, and a downward skew is really, really troubling if we are contemplating reducing the flow of accommodation sometime over the next few meetings. I also feel that the downward skew has

become more pronounced since we met in March. We simply are not seeing sufficient tangible signs of expanding employment or sustained improvement in businesses' reports to make me confident enough in these projections to advocate changing our pace of asset purchases.

At best, my reports this round were less sanguine than earlier this year; at worst, they were downright sour. “Malaise” is not a bad term to use, as President Fisher mentioned. No one indicated that financial conditions were worse; by all accounts, our accommodative policies are continuing to facilitate business activity. But reduced business and consumer confidence and the sequestration were cited as stronger headwinds. Both Deere and Caterpillar are seeing weaker demand than they had expected across a variety of business lines and geographic areas. Deere has joined Caterpillar in beginning to make some layoffs. They are small for now, but, still, this is backtracking on job growth, not labor market improvement. These cutbacks are mainly at plants that make construction equipment, and that was the same for Caterpillar the last time I talked to them. Deere's construction equipment sales growth has trended negative over the last six months. Earlier this year, they had expected an 8 percent increase this year. These reports are a bit difficult to interpret given the welcome rebound in housing, and many people have mentioned this already. I think this highlights just how small the housing sector is these days. While the growth rates are impressive, the absolute gains are still relatively modest and apparently not enough to require significant additions to the stock of building equipment.

Another telling comment came from the CEO of Motorola Solutions. He said, “It feels like there is more corporate spending on the sideline. There is a fragile economic recovery in the United States. Europe continues to muddle along. And China and Japan are incrementally softer.” I had to check my notes twice to make sure I had the attribution for that quote correct, because the CEO of United Airlines told me just about the same thing. When I talked to him, I

started off thanking him for his time because he was so busy with FAA furloughs and the challenges they were presenting. But he quickly said his larger worry was the fact that business travel had slowed markedly about four or five weeks ago. At the moment, he thinks this is a transitory decline and not yet a persistent change in business travel policies, but he is concerned. And he noted that the drop in business travel has been seen industry-wide. Indeed, all airlines missed their revenue targets this earning season.

An important theme for the macroeconomic outlook is that these downside reports are related to business-sector spending. The Tealbook forecast has the pickup in growth being led by consumption and residential investment, reflecting rising confidence, employment, income, and wealth. For now, I continue to think this is a reasonable story. It is a big piece of my own forecast, and we did see some resilience in the first-quarter consumption data. But a critical element in this story is the self-reinforcing cycle of rising employment and income growth, supporting further gains in household confidence and spending. If the business sector remains jittery and ready to cut back on spending whenever any soft numbers pop up, I have difficulty imagining that the American consumer will be strong enough to lead the growth upswing. After all, can we get the boost to income and confidence we are looking for if firms are not willing to commit to expanding capital and labor? At the moment, I am still reluctant to downgrade my forecast materially, but I definitely think there is more cause for concern than a couple of months ago, when I was only worrying about being complacent over the expected upswing in activity.

Having highlighted the headwinds to economic growth, I do want to emphasize that I still see our accommodative policies playing a strong and effective role in supporting the activity that we have seen. My contact reports included several examples. The auto companies repeatedly tell me that low financing rates are helping sales, and our financial contacts and banking

directors continue to point to the strength in refinancing activity for both the household and business sectors.

Now, what about inflation? Well, inflation continues to be low, as many have mentioned. And I don't think it's too early to be getting nervous about this. None of my contacts cited price pressures. For example, a large steel manufacturer noted that their raw materials costs have come down and are expected to stay low for quite a while. At the same time, he said they face price margin pressures themselves, suggesting to me—this is my inference—that they would likely need to lower their own prices sometime in the near future. With regard to wages, well, no one mentions anything about wage pressures. And I did take note earlier of President Bullard's public intermeeting comments that the day may be approaching when we should be concerned about inflation being too low. I think that day is already here. After all, year-over-year PCE inflation is 1.0 percent. Judged against our 2 percent long-run objective—how would we feel if inflation were 3 percent? Not so good. And our Chicago Fed yield curve models continue to show three-year-ahead inflation expectations below our 2 percent long-run objective as late as 2020. Now, that is expectations, not inflation compensation the way that the TIPS market often gives us.

When I combine the low inflation outlook with the downside risk skew for the economic projection, I come to the conclusion that we need to maintain our full pace of accommodation until the data strongly indicate otherwise. That is, at least maintain the current pace. I seriously worry that if we prematurely ease off on our flow of accommodation, we could see outsize and counterproductive effects on both employment and price stability. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. I understand coffee is ready. Why don't we take a coffee break and come back at 4:10 p.m.

[Coffee break]

CHAIRMAN BERNANKE. Okay. If we're ready to recommence, I'll call on President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. On balance, the incoming information indicates that the Third District economy continues to expand at a modest pace. The Philadelphia Fed's coincident indexes have increased for all three of our states over the last three months; they are also up year-over-year. Our leading indexes by state for the District point to continued growth over the next six months. Business contacts from those surveys remain optimistic about the outlook. Our real-time business conditions index indicates that the most recent data are positive, and that means that the index is above its long-term historical average.

On the positive side, construction activity and construction employment have picked up in recent months, with house prices rising in both Pennsylvania and New Jersey. The CEO of an international flooring company reported that his residential business has picked up significantly, and he noted that lumber costs and other inputs to the housing construction industry are rising. Payroll employment continues to expand in the District, although at a slower pace than at the end of last year. The region's unemployment rate fell 0.3 percentage point in March to 8.6 percent. Both New Jersey and Pennsylvania saw declines. New Jersey was particularly relevant because its employment rate had spiked earlier last year. Staffing firms reported small increases in billable hours over the past two months and expect that trend to continue for the near future, based on their incoming work orders. On the other hand, firms directly affected by the sequestration—for example, both defense-related work and others depending on federal money—are anticipating somewhat lower levels of employment and activity for the remainder of the year. Overall, uncertainty about the strength of the expansion as well as the regulatory

outlook appears to be tempering hiring. Even though the manufacturing employment index was down, regional manufacturing activity held steady in April. The general activity index for our BOS dipped from 2 to 1.3. Smoothing through the index's seesawing behavior over the last three or four months, the survey indicates there has been little change in activity since the start of the year. Manufacturers continue to expect, however, that business will pick up over the next six months, with indexes of future activity, new orders, and shipments all in solid, positive territory.

Our directors and contacts in the financial industry continue to express concerns about the effects of “the search for yield,” as they say, and resource allocations. Concerns about the risk of what they call a “spike” in long-term rates are leading many investors and firms to go long on credit risk, including high-yield debt and such things, and short on duration. They are also looking at more and more issues—such as the issuance of covenant-lite loans, as President Fisher alluded to earlier.

In the face of some mixed data, I have made little change in my national economic outlook since our last meeting. The March payroll employment increase was below expectations but, in percentage terms, by about the same degree as the February was above expectations. The unemployment rate declined slightly, and the broad measures of unemployment, which include marginally attached workers, saw some more significant declines. Hours worked and wages also rose modestly. While the advance estimate of first-quarter GDP growth came in a bit below consensus, the composition, in my view, is actually more encouraging than that. Inventory investment was lower than expected, which suggests less of a drag in the next few quarters. Consumer spending grew at the surprisingly healthy rate of a 3.2 percent. The decline in personal income was, really, largely expected given the surge in fourth-quarter income due to the factors, including anticipation of the tax increases, which boosted fourth-quarter personal income

figures. The major offsets arose from declines in government spending and net exports. Overall, I read the report as modestly positive.

For now, despite some of this recent weakness, I continue to anticipate that the economy will average near 3 percent over the next two years before slowing to trend, which I now estimate to be about 2.5 percent. I may be pushing my luck with the 2.5 percent, and I am actually contemplating whether that might be lower, but for now I'm keeping it at 2½. I'm more optimistic than the Tealbook on the pace of decline in unemployment. I expect to see the same pace of decline that we have seen over the last three and a half years, which has been about 0.7 percentage point a year for each of the last three and a half years. If we continue at that pace, this implies that the unemployment rate will gradually decline over the rest of this year, reaching nearly 7 percent by year-end. And continuing through 2014, it would be below 6½ percent by the end of 2014.

As yet, I don't see much cause for concern that the recent declines in commodity prices are indicating a more persistent decline in inflation. These are more like one-time shifts of the level of prices from their unusual highs, not sustained movements that might lead to precursors of sustained deflation. But, of course, I think we need to be very watchful. I would grow uncomfortable should inflation continue to fall and there were signs that inflation expectations were beginning to drift downward. Inflation expectations, however, have remained mostly range bound, which is good. On the other hand, I do see some greater risk for upside inflation in the longer term, given the expected trajectory of monetary policy.

I continue to see the risk of the rising size of our balance sheet, and the risks grow as we near exit. Indeed, with the high volume of reserves, I am concerned that any missteps in our exit that perhaps delay or slow down our efforts to reduce the accommodation at that time could be

more costly than usual. As a consequence, I continue to believe we should see tapering of our LSAPs with the aim of ending them sometime this year, similar to the Tealbook assumption. I am concerned that we are overly confident in our ability to manage the expectations of the public and in the impact of our nontraditional policy tools on the economy. I think we should continue to remind ourselves that we are in new territory and that there is limited research and experience for some of these tools and how we behave at the lower bound. Yet we seem to believe that we can fine-tune them. Moreover, because the tools work through affecting expectations, we are assuming that the public understands these tools and that we can adequately and credibly communicate our intention. This oftentimes seems to me a heroic assumption. For example, the memo on changing the pace of asset purchases suggests that we can use our policy tools of LSAPs and forward guidance independently, and, therefore, we can use one tool to offset or compensate for the effects of the other. At our last meeting, this idea was discussed in the context of possibly reducing the LSAPs, driven by our assessment of costs and benefits, and this would likely be viewed as a tightening move. Another suggestion has been that we keep our balance sheet larger for longer by refraining from asset sales altogether, and this would be seen as an easing move. Some recent research by the Philadelphia staff suggests that using one tool—for example, forward guidance—to offset the effect of the other—for example, the size of the balance sheet—is not as straightforward at the zero bound as you might think. This suggests to me we should be very reluctant to signal that we will not engage in asset sales at this point. We simply do not know enough about the interactions between our balance sheet, forward guidance, and the future path of the funds rate in achieving any given level of accommodation. I'll have more to say about this when we discuss the exit strategy. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. I haven't made significant changes to my forecast since our last meeting. I continue to expect a gradual pickup in GDP growth and a reduction in unemployment, and a gradual rise in inflation toward our 2 percent objective. Given the small revisions I have made to my outlook, I won't spend time reviewing my outlook. Instead, I will focus my comments on three topics: the anecdotal support I'm hearing for continued moderate economic growth, my interpretation of recent progress in labor markets, and my interpretation of the low readings on PCE inflation.

Starting with the anecdotal reports, my District contacts continue to see moderate growth in economic activity. While my contacts from the export-focused businesses offered some notes of caution, most of my District contacts have indicated that they see continuing growth in their activity level. And a clear bright spot in my District reports was the housing sector—despite the fact that in my District we still have a substantial backlog of foreclosures and we have seen only moderate appreciation in home prices. Even in my District, we are seeing some progress. The CEO of an international company that supplies paints that is headquartered in my District reported robust demand for paint for both new home construction and remodeling. Interestingly, demand for paint is strong even in areas of the country that are still working through foreclosure gluts, like my District. He also noted that paint contractors' purchases of capital equipment, which is a forward-looking indicator, are also up sharply this year. So, overall, his company is projecting both new home construction and remodeling to remain robust for some time. And this domestic strength may be an important offset to weak international growth.

Let me turn from my anecdotal reports to labor markets. While the March report on labor market activity certainly wasn't encouraging, I am not inclined to view it as discouraging either. Despite the weakness in payroll gains in the month of March, the three-month moving average, a

much less noisy indicator of progress, stands at a respectable 168,000 jobs per month. Relative to the likely trend rate of growth, this pace of job gains represents solid progress in the labor market. As the Tealbook has noted, powerful demographic forces continue to drive the trend rates of labor force participation and labor force growth lower. To see the implications of these declining trends, consider an extreme scenario in which, over the next couple of years, the actual participation rate declines in lockstep with a trend estimate like the one shown in the Tealbook. Under these circumstances, a slow rate of job growth, as low as we have observed in the month of March, would still be enough to gradually lower the unemployment rate. Of course, much of the currently low participation rate is likely a reflection of the recession versus a reflection of demographic trends. But, arithmetically, the fact that the trend is continuing to decline means that the pace of job gains needed to lower unemployment is much lower today than it would have been 10 years ago. In that case, continued employment gains along the lines of the last three months should perhaps be considered as substantial, again, unless we start to see a cyclical bounceback in the participation rate.

I will now turn to my third topic—the low readings on PCE inflation. While PCE inflation has been consistently running below our 2 percent long-run objective and dipped yet lower in March, the CPI-based measures have remained relatively stable. This suggests to me that PCE inflation is unlikely to fall further. On a year-over-year basis, the recent declines in PCE inflation and the stability of various measures of CPI inflation, including the median CPI, indicate that the divergence between CPI and PCE inflation rates has increased. The current differential between CPI and PCE rates is largely due to the larger weight of shelter costs in the CPI. I would be more concerned about disinflation if the cost of shelter, the single-largest component of the consumer's out-of-pocket funding, was decelerating and pulling down both the

CPI and the PCE inflation. Another reason I put considerable weight on CPI measures in judging price trends is that households and businesses are more focused on CPI inflation than the PCE measure, so the CPI should be more influential in the formation of inflation expectations. While the Cleveland Fed estimates of inflation expectations remain low, they have also been stable in the face of PCE disinflation.

As to the balance of risks around my outlook, I continue to view the risks as tilted to the downside for GDP growth and tilted to the upside for unemployment. This is due primarily to the ongoing fiscal challenges we are facing as a country and the potential for some slowing in economic growth abroad, especially in China. In contrast, I see the risks to the inflation outlook as broadly balanced. The downside risks stem from the potential for a faltering recovery to pull inflation lower, while the upside risks follow from the ongoing public worries about our large balance sheet that could trigger a rise in inflation expectations. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President George.

MS. GEORGE. Thank you, Mr. Chairman. The District economy expanded moderately since the last meeting, although the drivers of growth shifted from commodities to consumer spending and housing. Commodity markets, which have been a cornerstone of District growth in recent years, appear to have reached a plateau at a historically high level but with limited growth in recent months. With relatively stable energy prices, District drilling rig activity remained flat over recent months, and farm incomes are projected to ease, given lower futures prices for both crops and livestock. Farm exports, which had doubled since 2006, are projected to be flat in 2013, with a 6 percent decline in exports to China. Manufactured exports, which rose between 15 and 20 percent in 2010 and 2011, are flat compared with a year ago. In contrast, consumer spending has rebounded since the last meeting, with District unemployment now at 6 percent.

Auto sales bounced back in March, and District retailers reported modest but stronger-than-expected sales. Residential real estate activity continued to strengthen, even as some builders noted that a lack of available subcontractors and the rising cost of building materials could constrain construction in the coming months.

Turning to the national economy, I have not altered my forecast, despite some softer data since the last meeting, and continue to expect moderate economic growth this year of around 2 percent. Fiscal policy is a drag on growth, and business investment remains soft, while consumer spending is getting some support from lower gasoline prices. The wealth effects from higher equity valuations and home prices have been positive, although they have yet to convincingly translate into actual consumption demand. To the extent these stock market gains are situated at the very high end of the wealth distribution, as some recent research by the Pew Research Center suggests, the propensity to spend out of that wealth is likely to be less potent. On the other hand, as housing prices continue to recover, these gains should be more broadly distributed.

Signs of improvement in labor markets continue, despite a weaker employment report for March, and the underlying conditions in the labor market may be stronger than the data suggest, as we have seen in the past. Recall that the initial estimates of net employment growth for the first four months of 2011 and 2012 were about 175,000. Job gains were then first reported as falling from May through August to a monthly pace of about 50,000 in 2011 and 100,000 in 2012. The revised data, however, show monthly job gains over these periods in both years were about 135,000—not great, but substantially above the initial estimates. In addition, the spring and summer of those years were accompanied by notable external shocks and risks, such as the Japanese tsunami and earthquake, floods in Thailand, and intensification of the crisis in Europe.

Certainly, we are still facing a number of external risks, but these risks appear to be attenuated compared with the prior two years. Other labor market indicators, such as claims and quit rates, also continue to show gradual improvement. Inflation remains low, and I continue to watch a five-year, five-year-ahead tradable measure of breakeven inflation that remains about 25 basis points above its level late last summer and is only a few basis points below its level at the last meeting. So I anticipate an improving economic growth and labor market outlook will support firmer inflation over the medium term. Thank you.

CHAIRMAN BERNANKE. Thank you. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. With unemployment under 5.5 percent, the Ninth District continues to enjoy very good economic conditions relative to the rest of the country. But this relative success should not be confused with absolute success. For example, nonfarm payroll employment in Minnesota and Montana, two states that contain over two-thirds of our District's population, is essentially the same now as it was six years ago, meaning that both states are falling well short of creating enough jobs to keep up with population growth. Outside of the oil boom area in western North Dakota and eastern Montana, the slow growth of employment seems likely to continue. In particular, our conversations with local business leaders in the intermeeting period suggest that they remain cautious about expanding hiring. And their caution springs from uncertainty about two related factors: the strength of the national global economy and the impact of federal government policy changes, especially the Affordable Care Act.

I was concerned that some local business contacts, as well as some financial market participants with whom I spoke, saw monetary policy as being a source of policy uncertainty. These interlocutors—that's a tough word, but I got it—saw any tapering of the asset purchase

program as signaling that the Committee was highly likely to take additional tightening steps in immediately subsequent meetings. Here, these contacts are reasoning by analogy with past Committee actions. For example, in mid-2004, the fed funds target was 1 percent. The Committee raised the target at the June meeting by 25 basis points, and then proceeded to do the same at the next 16 meetings before stopping two years later. The parallel in the current circumstances is that tapering would be the first step of the exit process and would be followed in relatively short order by the Committee's raising the fed funds rate. These types of beliefs mean that there is a risk that any tapering of our purchases could be seen as the signal of a rapid decrease in the level of accommodation, and it follows that tapering could generate a much sharper tightening of financial conditions than we currently anticipate. This risk is obviously much higher if we choose to taper without clear evidence of a substantial improvement in the labor market outlook. And here—and I'll leave my script to say this—I think we have to be careful not to be defining “substantial” so as to sort of fit the conditions we want. Credibility means that the word you use means what people think it means. And I think it is very challenging for us to go back ex post and say, “Well, really, by ‘substantial,’ I meant ‘this.’ And you might not have thought that, but that’s really what I meant.” I think that does not sound like the communication of a credible individual or agency, at least to me. One way to mitigate this risk of people worrying about a rapid decrease in the level of accommodation following any tapering is to pair tapering with another offsetting policy step that is clearly designed to ease financial conditions.

Let me turn to my outlook. Under the Committee's current monetary policy stance, my modal outlook is that inflation will run below our target of 2 percent for two to three years—that's slightly softer than my outlook was at the last meeting—and that unemployment will

remain elevated for even longer than that period. This outlook is similar to the Tealbook's and, I think, to the outlook of many of you around the table—at least it was in March, and it doesn't sound like that has changed that much. It implies that we are falling short relative to both our inflation and employment objectives. Now, if you go back to our January principles statement, it says explicitly that the Committee seeks to mitigate these kinds of deviations from our goals. We can only fulfill this policy commitment that we made in our January principles statement by providing more accommodation.

In reaching this conclusion that we need to provide more accommodation, I focused exclusively on my modal outlook. And of course there are risks to that modal outlook. In particular, we have seen in 2008 and 2009 how a sharp deterioration in financial conditions has the potential to lead employment and prices to fall rapidly. And it is possible that reducing accommodation would reduce that kind of tail risk by constricting the degree of frothiness in financial markets. So that raises the question, can this possibility justify tightening monetary policy at this time? At our last meeting, I sketched out how we might think about answering this question, and last week I distributed a memo that provides more details of my proposed approach. What I'm hoping is that this memo will help to foster a productive policy conversation about the intersection of financial stability and monetary policy. In my view, I think we need to be talking explicitly, both internally and, eventually, externally, about the magnitude of tail risks that we see due to possible financial instability. And we need to be talking explicitly both internally and, eventually, externally, about the ability of monetary policy to ameliorate those tail risks. As I have just suggested, and as my memo suggested, I do anticipate that these tail risks will be an important part of our policy deliberations, but only when the economy has improved more. As my memo indicated, right now I think that it is hard to

argue in favor of tightening for financial stability reasons, given how far we are from our dual mandate objectives. There is simply insufficient tail risk to employment and prices to outweigh the more basic need for additional accommodation implied by the modal outlook.

Mr. Chairman, last September we communicated our commitment to do whatever we can to support the economic recovery as long as inflation remains under control. I will say again that I think we felt there were sentences—I'll call them almost footnotes—that reduced that “whatever we can” feel to our statement. But, of course, communication is about what you hear, not just what you say. And I think what people heard was we were communicating our commitment to do whatever we can to support the economic recovery, as long as inflation remains under control. In January, we reaffirmed our commitment to 2 percent target inflation. I think my own outlook is such that tightening at this time or in the near term will erode the credibility of both of these commitments. Indeed, I would say that we can best support the credibility of our commitment to our dual mandate objectives by adding accommodation, not removing it. Fortunately, thanks to the work of many people in this room over the past five years, we do have many tools at our disposal. We can generate a large amount of stimulus by combining those tools in different ways. This means that we can, if we desire to do so, reduce the scale of the asset purchase program and still act so as to increase the level of accommodation. And I will have more to say about this point in the next go-round. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Mr. Chairman. My view is that uncertainty about the near-term outlook is quite high. We have a tug-of-war between improving fundamentals—the household balance sheet, housing, U.S. energy competitiveness, a high level of corporate profits, and the amount of cash on the corporate balance sheet—versus substantial

fiscal restraint. In January and February, the improvement in the fundamentals appeared to be winning out, in March the fiscal restraint. But March was a very cold month weather-wise, seasonally adjusted, and that may also be distorting the outlook. My expectation, which I don't hold with great confidence, is that the contractionary fiscal impulse will dominate over the near term. I think we already see some of the effects of that in some of the March data. The softer payroll gain in March might be part of that picture, but I wouldn't put much weight on that single payroll number by itself. It's the confluence of a wider array of weaker indicators that have gotten my attention.

I agree with the Tealbook that economic growth will be slower in the second quarter, but I actually differ a little bit after that. For example, I'm a bit more pessimistic than the Tealbook for the second half of the year. The Tealbook is at about $2\frac{3}{4}$ percent growth, and I'm in the range of $2\frac{1}{4}$ to $2\frac{1}{2}$ percent. The reasons why I'm a bit weaker than the Tealbook are pretty straightforward. First, I think the amount of fiscal drag is large relative to the underlying momentum of the economy. If you are very generous, you might put the underlying trend in economic growth at a little bit north of 2 percent. I think you have to really work to get to that. Second, when we think about the factors that could cause an impulse to growth to offset the fiscal drag, it seems it is hard to tell, at least in my mind, a very compelling story. I like to look at the accounting identity to think about impulses to growth. The public savings balance plus the private savings balance equals the current account balance. And just look at what is going to happen to those three indicators. The current account balance just doesn't seem likely to move much. U.S. competitiveness is rising with the decline in relative energy costs, but the growth outlook abroad has weakened, so the trade sector looks like it is pretty close to neutral. The public balance is moving to a much smaller deficit this year, which restrains growth. That means

we need an offsetting shift in the desired saving balance of the private sector to offset the shift in the public balance. If this doesn't happen, of course, the accounting identity will still hold, but it will happen by the economy being weaker, with the budget deficit shrinking by less as economic weakness constrains receipts and boosts safety-net outlays and the trade balance improving because imports will weaken. Balance would be restored, but not in a particularly good way. And I think the risks are that this is what is likely to happen. Economic growth will disappoint because, ex ante, the narrowing in the fiscal balance will be larger than the desired ex ante drop in private balances. That's what I'm worried about.

Longer term, I expect that the improving fundamentals will ultimately reassert themselves. I take some comfort from the improvement in financial market conditions and the fact that the housing sector should continue its recovery. But, to me, this doesn't seem likely to happen until later this year, when the negative impulse from fiscal policy starts to lessen. And it won't be until then that I really can be more confident about the outlook so that I could actually see it as credible to turn down the dial in terms of the rate of asset purchases without that threatening what we have promised.

On inflation, I don't make too much of the fact that inflation is coming in a little bit lower than expected. I think I agree with the staff that some of this is likely just noise; nonmarket measures, for example, have been very, very low. Also, with inflation expectations still well anchored, I think this is a force that will pull inflation back toward 2 percent over time. We certainly don't have much near-term risk on inflation to the upside, but I'm not particularly worried that the underlying inflation trend will fall much further.

In terms of the risk to the outlook, I continue to be worried about Europe. The good news is that the markets are generally taking Cyprus as a one-off, and the ECB's OMT still

miraculously, at least to me, seems to be effective in capping borrowing costs in the periphery. But there is still plenty of offsetting bad news. Since the last meeting—this is very consistent with what, I think, Richard Fisher talked about—when I talked with people in private equity and industrial companies, they are seeing a lot more weakness in Europe, and, in particular, with respect to France. And that's important because France has had pretty much a free pass from the markets up to this point. Also, as we see in Italy, political support for further austerity is slipping. That's okay if a consensus develops that further austerity can be dialed back a bit, but it's not obvious that the core countries are really going to support that. Most significantly to me, the transmission channels of monetary policy in Europe are not working well, with the borrowing costs in the peripheral countries very elevated despite the low ECB refinancing rate. And that is not an easy problem to fix. Even if the ECB were to cut the refinancing rate this week, it wouldn't do much except signal the ECB's concerns. After all, as Simon pointed out, the EONIA, the euro overnight index average, rate is less than 10 basis points right now. So to cut the refinancing rate from 75 basis points is not really going to pass through in terms of borrowing costs to any significant degree.

What is needed for Europe is really hard; that is a pan-European banking union. That is difficult, and it's going to take quite a bit of time. Some of the problems include the tension that is going to exist between the incentives of the ECB and the national supervisory authorities. The ECB is going to want to scrub the banks clean and replenish their capital. The national authorities are going to resist that. They are not going to want to identify capital holes. After all, that would reflect very badly on their own regulatory oversight. Second, even if the ECB wins out, it is not clear where the capital will come from. The ESM is actually a very inefficient mechanism for directly recapitalizing banks because direct bank recapitalization, dollar for

dollar, has a much larger impact on ESM's creditworthiness compared with having the ESM recapitalize the banks indirectly by providing the money to the sovereign, which then would pass the money on to the bank. But if the recapitalization occurs via the sovereign, it just increases the government indebtedness of the sovereign and just reinforces the linkage between the sovereigns and the banks, which we are trying to cut. Third, even if the ECB scrubs the banks clean and gets them recapitalized, that is not sufficient. You still need a pan-European resolution regime and a pan-European deposit insurance system to make a euro a euro throughout the euro zone. And that is very controversial among some of the core countries, and not simple or quick to implement.

Finally, in terms of the labor market—because we have had a lot of discussion around the table about the labor market, I just jotted down a few quick thoughts. I think we have made some progress, but, to me, it is difficult to assess how much progress in two important respects. First, the payroll gains have been strong relative to the underlying economic growth trend. And when we have seen that before, we have ultimately been disappointed in terms of the sustainability of the payroll employment trend. And, second, the drop in the unemployment rate seems to exaggerate the pace of improvement in underlying labor market conditions. When I think about the labor market outlook the key to what constitutes substantial improvement in the labor market outlook is really not just how much the labor market has improved, but the confidence level that we attach to seeing further improvement. Given that I am pretty uncertain about the near-term outlook, and that I have some big questions about why we are seeing such large declines in the unemployment rate relative to everything else, we haven't yet, in my mind, gotten over the threshold of substantial improvement in the labor market outlook in terms of my confidence level. Thank you.

CHAIRMAN BERNANKE. Thank you. Governor Yellen.

MS. YELLEN. Thank you, Mr. Chairman. I see the news that has rolled in since our March meeting as mostly on the soft side. I am concerned that weak readings on production, spending, and payroll employment portend a fourth consecutive spring swoon, and I am worried that progress in the labor market may stall. But it is premature to rush to judgment, and I am determined to watch and wait with an open mind.

In my remarks today, I will focus on developments in the labor market, because the objective of our asset market purchases is to achieve a substantial improvement in the outlook.

Many market participants read the March employment report as dismal. The establishment survey suggested widespread weakness in payroll employment growth, and analysts noted that the two-tenths percentage point decline in the labor force participation rate more than accounted for the one-tenth of a percentage point decline in the unemployment rate. They concluded that labor underutilization had likely increased, notwithstanding the decline in the unemployment rate. Because the division in the household survey of those without work between the categories of unemployed and out of the labor market is somewhat arbitrary, the decline in unemployment could mainly reflect shifts between these categories as would occur if those out of work searched less intensively or abandoned job search entirely to undertake further schooling or engage in nonmarket activities. This interpretation attributes much, if not all, of the decline in labor force participation to cyclical, not structural, factors, so that between the decline in unemployment and that in participation, on net, resource slack increased. An alternative possibility is that the decline in the unemployment rate reflected genuine diminution in labor market slack. In this interpretation, the decline in labor force participation would reflect

structural factors that have been responsible for an ongoing decline in the labor force participation trend.

As far as last month's employment report is concerned, I find the evidence more consistent with the second interpretation. As the Tealbook notes—and Bill mentioned this—the number of marginally attached, discouraged workers, and individuals working part time for economic reasons declined in tandem with the unemployment rate, and U6, a measure including all of these additional categories, fell by a whopping $\frac{1}{2}$ percentage point. Although each of these additional measures is noisy, the decline in the fraction of the workforce that is working part time for economic reasons was sizable. This particular measure of slack has been highly correlated with the aggregate unemployment rate since the onset of the recession, both over time and in a cross section of U.S. states. The sizable step-down in part-time employment, coupled with the decline in the numbers of discouraged and marginally attached workers in March, suggests to me that despite weak payroll employment growth, there may actually have been some further improvement in the labor market.

These alternative possible interpretations of last month's employment report highlight an important and more general point—namely, that to assess the overall extent of labor market slack, we need to factor in estimates of both the deviation between actual unemployment and the natural rate, as well as any deviation of labor force participation from its trend. Stated differently, the shortfall of employment from its maximum level, which monetary policies should seek to minimize, is the weighted sum of two gaps: the unemployment gap and the labor force participation gap. Unfortunately, like so many of the unobserved trends that are critical for the assessment of slack, estimation of the trend participation rate is fraught with uncertainty, and debates are now raging in the literature over its magnitude. Board staff have made important

contributions to this debate, and their assessment is incorporated into the Tealbook. The Tealbook judges that the decline in labor force participation since the onset of the recession reflects a combination of structural and cyclical factors, with the cyclical shortfall currently amounting to about 0.7 percentage point. Importantly, this participation gap is the largest estimated cyclical shortfall since the 1960s, exceeding the estimated shortfall in the deep recession of 1981–82 and during the jobless recovery following the 2001 recession. The consequence is that the unemployment gap currently understates the employment gap—namely, the overall degree of labor market slack—by an exceptionally large margin.

Like President Pinalto, I, too, performed a simple calculation. My objective was to illustrate the magnitudes involved. Using the Tealbook's assumption that the natural rate now stands at 6 percent, the unemployment gap amounts to 1.6 percent of the labor force, or about 2½ million jobs. And the 0.7 percentage point shortfall of actual from trend labor force participation translates into an additional roughly 1.7 million jobs. So the overall shortfall of employment from its maximum sustainable level, the employment gap, currently stands at about 4.2 million, or 1.7 percent of the population. By this dual mandate metric, we are falling very short of meeting our maximum employment mandate.

My back-of-the-envelope calculation is obviously sensitive to the assumed labor force participation trend. However, in comparison with other recent studies, the staff's estimate of the trend labor force participation rate is decidedly on the low end. Two very recent studies, in contrast, estimate that the cyclical shortfall in labor force participation is more than twice as large, which translates into an employment gap substantially larger than my 4.2 million estimate. Of course, if the actual pace of trend decline in labor force participation is much smaller than the

Tealbook assumes, this might also call into question the plausibility of my more optimistic interpretation of last month's employment report.

Confronted with such uncertainty, how should policymakers respond? Research by John Williams, Athanasios Orphanides, and others suggests that uncertainty about the natural rate or, more generally, the level of labor market slack should lead prudent policymakers to deemphasize estimates of the level of resource slack in setting monetary policy. They should instead respond to inflation and changes in output gaps. These studies were penned, however, in the good old days, when the short-term rates were unconstrained by the zero lower bound. They assumed that the welfare costs due to an incorrect estimate of the natural rate are symmetric around the true natural rate. With policy constrained by the zero lower bound, however, the costs from inadvertently reducing accommodation due to an overestimate of the natural rate greatly outweigh those from policy errors reflecting an overly optimistic natural-rate estimate. This suggests that we should be more concerned about the possibility that slack is wider than we currently estimate than that it is lower. Moreover, accumulating evidence suggests the long-run Phillips curve is extremely flat and not vertical at low inflation rates, likely reflecting downward nominal wage rigidity and well-anchored inflation expectations. With a vertical Phillips curve, declining inflation alerts a policymaker, albeit perhaps with a lag, to the presence of a large employment gap. So a strong response to declining inflation could be sufficient to stabilize employment near its maximum level. In contrast, a failure to take into account the level of the resource gap produces poor results when the Phillips curve is flat. In this case, movements in inflation provide relatively little insight into the size of the employment gap.

What conclusions do I draw? First, I see clear evidence that the employment gap is currently far wider than the unemployment gap on its own suggests. And I think it is a mistake

to interpret the relative stability of inflation as evidence of modest slack. We should thank our lucky stars that we are not seeing any pernicious downward spiral in inflation. Even so, inflation has declined, and it is now running notably below our 2 percent objective. This means that inflation developments, on their own, point to the need for additional policy accommodation, reinforcing the argument for increasing policy accommodation.

CHAIRMAN BERNANKE. Thank you. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. Like many of you, my assessment of the economic outlook hasn't really changed much since the beginning of the year. But with my optimistic nature, this seems positive to me because I view the mixed data that we've received as indicating that we might weather the year-end tax increases and the beginning of sequestration with less damage than many might have anticipated. If the economy continues to grow at better than 2 percent this year, that resilience in the face of fiscal consolidation would give me a fair amount of confidence that we could finally see some real traction as the fiscal effects fade.

Turning to banking conditions, my calls in preparation for this meeting caught the bankers fresh off their earnings calls. Anyone who says banks are unwilling to lend just isn't listening. In addition to the need for loans to bolster interest margins, bankers are keenly aware that analysts are focused on loan growth, and they are jittery that recent softness in loan demand could cause the next few quarters to disappoint. Most confess that recent production is primarily refinance and market-share movement rather than truly new borrowing. Competition for commercial loans and auto loans remains fierce. Credit card volume is moving sideways. The industry expects credit card growth to come primarily in the lower FICO bands, but it is unclear who is willing to lend there and at what price.

Improvement in commercial real estate fundamentals, such as vacancy, rents, transactions, and prices, is slow but persistent, and financing is responding similarly. Mortgage refinancing volume is choppy and quite interest sensitive. Pipelines are no longer being filled by what walks in the door, and the banks are actively soliciting refis, especially HARP-eligible refis. Credit losses are now at or below historic norms, and, even in mortgages, the transition rates into delinquency are approaching pre-crisis levels. And the pipeline of foreclosures is being slowly worked down through modifications and short sales, as well as actual foreclosure. Overall, deleveraging by consumers and businesses appears to be largely complete, but there doesn't seem to be much appetite yet to re-leverage.

Meanwhile, the recovery in housing continues. The National Association of Realtors reported March buyer traffic up 25 percent over a year ago, even as inventories continue to shrink. Distress sales were down to 21 percent of total sales in March. All measures of house prices continued to climb, and average time on market continued to go down. I have been reading about some of the earnings calls with homebuilders, and their story has shifted dramatically from lack of demand to supply-chain problems.

Notwithstanding the disappointing jobs number in March, it still looks to me like the private sector is finally on firm footing. So I'm glad that we do have two more payroll reports before our June meeting, and we'll be paying attention to both the initial readings and the revisions to prior months. Like President George, I took a look at revisions to employment reports in the past. I remember being on the fence about what to do last year at the September meeting, until the Chairman argued that the August payroll figure, at 96,000 net jobs, seemed to demand action. But after the October payroll report revised August jobs up to 192,000, and the July number up from 141,000 to 181,000, the current estimates for those months are now

153,000 for July and 165,000 for August. So I still wonder whether our actions might have been any different if the initial report and the subsequent revision had gone in the opposite direction, and I have definitely learned to be wary of single-month numbers. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. I think, as many of you have already noted explicitly or implicitly, the data since the March meeting raise exactly the kind of question that a lot of us anticipated during our last meeting, namely, whether the burst of stronger job and other numbers in the preceding months was going to be followed by a relapse. I wasn't going to say anything about labor markets. I was actually going to go to some of the issues that Charlie Evans has already raised, but because many of you have commented on labor markets, I thought I would say a couple of things.

A few weeks ago, I began the proverbial deeper dive into what's going on in labor markets. And it's pretty murky down there, and the murkiness is not just near-term murkiness. I've been talking with a bunch of non-Board labor economists. I talk to the Board labor economists all the time, but I've been talking to a bunch of non-Board labor economists, and three things come through despite the variations in their views. First, they readily confess to not really understanding what was going on in labor markets before the crisis and recession, that is, the decline in dynamism of U.S. labor markets over the preceding 10 to 15 years. Second, they all have the intuition that there is less distinction between cyclical and structural factors than we might otherwise have thought. And they have the intuition that what we're going through right now is having an effect on structural trends, but they find it difficult to specify exactly what. But third, they all seem to think that no matter how that debate turns out over the coming years, we are nowhere near, at this point, whatever full employment would look like, particularly when you

take into account the kind of analysis Janet just did of effective underutilization as opposed to just nominally stated underutilization. They will say things like, “Well, you know, it may be that there’s been a good bit of structural damage, but that’s not showing up now. It’s not going to show up for a while.” So talking to me as a monetary policymaker, they say “don’t worry about that now. There may be other things to worry about—and maybe next year or the year after—but not right now.” I think we’re all going to have to dive down to those murky depths over the next couple of decision points, but my guess is that it is going to be hard to come to a highly precise sense of how much is cyclical, how much is structural, and whether there are huge amounts of slack or just moderately huge amounts of slack. And so we’re going to have to move some on intuition.

One of the other two things I did want to note is that, as Charlie observed earlier, even though the jobs number may have been the most eye catching, maybe the more significant trend over the last couple of months is in business investment. We’ve had a couple of years now where businesses seem to have been compensating for the collapse of investment during the worst stages of the crisis and recession, but capital expenditures now seem to be leveling off as they return to something approaching their historical averages. And I thought it was interesting that one of the newsletters put out by one of the financial firms last week noted that a lot of large businesses are saying that they’re essentially done with investment until they see enough additional demand to justify more spending. That is, they’ve caught up with the spending that they didn’t do during the recession that they needed for replacement or other purposes, but now they’re done until there’s a reason to undertake something new.

On the other hand, housing remains pretty strong. Consumer spending and confidence have held up, really, remarkably well considering how weak income growth has been. I don’t

know how much longer it can go on. I mean, the saving rate is now down to 2.7 percent, and in the last 25 years or so, the only time it spent any appreciable time below 3 percent was the middle of the last decade, when everybody thought they would get rich by their houses appreciating. It's not clear that that's sustainable, but it has been good news to this point. So I think we're just, now, going to sit and see the degree to which March is an anomaly or a portent of the kind of setback that has occurred, now, three previous times during the recovery.

Looking ahead, I think it may prove hard in the near term to disentangle the factors that are going to affect the pace of recovery for the better part of the rest of this year. You could reasonably ask whether the recent burst of stronger activity was principally the result of a snapback from Hurricane Sandy and the drought and some other temporary factors, or whether it reflected an underlying momentum that has built up as deleveraging has proceeded fairly far and other residual headwinds have abated. But even if the underlying momentum idea proves valid, the sequestration, on top of the fiscal measures adopted at the beginning of the year, is, in any case, going to be pushing down pretty hard on the brake pedal, just as things were starting to get going. For me, this means that the information over the next several months is likely to be inconclusive. Now, if we get reasonably strong numbers in the face of the greatest effects of the sequestration in the second and third quarters, that would be a pretty good indication that the underlying momentum story has some force to it. But if we get poorer numbers, it's going to be hard, I think, to determine whether the momentum story is still the right one and just going to take a little time to show forth, or whether there still is an underlying absence of momentum. So we may not be able to make a judgment for a while, until we're able to look through the maximum effects of the sequestration to see if it's masking basic strength in the economy.

Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Raskin.

MS. RASKIN. Thank you, Mr. Chairman. Like many of you, I have been disappointed by the tone of the recent data. The trajectories of capital spending, homebuilding, industrial production, and hiring all seem less promising than I had hoped they would be this spring. While I'm not yet convinced that these data signal bad times ahead, I do think this collection of indicators somewhat reduces the possibility that we are about to be pleasantly surprised by a robust and self-sustaining recovery. In particular, I find it hard to believe the U.S. economy has the forward momentum to grow rapidly anytime soon in the face of the significant fiscal drag developing.

As we close in on almost four years of sluggish and discouraging recovery, I once again find myself asking whether this is it. Have we settled into some “new normal” pace of activity, one associated with permanently slower economic growth? I think there are very good reasons to believe that increases in potential output have slowed over the past five years. Some of these are fairly uncontroversial, like the aging of the population. But there may also have been a deceleration in relevant educational attainment and a more rapidly declining trend in labor force participation. I think it's also possible that structural productivity may have slowed as middle-income workers are displaced and take up low-income jobs, where they are less productive. However, as important as these trends are to the long-run health of the economy, at the moment, I still think they are probably not as significant as the cyclical weakness in the labor market. In my view, the level of the unemployment rate remains too high mainly because there just aren't enough jobs. Job vacancies remain fairly low, both overall and across a variety of industries, and survey measures suggest that both consumers and small businesses view jobs as still hard to get.

Many jobs seem both hard to get and not particularly good. So a couple of weeks ago, there was a job fair at a community college in my neighborhood, and I decided to swing by for an admittedly unscientific, imprecise, murky, purely experiential visit. What I found is that the firms and places that were recruiting fell into the following categories: three child-care firms; two fast-food places; the military; one community bank; local government; a disposal company; and, oddly enough, swimming pools—many, many swimming pool companies. It turns out the jobs being offered by the pool companies were lifeguard jobs. Well, back in the day, weren't lifeguards the jobs we had as summer jobs? And I was curious because, back then, being a lifeguard most certainly didn't require more than a high school education, but I pressed on.

Figuring I had a better chance passing myself off as a person wanting an IT job rather than a person wanting to be a lifeguard, I came across one booth where there was a firm that was looking for people with IT skills. On closer inspection, these jobs were jobs for armed security guards and people who could do cybersecurity. Thinking my background might incline me more toward cybersecurity rather than being an armed security guard, I inquired about the jobs in cybersecurity, and the recruiter explained how you get a job in cybersecurity. Here's what you do. You fill out an application, and you get to put it in the firm's database. The firm, which is trying to get government contracts, uses the database of applicants to describe to the government the skill sets they can offer. If the firm wins the government contract, the recruiter calls the individual in the database, who then has the chance to become a contractor for the firm and gets paid by the hour—no benefits, but presumably enough of an hourly wage that they can buy their health-care coverage. I thought this might not be so bad, as long as the people putting their names into the database had the chance to put their names into many different databases. “Oh, no,” the recruiter told me, “That is bad etiquette and frowned upon.” In fact, submitting your

name to the database requires you to sign a letter of intent indicating that you are not submitting your name into the databases of any other government contracting firms. I asked the recruiter what percent of people in the database who have signed letters of intent pledging exclusivity actually got a job, albeit a temporary one. She said 30 percent. This struck me as discouraging for a community college graduate, and made me reconsider being a lifeguard.

I also figured that I could lifeguard by day and work at a restaurant at night. So I stopped at one of the restaurant tables and picked up a brochure. I immediately zeroed in on two categories described in the brochure: jobs, and perks and benefits. Here are the jobs: servers; hosts; cooks; managers; and the ever-evasive, but more-enticing, interns. Here's the description of the perks and benefits: "Every job has some perks, but some are tastier than others. Ours are discounted meals and involvement in company initiatives. Your voice counts." I like discounted meals and being involved in company initiatives, but I was hoping for benefits like health care that would increase my total compensation.

Well, all of this may carry no macro signal at all, but it does show a certain continued reluctance of firms to hire or to commit to an employer–employee relationship that is more than temporary or that otherwise shows more than lackadaisical demand for labor. It also shows that even workers who get jobs might not describe themselves as fully employed. Many will have to work jobs where their skills aren't fully used or where they can only get part-time hours when they would prefer to work full time.

Turning to the inflation side, I observe that the inflation data have been coming in pretty soft. As Bill Wascher and others have already mentioned, total inflation, core inflation, and oil and gasoline prices have all been surprisingly weak in the latest data, and so have other measures. Twelve-month changes in both market-based core PCE prices and trimmed-mean

PCE prices are less than 1½ percent, and increases in prices at earlier stages of the production process—core intermediate materials prices—were close to zero over the 12 months through March. In addition, core import prices were flat last year and surprised to the downside again early this year. If inflation expectations changed at all, they've drifted down. And, of course, wage increases have been anemic. My best guess is that the disinflation we are witnessing over the first half of this year will prove transitory, but it certainly appears to me that the risks have shifted somewhat and that the possibility of falling even further below our 2 percent inflation target has increased lately. And on the flip side, the risk that inflation is about to move dangerously above the 2 percent level seems quite low to me. Thank you.

CHAIRMAN BERNANKE. Thank you. Governor Stein.

MR. STEIN. Thank you, Mr. Chairman. I would just note for the record, I did try to be a lifeguard, but I was deemed underqualified and had to be a pool maintenance boy. [Laughter] So let's see. In terms of the outlook for the remainder of this year, I'm moderately optimistic that we'll keep grinding forward, making progress roughly in line with the Tealbook. On the one hand, we have the ongoing drag from the sequestration and whatever still remains to be felt from the payroll and other tax increases earlier in the year. And against that, we have significant increases in asset values—in house prices and stock prices—and whatever confidence and wealth effects those might bring. Also, it's worth reminding ourselves that, thanks, in part, to our policies, credit conditions are very accommodative. I think that the 15-year mortgage just hit an all-time low. We continue to see record lending volumes in leverage lending. I was looking at the SLOOS this time around: For C&I lending, the percentages reporting easing their terms or the spreads are really near record levels. So all of that should be somewhat helpful.

Now, of course, that doesn't mean it's not going to be choppy from month to month as the various data releases of the last several weeks remind us. And, in fact, it seems to be quite likely that we're going to go through something of a soft patch over the next few months, with little momentum in one direction or another. Certainly, I don't see any reason to expect that we're going to rip off a streak of six months of 200,000-plus payroll job gains anytime soon, and it feels like we may really be in this mode of two steps up, one step back, and just kind of a drift. With that lack of local momentum in mind, it is useful—I am just going to reiterate a little bit what John Williams said earlier—to do a little bit of longer-term stocktaking and ask where we've come since September, when we got started with this program. Again, the unemployment rate then was 8.1 percent, and the Tealbook was forecasting 8.0 percent unemployment at the end of 2013 and 7.6 percent at the end of 2014. So, in one sense, we're kind of ahead of schedule because we're at 7.6 percent now, 18 months or so earlier than the Tealbook had forecast. Another way to put this is in terms of the revisions to the unemployment rate forecasts, where I think the revision to the 2013 year-end number is 0.6 percentage point, and the revision to the 2014 year-end number is 0.7 percentage point. I tried to look at the confidence band—I'm sure I got it wrong—it's sort of like we are now at about the 80th percentile of what the forecast in September would have had us, something like that, plus or minus. So the news on the unemployment front, at least, has been sort of one standard deviation to the upside. Again, with all due respect to the fact that the unemployment rate is, by itself, not a perfect summary statistic and, of course, not to say either that we should be satisfied with where we are or that the improvement that we've had thus far meets the elusive test of substantial improvement, but it's clear, I think, that at least on the labor market, we're headed in the right direction. And as others have also pointed out, I think there's some sense, at least, a little bit informal, that not only are

we headed in the right direction in terms of the mean, but the downside risk in the forecast has been tempered somewhat.

Now what I wanted to do is juxtapose those revisions in the labor market outlook with the revisions in the market's estimate about the scale of our asset purchase program. If you look at the primary dealer survey in October 2012, shortly after we had gotten started, the median dealer's expectation for cumulative purchases, MBS and Treasuries, over the life of the program was \$1.24 trillion. And it has been kind of bouncing around in a narrow range: It was about \$1.27 trillion in March, and then, most recently, after the disappointing round of numbers in the last couple weeks, it has gone up to almost \$1.373 trillion—roughly a 10 percent increase since October in the market's expectation of our asset purchases. I want to underscore this and really focus my comments on this because I think it points to a fundamental challenge that we've been having in managing an open-ended program. Obviously, we've had disagreements about costs and benefits, all of that; we've even had disagreements about what we thought we were signing on for in September. You know, some of us were surprised by the initial market response. Let's set all of that aside. It seems like the one shared premise we had going in and, indeed, what I took to be one of the central benefits of going open-ended was that it was meant to be self-adjusting. That is to say, as good news came in, we thought the market would sort of scale down its expectations for the program, and, conversely, if bad news came in, the market would scale up its expectations. And here, I think we have to admit to ourselves the data are pretty clear in rejecting this premise. The data are just at odds with the self-calibrating notion because I think that we have had unequivocally good news relative to expectations—again, they were modest expectations—about the labor market outlook, yet the expected size of the program has

grown a little bit. Whereas I think that if the automatic stabilizer was in play, it could have shrunk fairly appreciably.

So what's going on? I think that it turns out we've got a real communications problem, which is that we started out by saying that we're looking for substantial improvement, but we didn't provide specificity. I think that was appropriate; I think it would have been wrong to try to put a number on it. But a corollary of that is that because we're not telling the market what the target is, the only way it can make inferences is from our actions. And, as the good news has accumulated—and, again, it has accumulated in a not spectacular fashion—we've been reluctant to acknowledge it even with a sort of token—really, you know, not economically meaningful, but token—adjustment in the flow rate because, exactly as Narayana was saying, any change is going to be freighted with signal weight, and we don't want to disappoint the market or do something that's credibility damaging. You know, that's the right thing to do, taking as exogenous market expectations. Of course, as a result, the only reasonable inference that the market can draw is that our bar hasn't really moved. So in fact, the bar kind of ratchets up, and the next time around, we're finding it even more difficult to adjust the flow rate.

I think we're basically caught in an expectational trap here. I think there's a very direct analogy between where we are and firms that have analyst estimates for their earnings and are afraid to miss the analyst estimate by a penny. Obviously, a penny is nothing of any substance, but, of course, if the analysts know that you're doing everything you can to not miss by a penny and if you miss by a penny, you're kind of a loser. So you'd really better not miss by a penny. In this kind of equilibrium, even these very small things that are not economically significant take on a lot of signal value. It's not a good equilibrium to be in because it's an equilibrium, in some sense, where information doesn't get communicated because you're smoothing. Again,

this is completely apart from any statement about costs and benefits of asset purchases or the economy. It's just a statement about an unfortunate kind of communications position that I think we are in.

Moreover, I think the problem in our case seems to be compounded by the excessive salience of recent news. That is to say, again, we've had cumulative progress, yet we hit a patch of weak numbers, and the market expectation for March ratchets up to its highest level that we've seen so far. Is the market kind of crazy to put so much inferential weight on numbers that don't have that much information content? Well, no, not if we validate it. In other words, if we're going to then react and say, "Oh, the market has moved its number up. We're going to send a really bad signal by doing something," well, then the market is completely rational to move its number up. It's sort of a coordinating device in the limit. You can have a number that's near uninformative, but if everybody thinks that we're going to validate that, it's completely rational.

I just look at the dynamic we're in, and again, apart from anything about long-run merits, I have this discomfort that we're losing control, a little bit, of the decisionmaking process. And I think we could disagree on long-run costs and benefits, but I think we should all agree that we want the ultimate scale of the program to be driven by something having to do with fundamentals. I just worry—sort of what Betsy was alluding to before—that if we get one bad print before June, even if it's a number that's ultimately revised, it will dictate a little bit what we're going to do going forward. So I think it's an important imperative for us to just reassert control of the pace and the long-run scale of the program so that it's driven more by our collective assessment of what the right thing to do is and less by, geez, it's Thursday night and you have to pray to the gods of measurement error that you don't get a bad draw on the next

payroll jobs number. I'll try to say a little bit more about how I think we can do that in the next go-round. Thank you.

CHAIRMAN BERNANKE. Thank you. President Kocherlakota. I saw you first.

MR. KOCHERLAKOTA. Yes, I do have a question for Governor Stein; I'm trying to think through his remarks, which were quite interesting. If we had provided a precise definition of what substantial improvement in labor market outlook meant, which might have been very challenging, would it have eliminated that equilibrium you describe? Or am I misinterpreting what you said? If we had said 7 percent, for example, for the unemployment rate?

MR. STEIN. Yes, if we had said 7 percent, yes, I think it would have.

MR. KOCHERLAKOTA. That was my question.

CHAIRMAN BERNANKE. President Bullard.

MR. BULLARD. Yes, I just have a question for Governor Stein. I had the opposite interpretation of this open-ended program. There obviously is adjustment. You know, when we get bad economic news, and maybe markets overreact to bad economic news, but one of the mitigating factors is they immediately say, "Well, I think the Fed is going to do more." That is part of the equilibrium, and I think that is definitely going on. It may not go on in exactly the way you'd like it to, but that is definitely going on. Whereas, if we had set a fixed date last September, we probably would have set it for the summer, July 1, and we'd be sitting here wondering if we should actually end the program on July 1 or not. That's the situation we were in with QE2 and QE1. So I think that this automatic adjustment definitely is going on, and we see that in the market reaction to the weaker data.

CHAIRMAN BERNANKE. I'm going to give Governor Stein the last word. Just letting you know.

MR. STEIN. I think the sign is right locally. In other words, with the March number, it went in the right direction, but globally it has kind of gone the wrong way. Since September, it's not gone the way we would have predicted.

CHAIRMAN BERNANKE. Thank you.

MR. BULLARD. There are other data. There's also inflation.

CHAIRMAN BERNANKE. Thank you. Governor Powell.

MR. POWELL. Thank you, Mr. Chairman. I see the data since the last meeting as mixed and modestly disappointing, on balance, but not so bad as to require a downward adjustment to the outlook. Echoing several others around the table, some of my industrial-sector contacts reported that their antennas are up now to the possibility of a flatter year than expected, and that's in contrast with a more positive sentiment for the March meeting.

Since early 2010, the economy has oscillated through periods of strength and weakness around a 2 percent growth rate. At the moment, there is plenty of chatter about another spring swoon. Perhaps a lack of confidence by cautious households and businesses somehow reinforces and perpetuates that cycle. I lean toward a modestly more positive narrative. One could look at the U.S. economy as an investor might: strip out the unusual events, the one-timers, to reveal the underlying growth rate. So if one were to take the Tealbook forecast for the rest of 2013 but back out the arguable one-timers—that would mean subtracting the snapback from the drought and the hurricane, but also adding back the fiscal drag from the tax increases and the full sequestration—economic growth would be 3.2 percent in the first half and 3.4 percent for the full year. Now, I hasten to add that in my old life of buying and selling companies in the private market, one-timering was very much a contact sport. So I hereby add a conceptual grain of salt to that. Still, if actual economic growth broadly tracks the Tealbook and the central tendency for

the Committee's forecast, I think that provides a real reason for confidence in the strength of the recovery. Of course, the bigger picture is that we don't know which narrative will emerge. It's our responsibility to have a policy that addresses the range of plausible outcomes, or most of that range, and it seems to me that while we've had some progress, there's still work to do on that front.

In a general sense, we know what to do in the very good case and in the very bad case. Since the Committee adopted the open-ended purchase program in September, the middle cases have concerned me. And I apologize if this is repetitive, both of my earlier remarks and of some of the things Governor Stein said. One way to see this is by comparison with the thresholds the Committee adopted in December. Thresholds allow the markets to react to incoming data. If conditions improve, the market brings in the liftoff date. If conditions worsen, the market moves out the liftoff date. The Committee still holds the reins but puts the market in a position to influence rates in expectation of our actions, and that should mean a healthy, more or less continuous recalibration. There ought to be no surprises, no disappointments, and no expectation gaps. In comparison, it is also troubling to me to retrace the path of the current LSAP, and I won't go through all of it. It's true that the local response to the March employment print was appropriate. But the bigger picture is that we've had a significant improvement—I won't try to use the freighted word "substantial"—in the labor market and in the outlook for the labor market since September. I won't repeat all of the numbers that Jeremy did, but I will add that at the time of the September meeting, the Committee was looking at a trailing six-month average increase in nonfarm payrolls of 97,000 per month. That would be revised up subsequently, but the Committee didn't know that in September. The six-month trailing payroll average number through March 2013 is 188,000—almost a doubling. The other statistics have already been used,

but I just think, clearly, there's been a significant improvement in the labor market and the outlook since we acted in September.

The dealer survey also retraces a very similar set of improvements in the results, and yet the size of the program has only grown in expectation. It's as if the market has gotten the sign wrong, in the sense that we've had a significant improvement, if not a substantial one, but the program is larger. And I don't blame the market. It seems to me that we need to continue to improve our communication and regain control of the program. I thought that the Chairman's press conference and remarks by others around the table made a very good start on this. The markets seemed to easily absorb the conversation of a potential reduction in the pace of purchases. The 10-year briefly topped the yield of 2 percent. Investors were reported to be preparing themselves for exit. This was all very positive. There was no suggestion of a flight in front of a premature tightening. It seemed to me to be the beginning of a successful installation of brakes on the freight train. And by varying the level of purchases, we would simply be taking responsibility for setting market expectations rather than being driven by them, and it seems to me very important to do this. I offer this in no way to suggest satisfaction with the condition of the labor market. I take it as a given that there is a substantial unemployment gap. In fact, I would agree with both Janet and Dan that it's almost certainly larger than the reported number. It is also independent of my view of the costs and benefits or of the ultimate peak size.

My concern has been that we have closed off all the off-ramps except one, and we could be sitting here in a year having this conversation trapped by market expectations. The case for tapering would be that since the program was initiated in September, we've achieved substantial progress toward our economic objectives in the form of lower unemployment and higher payrolls. The dealer survey suggests that progress toward our economic objectives is the most

likely reason for us to taper. I believe that we ought to take the next plausible opportunity reduce the pace of purchases, and I hope that time will come in June. I will leave further discussion of the timing for the next round. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you very much. Thank you for a very interesting discussion. I'll try to give a short summary. I will say that I think there was a little more dissonance today than usual. I've been listening very, very carefully, and in terms of the outlook there's a little bit of a bimodal view. So some of my sentences will have multiple conjunctions in them.

The most recent data have been mixed, raising some concern about the spring swoons. Overall, however, the outlook remains for moderate economic growth with slowly improving conditions. Somewhat more resilient private-sector demand, including housing, is being offset, to some degree, by fiscal restraint. The risks to the economic growth outlook still appear to be to the downside, but there's some disagreement on whether those risks have lessened recently. Uncertainty remains high: Is this a new normal? Inflation remains below target. Those risks, according to most of those who commented, appear broadly balanced.

In the household sector, households are exhibiting "subdued enthusiasm." Wealth is up and leverage is down, both helping consumption, but perceived income volatility is also up. Employment gains will also be important for consumption. Lower-income households may have been hit by the higher payroll tax, but lower gasoline prices will help. In the housing sector, home sales and prices are up, with foreclosures and inventories down. Investors are buying many houses for cash. Higher beer sales may be a leading indicator for construction workers [laughter]. Housing is a source of growth for many related industries and furniture and so on, but remains a small sector of the economy.

In the labor market, job growth has been slow and somewhat volatile. Unemployment has come down more quickly than expected, and with some momentum. The three-month change in payrolls is 168,000 jobs. UI claims are low, and U-6 is down. However, lower unemployment, in part, reflects lower participation rates. The labor gap may be higher than the unemployment gap, and economic growth will be needed to sustain employment gains.

In the business sector, businesses in some Districts remain relatively cautious, not expanding or hiring, although they are seeing less downside risk to their sales. Investment is leveling off, and much of it is directed at increasing productivity and reducing costs. Skilled workers, in some cases, are hard to find, and health-care costs remain a concern and a drag on hiring and on worker hours. Manufacturing activity has been weakening in some Districts, in part due to weaker export markets and the sequestration. There are some signs of life in commercial real estate. Weak commodity prices are flattening farm incomes and drilling activities to some extent.

Internationally, China is weaker and Europe remains in a slump. Monetary transmission channels in Europe are jammed, and further progress on banking union would be helpful in that case.

In the fiscal area, the impact of the sequestration is not yet clear but it has the potential to slow economic growth in coming quarters. Defense manufacturers have more long-term than short-term concerns. One offsetting factor to the sequestration is a reduction in expectations of future taxes.

In the financial markets, 10-year yields have declined significantly since March, reflecting several factors, including BOJ actions and the weak U.S. labor market report. This is consistent with asset prices being responsive to QE but also consistent with responsiveness to

increased fears about economic growth. Banks are seeing more newly originated mortgage loans in some Districts, but refinancing activity remains strong. More generally, banks are focused on loan growth. Concerns were expressed about the search for yield and interest rate spikes. Cov-lite issuance and junk issuance are up, but it's important to judge how serious these risks are in thinking about policy.

Finally, inflation remains soft, with headline and core PCE inflation most recently near 1 percent. However, some of this weakness may be due to transitory factors, and CPI-based measures, like median inflation, are relatively stable. There are a few indications of wage pressures, as shown, for example, by the ECI, except in a few occupations and areas. Indeed, downward nominal wage rigidity could be holding inflation above zero. Food prices have recently been weak, as have the prices of other commodities and raw materials. One measure of forward inflation expectations shows them below 2 percent for some time, but other measures like five-by-five breakevens are closer to target. And there is disagreement on the extent to which low inflation should be a concern at this juncture.

That's a somewhat disjointed review of the discussion I heard, but, again, I thought it was a very rich discussion. And there was a good bit of transgressing on tomorrow's discussion, but I will forgive that because I know everybody is very concerned about those issues. Are there any comments or questions on my summary? [No response]

If not, let me just make a few additional comments. As many have noted, the data since the last meeting have been somewhat mixed—the March labor report, in particular. But I put myself maybe in the top half of the group here in terms of optimism. I still see economic fundamentals as having improved since late last year. And one very useful observation, I think, is that private domestic final demand, that is, C plus I , has been growing pretty rapidly over the

past six months or so, which suggests that there is some private-sector momentum as we go into a period of some fiscal restraint. I heard some of this at the G-20 and IMF meetings that, as Steve Kamin mentioned, were here in Washington recently. While there was a lot of morose discussion, there was also a lot of discussion of the so-called three-speed global recovery. There's now a third speed, the United States, which is perceived by our international partners as picking up and moving faster than other industrial countries. So there is some sense that fundamentals are improving here in the United States.

As I talked about last time, I think financial conditions are easier. That's shown by many indicators, including financial conditions indexes from the Chicago Fed and other Federal Reserve Banks. This reflects, obviously, U.S. monetary policy, but also financial developments in Europe, where spreads have come down, and in Japan, as well as better credit conditions in the banking sector. The benefits of these easier financial conditions are most obvious in interest- and credit-sensitive sectors like consumer durables and housing, but I think the explanation for why consumption seems stronger than income would justify is that wealth, easier financial conditions, lower interest rates, and so on are supporting consumers and allowing them to save less out of their current disposable income.

I must say that any claim that our policy is having no effect on the economy has to contend with what's happening in the housing market. There's a lot happening in the housing market, and I think that it's having important effects on the broader system. I'd make a couple of comments about developments there. One is the observation that current sales are being held back by lack of supply, which is an interesting development. I think this is probably a temporary situation. Construction will increase, and sellers will see more attractive opportunities to put their houses on the market. On the other hand, it's good news that we're having fewer

foreclosures coming into the housing market. That's a good reason for supply to be declining. A second observation is that concern has been raised about the anecdotal reports of increases in construction costs. I was interested in this because if that were an important factor, that would obviously be something that would slow the gains in the housing market. So I asked the staff to look at this, and we talked about it. As best we can tell, this doesn't seem to be a big problem at this point. For example, the prices of developed lots have been rising, and the number of developed lots is low in absolute terms. But relative to the pace of construction, the number of developed lots is much higher than it was during the boom period. Despite anecdotes, construction workers' wages are not moving much. The official data show a 1.5 percent gain in construction wages in the past 12 months. Now, that may be affected by composition and so on, but it doesn't seem to be overwhelming. In materials, lumber is up about 35 percent, but other commodity prices are down. And cost indexes for housing construction only show about a 2 percent gain in 2012. Those indexes don't reflect some of the latest data, but they do show a relatively slow gain. So while there are increased construction costs, they don't seem, at this point, to be a major concern.

Mortgage supply conditions are still tight, in part because FHA and the GSEs are tightening their standards. They are trying to induce more movement into the private sector. That hasn't really happened yet. So that does restrict, to some extent, demand. But, again, over time, I think the situation will likely improve as prices rise and the economy looks stronger. Going forward, as supply conditions—that is, availability of homes—continue to improve, and as demand improves but more slowly, I would suspect that we'll see less increase in house prices but more activity, and activity will be important for related industries and for employment.

I won't go into any detail, but a number of people talked about CRE, commercial real estate. That's a very slow-moving sector; it tends to lag behind other sectors of the economy. But there are some early signs there, also, of some activity, and it's another area, of course, that is sensitive to financial conditions. Nonresidential construction put in place has been rising at about the same pace as residential construction. Architectural billings indexes are up. The SLOOS showed that terms on CRE lending are easing and that a net 40 percent of respondents said that the demand for CRE loans is increasing, which suggests a very significant change there. We have some areas like drilling and mining structures where there has been a lot of activity as well. This is not something that is going to make a big difference in the very near term, but, as the recovery proceeds, I think that investment in structures will provide some additional strength.

My first overall point is that because of easier financial conditions and other factors, I think that we are seeing some strengthening in private final demand driven by durable goods: housing; to a lesser extent, consumption; and perhaps even investment in structures. Now, of course, this is colliding with some restraining factors. The obvious one is the sequestration, and, in fact, the whole package of fiscal restraint. Let's not forget the "fiscal cliff" deal and the upcoming debt limit and other factors. That's very uncertain as well as, I think, an important restraint on economic growth. Another factor that got less attention is the global economy. Q1 GDP growth was reduced by about ½ percentage point because of weak net exports. I note that Steve Kamin talked about the weakness in China. The Shanghai stock exchange is down about 10 percent in the last two months. There is a definite slowing there, and you can see it in financial markets by looking at the long-term interest rates and commodity prices. Those things are reflecting global growth expectations, and I do think there's some risk coming from that.

And the weakness in global growth and exports, together with the sequestration, are certainly reasons why manufacturing has not been a leading sector in the last few quarters.

Overall, again, I feel like I am a lot more optimistic than some about the underlying strength of the private sector. There are some important restraints, in terms of the fiscal situation and global economic growth. That, as I think Governor Tarullo and others pointed out, is going to mean that the signals for the next few months are going to be a little bit tougher to read, but I think we'll have to do our best. But I do think there's some chance for a stronger recovery later in the year. This is all relative, of course. I'm certainly not claiming that we're anywhere near where we ultimately want to be.

Just on inflation, a lot has been said about inflation. I guess at this point, I'm prepared to wait and watch a little bit. Some of the factors affecting PCE inflation do appear to be temporary. On the other hand, there is an argument, which was in the same Erceg and Levin paper I mentioned earlier, that the explanation for the very weak wage growth is this broader employment gap and not just the unemployment gap—the fact that there are people just on the other side of labor force participation who would like to have jobs.

I will end with just one question about the low inflation that we're seeing, without discussing further the prospects for inflation. Is the low inflation we're seeing now doing any damage? Is it slowing the recovery? I think there's a little bit of a concern there. On the one hand, real interest rates depend on expected inflation, and expected inflation thus far looks to be pretty close to target. That said, of course, if inflation stays low for a time, expected inflation could come down, and that would raise real interest rates and have adverse effects on economic growth. But I think actual inflation can matter as well. For example, if nominal wages adjust slowly, then slower-than-expected inflation will raise costs, compress profit margins, reduce

employment, and reduce production, all else equal. Lower-than-expected inflation can also slow the process of deleveraging and increase debt burdens. So low inflation is something, I think, to be worried about. I do think that the very low numbers we've been getting, which are the lowest we've seen, basically, since the crisis, are at least partly artificial, and we will see some increase. But if that's not the case, we'll have to really come back and take a look at this because it's not just a question of our price-stability mandate. It's also a question of the implications of very low inflation for our employment mandate as well.

Any comments, questions? [No response] Okay. In the spirit of making sure that people catch their planes tomorrow, I would like, if you will indulge me, to go to the introduction to the policy go-round. And then we'll stop after that, and then go for a reception. Jim.

MR. CLOUSE.³ Thank you, Mr. Chairman. I will be referring to the materials that have just been handed out, labeled "Material for FOMC Briefing on Monetary Policy Alternatives."

The Tealbook presented three options for your consideration. Alternative A raises the pace of asset purchases to \$100 billion per month and modifies the forward guidance for the federal funds rate by lowering the unemployment threshold to 5½ percent. Alternative B maintains the threshold settings adopted last December and continues asset purchases at their current pace, and alternative C trims the pace of asset purchases to \$60 billion per month but leaves the forward guidance for the federal funds rate unchanged.

The exhibit on page 1 of the handout summarizes how real activity, inflation, and interest rates might evolve under the three policy options, conditional on the underlying staff outlook and the dynamics of the FRB/US model; alternative A is shown in blue, alternative B in black, and alternative C in red. In this exercise, outcomes under alternative B are assumed to match the April Tealbook's baseline projection. In particular, as shown in the top-left panel, the FOMC is assumed to continue purchasing assets at the current rate through the June meeting, but thereafter begins to taper purchases, and ends the flow-based program in December. In addition, the federal funds rate—shown in the top-right panel—is assumed to lift off in late 2015, consistent with the Committee's forward guidance and the projected decline in the unemployment rate; thereafter, the funds rate follows the prescriptions of the inertial Taylor (1999) rule. As shown in the bottom-left panel, with these assumptions, the unemployment rate is projected to drift down to about 5½ percent—

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

roughly the middle of your forecasts for the longer-run normal level of the unemployment rate—by late 2016, while inflation (shown in the bottom-right panel) gradually edges up to the Committee’s 2 percent longer-run goal.

Under alternative A, represented by the blue dotted line, the size of the SOMA portfolio rises to about \$4 trillion by the spring of next year—about in line with median dealer expectations—and the funds rate remains at the effective lower bound until mid-2016, consistent with the forward guidance under this alternative. In response to the greater accommodation provided by this policy option, the unemployment rate falls more quickly and reaches 5½ percent by early 2016, and then moves lower over subsequent quarters. Inflation rises a little above 2 percent for a time before returning to the target level later in the decade. In contrast, under the more restrictive policy envisioned in alternative C, shown by the red dashed line, the funds rate begins to move up late next year, well before either threshold is crossed, and the size of the SOMA portfolio peaks at \$3.3 trillion. As a result, the unemployment rate does not reach 5½ percent until mid-2017, and inflation remains below 2 percent until late in the decade.

Turning to the economic arguments and statement language for each alternative: You may see the economic outlook as little changed from the last round, and in light of mixed signals from incoming economic data, you may be attracted to alternative B, which maintains current policy settings—asset purchases of \$85 billion per month and the existing thresholds for the forward guidance.

The draft statement for alternative B, shown on pages 6 and 7 of your handout, is unchanged from the statement issued in March, apart from updating the information on economic conditions in paragraph 1. That paragraph says that data received since the March FOMC meeting suggest that economic activity has been expanding at a moderate pace, while noting that fiscal policy is restraining economic growth.

Judging by responses to the Desk’s Survey of Primary Dealers, market participants do not expect significant changes in the statement at this meeting. Accordingly, a statement along the lines of alternative B would likely have little effect on interest rates or broader financial conditions.

The more accommodative policy stance of alternative A, on pages 4 and 5 of your handout, may be attractive to policymakers who anticipate that without additional policy accommodation, progress toward the Committee’s longer-run objectives likely would be unacceptably slow. These policymakers may also be concerned about the risk of permanent damage to workers’ skills and labor force attachment if employment growth were to remain sluggish, or about the potential for further disinflation if economic slack were to remain elevated.

The first paragraph of the statement for alternative A notes that “economic activity has been expanding at a moderate pace,” but it goes on to note that “the pace of improvement in labor market conditions appears to have slowed.” Paragraph 2 states that “without further policy accommodation, economic growth might not be

strong enough to generate a sustained improvement in labor market conditions” and that inflation over the medium run likely would remain below the FOMC’s 2 percent objective. In paragraph 3, the Committee notes that it will increase the pace of its securities purchases, while paragraph 5 lowers the unemployment rate threshold to 5½ percent and reinforces the message by noting that the Committee “intends to retain” (rather than “currently anticipates”) an exceptionally low range for the federal funds rate at least until the unemployment rate or inflation over the medium term have reached their respective thresholds.

A statement along the lines of alternative A would be quite surprising to market participants, leading to additional downward pressure on long-term interest rates and reinforcing the effects of the downward revision in the expected path for the federal funds rate. The exchange value of the dollar might decline, and stock prices would likely rise. However, the rise in stock prices could be damped if investors saw the statement as pointing to a markedly weaker economic outlook than previously thought.

Alternative C, on pages 8 and 9 of your handout, might be attractive to policymakers who see economic indicators as confirming that the economic recovery is now on firmer footing, as well as to those who judge that continuing asset purchases at the current rate would risk a deterioration in long-term inflation expectations, contribute to financial stability risks, or complicate the Committee’s ability to withdraw policy accommodation at the appropriate time.

The first paragraph of alternative C notes that the unemployment rate and other indicators of labor market conditions have improved. Paragraph 2 notes that the Committee expects that economic growth will proceed at a moderate rate in coming quarters and then pick up; it also deletes the reference to downside risks to the outlook and notes that “the Committee sees the risks to both economic growth and inflation as roughly balanced.” Paragraph 3 states that in light of the improvement in the labor market outlook since last September, the Committee decided to slow the pace of its securities purchases.

A statement along the lines of alternative C would greatly surprise market participants, likely prompting increased longer-term rates, lower stock prices, and a higher exchange value of the dollar.

Draft directives for each of the alternatives are listed on pages 11 to 13 of your handout. That concludes my prepared remarks.

CHAIRMAN BERNANKE. Thank you. Are there questions for Jim? President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. You know, we have an alternative C, and the way you described it just now would mean the fed funds rate moves off zero before the threshold is encountered. Do we really have to have that kind of alternative C? Couldn’t we just

have a sooner tapering of purchases without having the liftoff date be sooner? It seems a little harsh to me.

MR. CLOUSE. Well, this is a matter of some discussion among the staff, and maybe David and others can help me out a little bit. There is a tension in doing the simulations for alternative C, because FRB/US doesn't really have the dynamics that we think many of the policymakers who might favor alternative C would be concerned about—namely, things like concerns about financial stability risks or risks to inflation from higher reserves. We think that the reason somebody might choose C is out of concern, in particular, for inflation risk, so that's partly how we got at it. We were thinking that policymakers who favored that option might rely on the language in the statement suggesting that you would be looking at things apart from just the thresholds to make a judgment about when to lift the federal funds rate—along the lines of that one sentence at the end of the statement. That was the logic behind trying to do it that way, but we certainly needn't do it that way.

MR. BULLARD. Well, I'm a little concerned about it because the Committee is thinking about, at some point, trying to go in this direction. And this maybe overstates a little bit what the effects would be if all you want to do is taper, but you're willing to respect the Committee's commitment to the thresholds.

MR. CLOUSE. That's a fair point.

MR. REIFSCHEIDER. Yes. And it does overstate the effects. My guess, off the top of my head, based on other things we've done, is that if you just said, "We are going to stick with the thresholds; there is not going to be an earlier liftoff," the unemployment rate would shift. That red line would shift halfway back toward the black line. That's my rough guess. But, as Jim said, we have had a hard time, over time, deciding what the motivation for choosing

alternative C would mean. Is it a different outlook? A different assessment of risk? And what would it imply for the federal funds rate path as well?

MR. POTTER. There is also the effect on market expectations.

MR. REIFSCHNEIDER. Yes. There is also a signaling effect. So even if the Committee was just bound and determined that the thresholds stick, the market might not interpret it that way, and you'd see an effect that looks like this simulation for alternative C.

MR. BULLARD. Yes. But that is the kind of thing that we have a press conference for and we can talk about.

CHAIRMAN BERNANKE. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. I have two questions about the simulations underlying alternative A. The first question is, what did you put in there for a substantial improvement in the labor market outlook—when did you end the purchase program in alternative A?

MR. CLOUSE. The purchase program in alternative A ends in the first half of 2014. So it begins to taper later this year, and then ends in the first half of 2014.

MR. KOCHERLAKOTA. And my second question is, so A does better on unemployment. How much of the improvement of A relative to B is due to the change in the purchase program, and how much is due to the lowering of the threshold?

MR. CLOUSE. Well, I think the threshold actually is quite powerful. I mean, both are important, but the threshold really gives you a lot of kick. And David probably can give you the actual numbers off the top of his head.

MR. KOCHERLAKOTA. That's a fine answer. [Laughter]

MR. REIFSCHEIDER. The threshold itself is worth more than half of the unemployment rate effect.

MR. KOCHERLAKOTA. Thank you.

CHAIRMAN BERNANKE. President Evans.

MR. EVANS. Thank you, Mr. Chairman. First, I believe I wasn't listening carefully enough as Jim was going through the alternative C and the implications for the fed funds rate. Just so I can understand, you must have been talking about the figure that shows how the funds rate could be lifting off prior to hitting the threshold. But that's an interpretation that you have.

MR. CLOUSE. That's the staff interpretation.

MR. EVANS. Okay. So it could happen that way, certainly. I understand that. All right. I was looking at alternative B and alternative C, with an idea toward trying to understand how we would, not that I favor it, implement earlier tapering in June. Currently, alternative B, in the first paragraph, has language on the labor market: "Labor market conditions have shown some improvement in recent months." It seems like a positive statement. I don't have any difficulty with that. Now, if in fact you were contemplating alternative C today, paragraph 1 is also intended to be factual although it is a slightly different interpretation: "Although the unemployment rate remains elevated, it has declined further, and other indicators of labor market conditions have shown additional improvement." It's still factually correct. I mean, you could choose to emphasize that, I suppose—probably not after the March report, but you could see that after two good reports. And then, paragraph 3 has the other reference about "based on the improvement in the outlook for the labor market since last September." Governor Stein and Governor Powell have represented that position, I think, fairly well, that there have been improvements. So, if we were contemplating alternative C being offered up next time as

alternative B, would we be putting most of our eggs on the positive developments on the labor market in those two reports—in which case it’s still up for grabs—or is it going to be the “Darn it, I just think we need to do this and taper”? So is it going to lean more on paragraph 3? Those are the questions that come to mind as I look at this language. Is there one preferred over the other in the staff’s view of how markets would be looking at this?

MR. REIFSCHEIDER. In the memo about changing the flow of asset purchases, we tried to address that issue. And I don’t know whether Steve Meyer wants to talk about it here, but we tried to address that issue by thinking about how you might craft a statement, say, in June, or whenever, under alternative states of the world, as far as the way the data have come in. Depending on what conditions have been doing at the time you are thinking about doing it, you could be writing very different statements. They might not look at all like this alternative C; they might look considerably different.

MR. EVANS. I’m not sure what my question is; I’m just trying to think this one through—does our characterization of labor markets in tomorrow’s statement matter a lot for how we set the June decision point, or not?

MR. POTTER. The market expects some note of the weaker data. So if there is no note of that, it would be a strong signal.

CHAIRMAN BERNANKE. Yes. I think the expectation, from what I’ve read, is for a slightly weaker statement. Governor Duke.

MS. DUKE. Also, I would ask about the difference in formulating alternative C and in formulating the tapering language in the memo on adjusting the pace of asset purchases. And it seems like there, the language is a little less “changing gears” type of language, but more “this is a step in a continuum” type of language. So it would seem to me, if we wanted—and, in fact,

this was one of the suggestions I was going to make; now I'm really infringing on the next round—we take a sentence out of the memo, not out of alternative C—the sentence about adjusting the pace of purchases, which could be up or down—and put it into alternative B. That could be something that markets could interpret as indicating that we were so worried about the weak data that we were setting up the possibility that we were going to increase purchases. But it certainly would continue that concept that we are thinking about altering the pace of purchases, which we, I think, did introduce pretty successfully after the March meeting.

CHAIRMAN BERNANKE. Okay. Let me just say a word on what we have already begun here. Obviously, tomorrow we will need to make tomorrow's policy decision, and have a statement, and so on. But I have a feeling—and it won't take much encouragement—that we will also have a robust discussion of the tactics and strategy of going forward, and I encourage that. We got a very good memo from the staff that was a starting point, but, obviously, you can go in whatever direction you would like. I encourage constructive interventions. I hope we can find solutions together about how we can solve some of the communications issues that have come up. So I hope it will be a good and constructive discussion tomorrow.

I want to make just a couple of points about communication opportunities. First, I am slated to testify before the Joint Economic Committee on May 22. And, second, I have conferred with Michelle, and we have confirmed that if there was ever a need for an ad hoc press conference, we could announce at the time of the statement being released that we were going to have a phone press conference, public, live. I just want to say that because, as we think about this, we don't have to necessarily assume that we only can act once a quarter. I mean, I think we can act more often than that if we need to; we have the logistics for that.

But I think that there obviously are some very difficult questions here. As we discuss it, again, I hope that we can think about how we can achieve our policy objectives, but do it in a way that will work from a communications perspective. So I look forward to that discussion tomorrow. And then, as you know, we will have an additional item on the agenda on exit principles. Okay? President Kocherlakota.

MR. KOCHERLAKOTA. Said with such enthusiasm. [Laughter] Just a quick thing, to build on what you just said, that I think it would be useful for us to be able to think about. If there are going to be elements of the labor market outlook we are going to end up highlighting as being the criteria by which we are going to adjust policy in June, it might be useful to bring those forward in alternative B in the first paragraph now. For example, Governor Powell's statement about the trailing numbers of nonfarm payrolls.

CHAIRMAN BERNANKE. Let me make a radical suggestion here. If you have sentences, paragraphs, whatever, that you would like, would you please send them to Jim or to Steve Meyer. And could you make a sheet tomorrow that has just six sentences, for example, "From President Kocherlakota, this sentence"? Just so we have a sheet that has everything written down. And then, that will just be something that will be for reference as we talk about this, in case people have specific suggestions. Okay? So just send those things.

MR. EVANS. And when is the cutoff time for that? [Laughter]

CHAIRMAN BERNANKE. 8:30 tomorrow morning. Let's be reasonable about this, okay? [Laughter]

MR. EVANS. All right. Yes, sir.

CHAIRMAN BERNANKE. All right, okay. Force majeure. We now have a reception and dinner. We will reconvene tomorrow morning at 9:00 a.m. Thank you.

[Meeting recessed]

May 1 Session

CHAIRMAN BERNANKE. Good morning. We've reached item 3 on our agenda.

The staff did a couple of quick pieces of ad hoc research overnight, which bore on some of the questions from yesterday, and I thought I would share them with you. I guess these both had to do with Governor Stein's and Governor Powell's comments. The first had to do with communication—how expected purchases vary with the news. One point of interest that David Wilcox and his team showed me was that the improvement from the Blue Chip perspective is somewhat less than that from the Tealbook perspective. In August of last year, the unemployment rate prediction by the Blue Chip for the fourth quarter of 2013 was 7.7 percent, and, as of April, it's now 7.5 percent. So there's been less of an improvement from the Blue Chip's perspective. Of course, on top of that, the Blue Chip has probably been surprised by the additional fiscal policy restraint that's come in. It's still an important point, but I think the mystery is reduced, at least a little bit, by that observation.

The other observation, which is due to Steve Meyer and which I felt was interesting, is that the total size of the program, as expected by the median dealer, has actually been pretty constant since October. Prior to the October FOMC meeting, the total amount of expected purchases for 2013 and 2014 was \$1105 billion, and, before the January FOMC meeting, it was \$1140. Before March, it was \$1080 billion, and, before this meeting, it was \$1145 billion. The point is that it's not the case that the expected additional purchases, from the point where we are at a point in time, are constant. In other words, we're not on a treadmill. As we move forward, we are in fact fulfilling what is more or less a constant expectation for the ultimate size of the program. I think that does affect at least a little bit of the thinking about exit ramps and so on, but I'm sure there'll be plenty of discussion and commentary on these issues.

One other thing before we start. We were expecting at least 30 contributions to the language. Governor Duke gets the merit badge. [Laughter] She submitted this additional sentence, which would go between the third and fourth sentences of paragraph 4, presumably in alternative B. As we begin our go-round, I wonder, Governor Duke, would you like to go first and explain this, or would you rather wait?

MS. DUKE. I can.

CHAIRMAN BERNANKE. Go ahead. Why don't you go first? And then, as we go around, if anyone wants to comment on this suggestion, obviously they can do that.

MS. DUKE.⁴ Well, first, I'd like to point out that Jim Clouse didn't get any dinner because he was waiting for all of the new submissions.

First of all, I'm not in favor of making any changes to policy at this meeting, but I would like the statement from this meeting to leave us in the best possible position to start tapering in June if the data cooperate. I found the memo on changing the pace of purchases to really be quite helpful. Knowing that I'm a lot more concerned than most of you about the cost of a very large balance sheet, I'm still willing to admit that, when I reviewed the memo on changing the pace of asset purchases, I found that issuing a statement that said we had run up against an unfavorable cost–benefit tradeoff sounds an awful lot like defeat, whether it's a collective statement from the Committee or whether it's individual members of the Committee dropping off of this train as each reaches his or her own particular pain point. But at the same time, the likelihood of getting to the substantial improvement in the outlook for labor market conditions that we originally set as a threshold to end purchases seems like a very long way away, especially if we discount resilience to fiscal drag and expect monetary policy to offset

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

sequestration. So I do see an attractive middle ground, and I thought we were converging on a middle ground at the last meeting—that is, the option of stepping down purchases just a bit in response to progress toward our goals—not the “substantial improvement,” but progress toward our goals. This would give us a positive message, and, because the pace could always be increased again, I don’t think it comes at a large cost. And it would give us a better signaling mechanism and allow us to regain control of expectations.

As Governors Stein and Powell pointed out yesterday, and as the Tealbook graphs illustrate, we have made noticeable progress since September. It doesn’t rise to the threshold of substantial improvement that would indicate an end to purchases, but it is noticeable. And the longer we wait to react to the noticeable progress, the less plausible it becomes as a reason for tapering and the more remote becomes our opportunity to point to that progress as a positive result. So if the progress we’ve seen so far doesn’t justify a step-down, my question is, what does it take, and what’s the likelihood that we’re going to see even greater progress, as we go into the year, than we saw so far? The longer we wait to adjust the pace, the higher the markets will interpret that bar to be, and there’s a real possibility that we could miss out on a window of good news by waiting for better news. I’m not saying that we plan to taper in June regardless of the data, but if we did have some positive revision to March and got some decent job growth, I think we should at least consider signaling that we’re happy with the direction, especially if it comes in spite of the fiscal drag. I think we could pull that off without hurting our credibility if we prepare the ground. Markets expect us to taper sometime, and we’re the ones who are going to have to teach them what to view as positive or negative.

I don’t think a small deceleration in the pace of purchases would have a big effect on efficacy. In fact, when we first launched the MBS program in September, I believe that the

original pace in the Tealbook was \$30 billion a month, and it was only in the last few minutes of the meeting that it was increased to \$40 billion to make it sound a bit more muscular. The big effect of tapering comes from adjustment to market expectations, which is exactly what I intend. I'm still truly bothered by the wide gap between market expectations and the assumptions in the Tealbook that reflect the staff's interpretation of the broad center of the Committee. So I think transparency demands that we reconcile the two, and I can see two ways for this to happen. We could start tapering as a signal to rein in market expectations as progress is made, or we could stop pretending to believe that we anticipate a program that's much smaller than the market anticipates and instruct the staff to adjust the Tealbook assumptions accordingly.

I thought the minutes of the last meeting were pretty clear about the number of members who expressed support for tapering sometime this year and ending by year-end 2013, but Fed watchers completely discounted that signal and even increased their expectations for the timing of the adjustments and the ultimate purchase size. Since the day we launched the program, I've been concerned that, rather than driving market expectations, we would be driven by them. The market now seems to expect an unbroken streak of wins, with any stutter along the way restarting the count, and we appear to be on track to validating that expectation. So I'm in favor of alternative B, but I would like the statement for this meeting to build on the concept of adjusting purchases that we introduced in the press conference and the speeches after the last meeting.

I think that the change I've suggested would serve two purposes. It would set up a smooth transition to tapering in June, if that turns out to be appropriate, and it would communicate to markets that adjusting purchases is a more serious and imminent option than they now seem to expect. Even if markets assume that it's a signal that we might increase the

flow of purchases in response to soft data, I still think it would serve a worthwhile purpose.

Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you.

MR. EVANS. Could I ask a clarifying question?

CHAIRMAN BERNANKE. Sure.

MR. EVANS. Where's the language intended? I count only three sentences in the paragraph.

CHAIRMAN BERNANKE. In alternative B, paragraph 4, it would come after the sentence about continuing purchases until “the labor market has improved substantially in a context of price stability.” Then we would insert this sentence—“prepared to vary” and so on. And then, finally, we would continue to have the last sentence, which says that we'll also take account of efficacy and costs.

MR. EVANS. Okay. Thank you.

MS. RASKIN. So it would be between the second and third sentences?

CHAIRMAN BERNANKE. Yes, after the phrase “improved substantially in a context of price stability,” in paragraph B(4) and, I assume, analogously, in the other alternatives.

MS. DUKE. Right.

CHAIRMAN BERNANKE. Any other comments? [No response] Okay. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Are you feeling better, by the way, Eric?

MR. ROSENGREN. Yes, I am feeling better. Thank you.

CHAIRMAN BERNANKE. That's good to know. Okay.

MR. ROSENGREN. I support alternative B. We are projecting large misses on both elements of our mandate for this year, and the miss on inflation is getting quite large. It is ironic that, when I looked at the Bank of Japan announcement last week, the median of the Policy Board's inflation forecast, adjusted for the consumption tax, was 1.4 percent for 2014 and 1.9 percent for 2015. The Tealbook forecasts for PCE inflation for both 2014 and 2015 are 1.6 percent. I think one lesson from Japan is that being the major central bank that most undershoots an inflation target is not a distinction for which we should strive. Inflation falling further below our target and fiscal austerity that is worse than we expected provide ample reasons to strongly prefer alternative B to alternative C. While the data are not unambiguous, taken as a whole, labor markets have not improved substantially enough to alter our purchase program. The benefits of LSAPs seem clear, as the interest-sensitive sectors continue to perform well despite the fiscal headwinds, and the costs to date seem quite modest. It worries me to know that the Bank of Japan has had a history of pulling back on aggressive policy just as their economy was beginning to improve and deflation was receding. Keeping that lesson in mind, we should not pull back from a program that is both working and likely a major reason why our economy is improving better than those of most other developed countries.

We have a dual mandate. With inflation well below its target and unemployment well above full employment, we do not have dueling mandates. Each mandate implies the same policy prescription: accommodation. But given the increasing divergence from our inflation target and the only modest improvement in the unemployment rate that is, to a large degree, reflecting not the strength of labor markets but the weakness in labor force participation, this is no time to hesitate in our quest to achieve our congressional mandate.

While I have no objection to Governor Duke's language, the current draft of alternative B is quite parsimonious. I prefer a parsimonious approach when we do not want to change policy and when future action is dependent on incoming data that are quite uncertain. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. I support alternative B in the statement as presented.

Let me turn to the consideration of tapering, which may be on the table at the next meeting. In past discussions, I've expressed concern about the open-ended aspect of the current LSAP program and have shared my almost gut judgment that the growth of the balance sheet has to come to an end at some point. And I somewhat arbitrarily settled on the threshold of \$4 trillion, beyond which my level of discomfort starts to rise substantially. Now, with a tapering decision being considered as immediately as the June meeting, I'm concerned about how the Committee, and the Chairman, explains the rationale for such a move. As I said at the end of my economy-round statement, I'm skeptical we'll be able to point to tangible improvement in the incoming data as auguring a materially improved outlook. Claiming an improved outlook with little real-time evidence strikes me as a tenuous position. So I see the decision to begin tapering as one of satisficing among somewhat conflicting concerns, not the least of which is credibility.

I see three concerns. First, there is the risk of removing policy stimulus prematurely, and doing so inadvertently by evoking a market reaction that has that effect. Second, there is the desirable aim, in my view, of suggesting a terminal point for the program, even with conditionality explicitly preserved. Third, I have some anxiety about the Committee losing

credibility by seeming to declare victory with respect to labor market improvement with the unemployment rate anywhere near current levels and broader measures of labor market performance showing spotty improvement at best. I'm concerned with how credibly we will be able to stick to the spirit of the conditionality around labor market improvement. I would make a comment about improvement since last September. The unemployment rate is 7.6 percent today, versus 7.8 last September. Since September, there's been very modest improvement in broader measures of the employment markets. Much of the real improvement occurred between September 2011 and September 2012. And if there is improvement, it's really in the staff and SEP forecasts more than it is in the data.

Depending on how conditions evolve between now and June, I can see myself supporting a decision to begin tapering if the communication around the decision is very carefully crafted. I think it will be important to emphasize that the slower pace of purchases is based on a receding of the risk that gradual improvement will not be sustained, and not on the claim that the outlook for labor markets has improved substantially enough to halt asset purchases. Related to that point, the tapering decision does not imply an imminent end to the asset purchase program. And, finally, as the Chairman stated in his last press conference, and as is suggested by the insert that Governor Duke would like to put in, the Committee is ready to adjust the pace of purchases up or down as economic conditions evolve. For the most part, I think that these last two ideas are captured well in the staff's illustrative language on page 10 of the memo on changing the pace of asset purchases, under the header "Moderate growth in economic activity and employment growth in coming months." As I said yesterday, I believe that it will be necessary to lean more heavily on improved confidence in the outlook, versus improvement in the outlook

per se. For that reason, I would suggest explicit reference to diminished downside risk as part of any tapering rationale.

Although, as I said, I think the sentence that Governor Duke suggests inserting needs emphasizing, I'm not ready to support it at this time. Given that we just don't know how things will look in two months, I'm reluctant to signal too much in this meeting's statement. So, after all of these considerations, I would go with the statement as written. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. Once again, I fully support maintaining the target range for the federal funds rate at 0 to 25 basis points. My only comment has to do with agency MBS. You all know that I've objected to purchases of MBS, based on our stated principle that we should avoid credit allocation. But let's set that objection aside for the moment. The theory or motivation underlying our MBS purchases is that those purchases, compared with buying a similar amount of U.S. Treasury securities only, are going to be reducing mortgage rates to below what they otherwise would be. By deciding to buy MBS instead of a similar amount of Treasuries, mortgage rates are lower than they would be. So housing activity, presumably, would be stimulated. That's presumably the objective of our tilt toward MBS. Housing has been increasing over the last year or so, and I think that should raise the question as to whether we should begin shifting away from MBS. I think that needs to be on our agenda. Now, you might object and say that the housing recovery is incomplete, that it would falter without our continuing support, or that we pulled the rug out from under it. I'm not sure I agree. It's not clear to me that we should be expecting this housing market to head back to 1½ million units a year, for example, anytime soon, and we can have a debate about whether that's the case or not. But surely there exists some level of housing market strength that ought to

cause us to change direction, pivot away from MBS, normalize our balance sheet, and shift back to Treasuries. So I think it's something we need to seriously discuss. It needs to be a serious option at future meetings.

One small, minimal step we could take in that direction would be to start reinvesting the principal payments from our holdings of agency debt and agency MBS into U.S. Treasuries, rather than rolling them into agency MBS—so, a gradual shift, as the MBS mature, back into Treasuries. No wholesale swap of a gigantic MBS portfolio dumped on the market—just the smallest step you could picture us taking, but, I think, a reasonable one. A larger step, of course, would be to taper our MBS purchases more rapidly than we taper our Treasury purchases or to make all of the tapering on the MBS side. But in any event, shifting out of MBS needs to be on the agenda because of the strength we've seen in the housing market. Thank you.

CHAIRMAN BERNANKE. Thank you. President Lacker, I've given some thought to your credit allocation argument, which I think is an important argument. I guess the defense I would offer is that, in normal times, when the Fed tries to stimulate activity, housing is an important transmission mechanism by which our actions affect the broader economy. We don't have a goal specifically for housing. Rather, it's just a tool by which we are getting overall employment and inflation where we'd like it to be. I guess I would argue for the analogy that we're not particularly interested in the housing sector per se, but rather, it is a transmission mechanism to achieve our broader macroeconomic goals. Of course, I think your concerns are legitimate, but that would be the counterargument I would give.

MR. LACKER. Yes, if I could follow up—there is this correlation. Obviously, some sectors are much more interest sensitive than others. A broad array of risk-free rates fall in recessions, and demand falls; demand rises, as sectors are stimulated by lower interest rates, and

they come back. The way we've done things in the past preserves a neutrality or an unbiasedness across different interest rate sensitivities. A corollary of us pushing mortgage rates below what they otherwise would be is that, in this recovery, small businesses, for instance, may be paying more than they otherwise would. If it's aiding housing, it's surely shifting resources from somewhere else. And I just don't see the analytical basis for thinking that that's going to lead to a better recovery than one that's neutral, in the traditional sense, about where the recovery is going to take place.

CHAIRMAN BERNANKE. It's raising overall activity. It isn't necessarily shifting resources from elsewhere—maybe just utilizing unutilized resources, like construction workers.

MR. LACKER. I'm not sure I understand that. I'm not sure I get that.

CHAIRMAN BERNANKE. Okay. President Fisher.

MR. FISHER. I won't try to broker this conversation, Mr. Chairman. But thank you, Mr. Chairman, and I will be making comments on MBS in the later session today.

I'd like to ask a question before I get started, if I may, so I get a sense of what the limits are here. I'd be interested in the staff's definition of what the practical limits are on the size of our balance sheet, and then I'd be interested in your views, Mr. Chairman, and those of the Vice Chairman of the Committee. So, may I ask the staff really quickly, what's a number? Is there a number? I mention this because President Lockhart mentioned his discomfort. Governor Yellen—yesterday, in her intervention—indicated that she was in favor of increased long-term LSAPs. But is it \$5 trillion? Is it \$10 trillion? Is it \$20 trillion? Would the staff kindly give me some insight? Have we considered this? What is the practical limit of what we can do—just so I have a sense of dimension?

MR. CLOUSE. I honestly have to confess that I don't think we have a particular number in mind. As we have talked about, we have some issues about the pace of the increase in the balance sheet, and Simon can comment on that. But we haven't focused as much on whether there's a hard limit of some sort or some point where the marginal cost of increasing our balance sheet really starts to kick in. Of course, as you might imagine, we've never really been in this territory, and it's very hard to bring any sort of empirical evidence to bear on it. So we'd be trying to reach that conclusion from a priori reasoning, which is a little bit difficult in the current circumstances. I'm sorry, but I can't really give you a very definitive answer on that.

MR. POTTER. In July of last year, we sent you a memo. I think we thought \$2 trillion over two years was the maximum pace that was sustainable. If we redid those calculations, we could probably go a little bit quicker than that based on the MBS side. That would get you to about \$4½ trillion, if we start at about \$2½ trillion. As Jim said, what the actual capacity is, I think, is going to depend on issuance after that and some of the costs that we've spoken about. But if you're talking about a physical limit, then the number is going to be much higher, as we can see in Japan right now.

MR. FISHER. But there is a limit.

MR. POTTER. There will be a limit because there won't be anything left for us to buy.

CHAIRMAN BERNANKE. President Fisher, another way to calculate the limit is to think about our exit tools. If we were to do alternative A, which is the larger set of purchases, we would end up with about \$2.4 trillion in excess reserves. We have, of course, the interest on excess reserves as a way of raising interest rates. But in addition to that, we have about \$1 trillion of capacity reserve-draining tools, which are the reverse repos and the time deposits, and we have about \$1.2 trillion in short-term Treasuries that we can sell. So, from a point of

view of exiting and maintaining monetary control, I don't think that that would be of particular concern. I think the concerns—I won't speak for others—that have been raised have to do with the side effects—financial stability concerns and the like.

MR. FISHER. That's helpful, Mr. Chairman. There is a limit out there; I'm trying to get my arms around what it might be, because one argument could be that, as we go through time, if we haven't seen the improvement that we'd like to see on the labor front, we just continue the process. And I'm trying to get a sense of what the fence line is.

Now for my comments on policy. I was pretty clear yesterday that, with regard to policy, I maintain that the efficacy of our current policy is questionable and will prove less efficacious as long as there is enormous uncertainty about fiscal policy and regulatory policy and until the fiscal authorities come forward with initiatives on the tax and spending and regulatory front that regear—again, I'm not advocating austerity; I want to make that clear—the economy so as to take advantage of already ultra-abundant and uber-cheap capital that we have engineered in order to create jobs. And one of the most disturbing statistics for me is that, in the last 10 years, in the two middle income quartiles, we've seen job destruction in the United States, not job creation. The important thing for me is to have a monetary policy that matches or is properly utilized by the fiscal authorities and that is directed so that the middle class, working men and women, are the beneficiaries—not just the rich, so that the rich get richer.

I mentioned Japan's Abenomics last year and the third arrow. Clearly, we need a third arrow—structural change—and no further amount of monetary accommodation will solve that problem. Businesses simply cannot make decisions under conditions of total uncertainty, and they are operating in a fog of uncertainty. If you look at the cap-ex numbers, we're back to 2007. What we want to see is additional cap-ex with real job-creating capacity and commitment,

and I just don't believe that will be made until that uncertainty fog has lifted. We at the Dallas Fed have been looking carefully at this issue and are working with Professors Baker and Bloom of Stanford and with Professor Davis of Chicago. They've tried to put some numbers on the price of uncertainty. You may or may not buy their theories. We're going to have a conference on that, which is coming up. But there is a price to uncertainty, whether it is the 1.5 million workers whom, they claim, fiscal uncertainty has waylaid or a shaving of GDP growth by 2.3 percent.

Again, I feel very strongly, Mr. Chairman—and I realize I'm in a minority—that, in continuing down this path, in terms of efficacy, that efficacy is diminished until we have a matching partner on fiscal policy. And in fact, I think it becomes counterproductive, particularly if we don't define what the limits may be. I don't believe the market—they have a sense of what the limit might be, but remember the expression “QE Infinity” after we went on the last one? So we need to have some better definition and better communication here. I don't think we've had it.

Now, I did mention yesterday that our 11th District surveys were less than buoyant. I referred to Carteresque malaise among business leaders. It may be temporary, or it may be a more permanent phenomenon, but it is afflicting decisionmaking. And again, I don't believe that further monetary accommodation can change that. Yes, the markets might have a reaction if we were to indicate—even to the degree Betsy has suggested, which I support—that we might begin to taper. As Jim pointed out yesterday in response to questions, we might have market reactions. But as Governor Stein argued yesterday, I don't believe we should allow ourselves to be placed in an expectational trap. Mr. Chairman, you referred just now to the Blue Chip economists. What's their record for accuracy? It's not very good. And fulfilling a commitment

expectation—you're right, but I believe we should condition that expectation. We should not let market expectations control the decisionmaking process, and we should simply do what's right for the economy. I believe that the right thing to do is to begin tapering now. But as I don't have a vote, I don't expect people to listen to me at this table today. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. I can support alternative B today, although I continue to have some reservations. Throughout this round of asset purchases, I have felt that economic and financial conditions warrant a purchase program smaller, and probably shorter in duration, than the one the primary dealers appear to anticipate. The staff assessment shows that the primary dealers anticipate a program nearly of the size that's assumed in alternative A. I continue to think that some caution, in the form of a slower rate of purchases, is appropriate, given the potential complications of a larger balance sheet and the gradual improvement in labor markets that has occurred and that I anticipate will continue.

At our upcoming June meeting, our purchase program will have been under way for nine months. In my view, the June meeting will be an appropriate time to evaluate how substantially the labor market data have improved since we began the purchase program. As a Committee, we have discussed at length the possibility of a smaller program. However, so far, as we've been talking about both yesterday and today, market participants don't seem to be receiving the message that the program could be smaller than \$1 trillion. Therefore, I think it is appropriate that the minutes continue to reflect that some participants are expecting the end of the purchase program to occur before the end of the year. Given that the primary dealers seem to be interpreting our current communications in line with a program that's the size assumed in alternative A, I believe that the signal from the minutes and the statements should be a bit firmer.

The subtle change in the language that we made at the March meeting did not shift market participants' views very much at all. So I support the option of adding the sentence that was suggested by Governor Duke, for all of the reasons Governor Duke articulated. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. I can support alternative B at this meeting. I do continue to be a little perplexed at some of the inferences about the size of the program under alternative B, as opposed to alternative A, as opposed to alternative C. The language that we have is simply open-ended, and the Board's staff has to do a good job and think through what some assumptions are about the size of the program. But, frankly, I can support alternative B and still think that the size of the program is going to be, ultimately, about \$1 trillion. I just don't really see any conflict per se there.

Economic developments since our March meeting suggest that the recovery's momentum has not increased. And in fact, I worry that it may be receding. While it still seems premature to explicitly mark down my outlook, the risks seem, to me, decidedly weighted to the downside, although I did hear—as you did, Mr. Chairman—a diversity of viewpoints on that around the table. The incoming spending data aren't encouraging, and picking up any momentum in the near term is likely to be challenging, as business planning again seems to be taking another cautionary stance. The March payroll employment was a far cry from the 200,000 pace that I look to as an important measure of substantial improvement in the labor market.

I thought Governor Yellen's comments yesterday on interpreting what constitutes maximum employment were terrific. She got at very carefully what I was trying to come to grips with myself by asking questions. The unemployment margin and the labor force margin are two

things that we ought to be looking at. And I had taken note of the Erceg and Levin paper; it's a very interesting one. If you haven't seen it, I would commend it to everyone because it has a cautionary note that, by focusing on the unemployment gap as our resource slack, we might be overly conservative—that in fact, in order to get to the maximum employment gains that Governor Yellen was talking about, we might need to do even more. Now, I know that's very difficult for many to take on board in their own views. For me, it's a robustness cautionary note, which is, there's uncertainty about what the right policies are. I think that the optimal control policies that we see in the Tealbook are, in some sense, conservative, because they don't allow for some of these labor force margins. I find myself quite comforted by these additional results.

Financial markets continue to be functioning well, even while economic risks around the world remained heightened. I thought President Kocherlakota circulated a very interesting memo on how we might come to grips with trading off these two risks: dealing with not only the state of the economy, but also the potential risk that a financial blowup would lead to an increase in unemployment on the scale of what we saw before—small probability, but very bad outcome. And when you balance those against our policy loss function, it seemed to me that that got to the right answer, which is, we need to continue focusing on getting the economy going.

For me, I haven't seen substantial labor market improvement yet. I think we've made good progress, but the downside risks do worry me. My own expectation for the open-ended program—I had a slightly different view. I haven't always expressed it this way; maybe I have. But I thought that we could run \$85 billion per month all the way, until we got to the end of the program. It wasn't obvious to me that we had to do tapering. In fact, with QE2, we didn't do tapering; we did the full program, and then we basically stopped. So, on that viewpoint, I could have imagined that we were going to end up with a \$1 trillion program, something bigger than

QE2. And the dealers and the experts who've looked at that came to the same assessment. That doesn't make them right; it's just that they seem to be following what we have said. So I do worry a little bit about how we've been talking and what their expectations are.

Just to end, I think I worry about the tapering. If we're going to do that, I think that we need to have a faithful revelation of our intentions for the size of the program and what "open-ended" means after that. If in fact we intend that \$750 billion is as much as we're going to do, no matter what, then we ought to be willing to say that. If we don't, then that could cause a lot of heartburn with the markets. That's not the view that I prefer. But if we were to go down that path, I think we ought to do something like that.

Lastly, on Governor Duke's language, I could go either way on that. I guess I do prefer parsimony. I would point that every time somebody talks about forecasting, I'm not aware of anybody who forecasts well. I think the answer to the question "Did X ever forecast well?" is always, "No, nobody does." The history of forecasting what new language will lead markets to infer is about as tough an exercise as anything that we do. I would take note that, by mentioning that this is going to depend on inflation changes, given that the inflation data have come in very low, it would not surprise me if markets jumped all over that and said, "Oh, it looks as though they're about ready to increase the pace for quite another reason." And if we did that, I couldn't imagine a June tapering, if the markets got it wrong. So there are some risks involved in that.

Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. As I indicated in the last go-round, I think that there's been little change in our economic outlook since the last meeting. The forecasts are very similar. Based on the New York Fed dealer survey and expectations of the size of the

balance sheet, monetary policy has eased in the intermeeting period. According to the dealers' median forecasts for Treasury and agency MBS purchases, the program size is now estimated to be \$1.37 trillion, compared with \$1.22 trillion in March, and they expect us to be buying until the second quarter of 2014 rather than the first quarter of 2014. In my view, these expectations seem to be based on rather volatile monthly data and could easily be shifted again, upward or downward, depending on what happens going forward. On the other hand, if these are really forecasts of our behavior, then they seem to be somewhat at odds with our own current view, as expressed in the expectations in the Tealbook. So there continues to be somewhat of a mismatch here about what they think our reaction function is. What we have to be careful about, I guess, is not to let our decisionmaking process and our reaction function be driven by what the market perceives our reaction function to be, when in fact we haven't articulated what that reaction function is. And I think that's this expectational trap, in part, that we have to be careful of. We haven't really articulated that reaction function. But if we are unable to live by what we have said—which is that we can move the program up or down, depending on the data—then it's important that we be able to demonstrate that. I'll come back to that in a moment.

I would favor bringing the current LSAP program to a close as soon as practicable, at least by year-end. I see the economic benefits of the program as quite limited and the costs rising with the size of our balance sheet. As we approach exit, I think that the size of the balance sheet is going to matter more and more as we get closer to changing course. Ending the LSAPs would serve us well in terms of reducing potential future problems with exit. We have two employment reports between now and our next meeting. To me, employment growth in the 120,000-plus range, averaging over those two reports, together with the improvement we've already seen in the unemployment rate and hours worked, would allow us to begin tapering,

consistent with an improving labor market. Scaling back does not mean stopping, necessarily, and we need to add credibility to our statements that we are willing to move it up and down as economic conditions improve. I think that a failure to do that would undermine our own credibility. While I don't think we should have embarked on this program or this path, given that we have done so and indicated that we will move it up or down as appropriate, we should be willing to demonstrate that as the data improve.

I would not favor coupling such a move with a change in forward guidance that suggests we would be keeping rates lower longer for now. In particular, I would not favor lowering the unemployment threshold, as is suggested in alternative A. I believe that such a move would be very confusing to the public and likely be misinterpreted. They will not understand why we are doing this or under what circumstances we might change it yet again. What we are trying to achieve, in their mind, would be highly confusing. The public already is thinking of the unemployment threshold as a goal that we think we can achieve. I think that's a dangerous notion. Moreover, regardless of what we say, the public seems to be dismissing the inflation threshold as irrelevant. If we lower our unemployment threshold to 5½, there's a good chance that the public will interpret this as a message that inflation will not be a problem as long as the unemployment rate is above 5½ percent. That probably strains credibility. I believe that the public will view the 5½ as our ultimate goal for unemployment. This in turn runs counter, in my view, to our reaffirmation in January, in our Statement on Longer-Run Goals and Monetary Policy Strategy, that we do not have a numerical goal for that portion of our mandate.

There's considerable uncertainty surrounding the steady-state unemployment rate and how much of the increase we've seen over recent years has been permanent or not. Lowering the unemployment threshold raises the probability that our inflation threshold will be reached before

the unemployment threshold. Most of our memos place no probability, or very little probability, on this action. I think, however, that moving to that threshold would make that probability increasingly likely. Inflation expectations seem quite stable now, but we don't really know how fragile they are until a problem arises. I would not want us to be in a situation where we've set an unemployment threshold so low, and then be put in a position where we have to decide whether to move when the unemployment rate is so far away from our threshold and inflation seems to be rising. Because it's a threshold, we won't have to act. After all, we've said that they are thresholds and not triggers. But if we don't act, how will we be interpreted by the public? Will they think we've abandoned our target? Will they understand how much above $2\frac{1}{2}$ we'll allow inflation to go before acting? This Committee has not communicated anything about how we will behave when either of our thresholds is met. And the more we try to manipulate them, the more confusing the meaning of these thresholds becomes. Until we have a better sense of how we would act in each of these scenarios and can answer such questions among ourselves, I think we should be very cautious in lowering unemployment thresholds or moving them around as if they were some kind of moving target.

I have other concerns about our zero-interest-rate policy. I'm becoming increasingly concerned that it's fostering buoyancy in asset markets and spurring some investors to take on more risk than they intend to do as they reach for yield. Moreover, as President Bullard has expressed in the past, I worry that it can be counterproductive to the extent that it fosters expectations that the economy is going to be in a bad state, with low economic growth and deflationary pressures for a long time. The possibility of multiple equilibriums makes forward guidance, I think, difficult to use. Suppose we are in fact in this bad state, or a less good state, equilibrium, and it's an equilibrium where the steady-state unemployment rate is 6 percent or

maybe higher—perhaps lower than our current threshold, but higher than $5\frac{1}{2}$, as in alternative A. Committing to keep interest rates at zero until we reach that point could ensure that we stay in that bad equilibrium. A zero-interest-rate commitment would prolong the very poor outcomes that we're trying to avoid.

So while I can support alternative B today, I would like to see us begin setting the stage for dialing back the degree of policy accommodation, rather than seeking ways to increase it. As to the language, I can support Governor Duke's suggestions for the change. I'm comfortable with that. I would also note that, if you look across all of the policy rules summarized in the Tealbook, the average of the unconstrained rules is now very close to zero, suggesting that policy is about right. Each of those rules, by the way, recognizes, in fact, that we were missing on both sides of our mandate, and yet they tell us that policy is about right. They don't call for significant increases in accommodation based on that wide range of rules. I think we can wait for a while before we move away from zero with our funds rate, but I would be very cautious in assuming or indicating that it will be a very long time relative to what is already expected in the marketplace. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I want to follow up on President Plosser's comment there, which I think is very important. It is often said around the table that we're missing on both sides of the mandate. But if you think of a normal Taylor rule, it will tell you where to be if the gap is such and such and if the inflation rate is such and such. It'll give you a number. The policy will be set appropriately, given those readings, so whether you're missing on both sides is not really the story. The story is, where are you? Obviously, we're at the zero bound, but we've taken many other policy actions since we've been at the zero bound.

All right. For today, I counsel patience. I think we should get more data—that seems to be where most people are today—and I support alternative B. I also support Governor Duke’s amendment, which I think is very good. I agree very much with her comments today, which I thought were very good to start this session. My goal would be to set up the Committee to make a move either way during the summer, if the Committee desires, and I think that this would reinforce our ability to do that. We want to be able to recognize noticeable progress in labor markets in a smooth way, without saying that substantial progress has already been achieved. You don’t want to be blind to the data that have come in, but, at the same time, you don’t want to say, “Well, game over, and everything is good.” To be able to make small moves in reaction to the data is highly beneficial to the Committee. So I think this is an appropriate way for the Committee to behave in this environment.

I want to also stress the point that, suppose you make a change in the pace of purchases. We’re still buying assets. It’s still a very aggressive policy. It’s still a monetary policy that is moving toward an easier stance. And something to also mull over is that, even if you change the pace of purchases, the total size of the program may not change. I think the notion of changing the pace of purchases is to signal that you’ve seen the news that has come in, and you’ve reacted to it and given a verdict on it, and the markets can go from there and interpret that. I’ll stop there on that.

I do think markets are clearly adjusting expectations in response to shocks. As news comes in, markets definitely adjust their ideas about the amount of accommodation that will be offered by this Committee. To me, this is a critically important part of how private-sector expectations and policy expectations are intertwined as part of the general equilibrium. Bad policy would be when changes in incoming data do not affect expectations of policy actions. So

the data come in better, and the policy looks the same; the data come in worse, and the policy looks the same. That is one of the worst policies because you're not reacting at all to the changing state of the economy. The notion that bad news comes in and the market pushes up the size of the program or the pace of purchases, or vice versa is part of the equilibrium. And to me, that's a good aspect of what we've been able to achieve with our open-ended QE program. So I do not think that this is an expectations trap. This is an equilibrium; this is how it works. In normal times, with interest rate targeting, good news would come in, the private sector would adjust their interest rate path expectations, and this would be perfectly appropriate. I think that that part is working fine and is serving the Committee well.

As I said earlier in this meeting, inflation is low by our preferred measures. This is a concern to me. It bears watching, and I absolutely think it's very important that the Committee defends the inflation target from the low side if that becomes necessary. Now, as I said yesterday, I do expect inflation to turn around. I appreciated President Pinalto's comment that if you look at the CPI, it doesn't seem as low. Inflation expectations do seem better anchored than they were in the fall of 2010, when they were also drifting down badly, I thought. So I think we're still okay on this, but this bears watching. This has been a trend, all through 2012 and now into 2013, on the year-over-year PCE inflation rate. And if you're going to say 2 percent, you'd better defend 2 percent. That's a critically important part of our credibility.

Let me reiterate that I do not think we should end or taper the asset purchase program solely because of an arbitrary cap on the size of the balance sheet. I think that would be extremely damaging to the Committee at this juncture because it would take a tool, probably our most potent tool, off the table. To just say that we've had enough, we've reached some kind of limit, and we're stopping would really put the Committee in a difficult position. It would mean

that the only policy tool at our disposal is a forward-guidance tool, and, I've been skeptical of the forward-guidance tool because, as President Plosser was just talking about, I think it's a double-edged sword. It can be problematic, although we've tried to use both. On this dimension, I'll make a couple of comments. The Fed's balance sheet as a percentage of GDP is not as big as the other major central banks' balance sheets as percentages of their GDPs. This is a little bit of cold comfort, but to whatever extent that there's risk to be taken there, we have other examples around the globe where that risk has been taken. Not that I want to go too far, but I do think we have room to maneuver on the size of the balance sheet, really enough room to maneuver to carry out this policy in a good way through 2013 and into 2014. But I also think it's important to adjust the pace of purchases in reaction to incoming news. If you don't do that, then it's going to be too stagnant of a policy. The Fed's balance sheet has also been very large in the past. If you look at the historical data in the '30s, for instance, the Fed's balance sheet was quite large at that time. So it's not that this is really unprecedented in U.S. history.

Has the labor market improved? I'd like to associate myself with the comments of Governor Stein and Governor Powell yesterday. I think it has improved modestly. Obviously, we're not completely at our goal. That's fine; I understand that. But we have made progress, and we should be able to somehow acknowledge progress when it does occur. I think that's the essential feature of policy during the summer and fall here. All right. Thank you very much.

CHAIRMAN BERNANKE. Thank you. President Williams.

MR. WILLIAMS. Thank you, Mr. Chairman. I support alternative B. The current stance of policy remains entirely appropriate. And as I discussed yesterday, there are encouraging signs of progress in the outlook for the labor market, but we have yet to meet the substantial-improvement test.

In terms of Governor Duke's suggestion, I have to admit I like the fact that alternative B didn't change much from last time. But one comment I would make is, I noticed that last time, we actually did add to paragraph 4 the words "as well as the extent of progress toward its economic objectives." I saw that as an attempt to get this conditionality in there. So it seems to me that Governor Duke's suggestion would be to add another sentence to that. I thought that maybe we could say, "Really," or something like that [laughter] to get this point across, because that was the effort we made last time—maybe a fancy script or italics or something. In the end, I think that I'm fine with the suggested addition, but I'm just not that confident it will change things that much.

Now, in my view, the time to completely halt our asset purchases is still a ways down the road. As we approach that milestone, I expect that we'll ease up on the accelerator and begin to taper our asset purchases. This will present us with a delicate communication challenge of announcing a reduction in the pace of purchases without causing market participants to interpret this as a lessening of our commitment to keep aggressive monetary stimulus in place even as the recovery strengthens. So, looking ahead to that day, I think that paragraphs 3 and 4 of alternative C provide a good template for this purpose. To me, it's very important that the language makes it clear that we're adjusting the pace of purchases in response to improving conditions. I just think that's an important part of our communication, when and if we choose to taper—that it's really in response to improving conditions. The second is that it's very important when we get to that point to reaffirm our commitment to continue purchases until the outlook for the labor market has improved substantially. Thank you.

CHAIRMAN BERNANKE. Thank you. President George.

MS. GEORGE. Thank you, Mr. Chairman. Alternative B continues to apply substantial monetary stimulus to a growing economy. While I do support accommodative policy, continuing this policy well beyond our response to the crisis and recession, I think, poses risk to long-term sustainable economic growth. And the risk associated with zero interest rates for many years, combined with the ongoing expansion of our balance sheet, has become more significant.

Evidence of financial imbalances has emerged, although, as many have noted, near-term risks to broad financial stability seem unlikely right now. But such risks should not be dismissed. We know from history that early identification is problematic. Innovation tends to outpace regulation, and supervision cannot prevent changes in the structure of portfolios from occurring. As risks surface in multiple areas, they individually may not threaten the broad economy, but they are symptomatic of conditions that give rise to excessive risk-taking, reaching for yield, and asset mispricing. Zero interest rates for an extended period of time create such conditions and, as such, pose real risk of painful future adjustments. For example, nonfinancial firms continue to increase debt issuance. And while leverage is not yet alarming, it is accompanied by signs of weakening underwriting standards. For example, the nearly \$90 billion of covenant-lite loan issuance in 2012 was just below the previous record set in 2007 and has continued at a rapid pace. In terms of asset purchases, I do remain concerned about future costs. The exit strategy memos and analysis are reminders of the complications and complexities, as well as uncertainty, associated with the conduct of monetary policy going forward, including risks to future long-term inflation expectations.

Because of these concerns, I would prefer to take steps now that signal an intention to begin tapering these purchases at midyear and allow markets to adjust their expectations, reduce

reliance on asset purchases, and return to more-normal risk pricing and market functioning. Language from alternative C that speaks to expectations of improving economic growth later in the year and continued improvement in labor markets could provide some signal to market participants that tapering is likely to start sooner than their current expectations. Thank you.

CHAIRMAN BERNANKE. Thank you. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. As I discussed in the last go-round, I believe that without further policy accommodation we will be falling short of both of our dual mandate objectives over the medium term. The January principles statement says that, if we can, we should seek to mitigate such deviations by providing more accommodation, so I'm perturbed that so much of the conversation around the table is really about how we can provide less accommodation. Now, I say "if we can"—I think there are in fact a number of ways that we could provide the needed boost to our stimulus program: We could buy more assets, we could lower the interest on excess reserves, we could lower the unemployment rate threshold, or we could communicate about policy during exit. And I'll talk about all of these briefly. Just to be clear, though, we don't need to be choosing among these tools in isolation. Monetary stimulus depends on the future evolution of the total package of accommodation. We could create any given arc of stimulus in a number of ways given our multiple tools.

One way to provide more accommodation—and the one that, I guess, is being contemplated in Governor Duke's sentence, for example—is to buy more assets per month, as is described in alternative A. I'm not opposed to doing this, but I do see problems with a faster open-ended purchase program of this magnitude. It seems that the asset purchase program is not well designed to be the kind of open-ended tool we'd like. As President Fisher highlighted in his remarks, and as others have hinted at, there's some kind of cap out there that people feel

uncomfortable with. It's not always clear why they feel uncomfortable with it, but they are uncomfortable with it. If you have a cap of some kind, it's pretty hard to have an open-ended purchase program; they don't work well together. So I don't think that would be the way I would go—to try to provide extra accommodation through alternative A. In fact, given these considerations, I think that we might want to downplay this tool in favor of moving to other forms of accommodation, of the kinds I'm going to be describing later in my remarks here.

Another approach is to cut the interest rate on excess reserves. I think we can do this. My reading of the act on this—and I'm not a lawyer; we have lawyers who could speak to this—seems to be that we can't make it negative. A lot of my academic friends are quick to point out that we should make it negative, but it doesn't seem as though it's legally possible. But if we can't make it negative, this kind of move is going to have only limited stimulative consequences.

Let me turn to the two steps that I would view as more effective. The first is one that I've discussed at some length—lowering the unemployment rate threshold to 5½ percent. The Tealbook and the staff memos expressed several concerns about this move, and President Plosser has also expressed some concerns in his remarks. So let me talk about those. One concern that the staff memos and the Tealbook raise is that the promises about the future path of the fed funds rate are somehow less tangible than actually going out and buying billions of dollars' worth of assets. But as I think about the economics of the program, the buying of an asset is largely irrelevant in terms of the stimulus. After all, we go buy an asset and go sell it the next day—it really hasn't done anything in terms of providing stimulus. The stimulus that comes from any asset purchase depends on how long the public expects us to keep the asset, which is, again, a promise of some kind. Basically, monetary policy is always about the public's expectations of our implicit promises about future accommodation, whether those expectations concern our asset

holdings or interest rates. So this tangibility argument doesn't have much bite, at least with me. The other concerns all seem to boil down to one main idea, and I think that President Plosser was getting at this, too—that the public sees the thresholds as being somehow fixed and immutable, and so changing them is going to really introduce a lot of challenges and complications, especially with respect to credibility. Now, probably more than other people around this table, I've spent time talking to members of the public and to the press about lowering thresholds, and I discount these concerns. Both the media and the public typically seem to understand that our commitment on the thresholds is asymmetric. The commitment constrains the upward movement of the unemployment threshold, as opposed to its downward movement. I'm very sympathetic with a number of remarks that President Plosser has made in public, and in this meeting room, about the need to be clear about our reaction function. I think these remarks are spot-on. The lowering of the unemployment rate threshold from 6½ to 5½ is in fact only designed to provide that desired clarity. Right now, we do not say anything about what we're going to be doing when the unemployment rate is between 5½ and 6.4 percent. Lowering the threshold provides clarity about what we'll do. We will keep the fed funds rate at its extraordinarily low level when the unemployment rate is in that interval.

So, with that in mind, suppose we did want to view our previous language about thresholds as being immutable. There's a simple way around this problem of viewing that previous threshold being immutable and still lowering the threshold. We leave the current threshold paragraph exactly as it is, and we add a new paragraph to the statement. And this separate paragraph states three things. First, "the Committee has not previously communicated about its likely policy stance when the unemployment rate is between 5½ percent and 6.4 percent." Second, "after today's deliberations, it is now in a position to release that

information about what it's planning to do in that interim." Finally, "the Committee anticipates that it will keep the fed funds rate at its current extraordinarily low level when the unemployment rate is between 5½ percent and 6.4 percent." And then we have the inflation caveats, which are important; I'm not trying to downplay them. Actually, to distinguish them—we have a bunch of other caveats in our other threshold paragraph—we could have different caveats here if we wanted. That would be fine with me. That would actually distinguish the nature of our reaction function even more clearly. But I think my point is simply, we want more clarity about our reaction function; this is a way to provide more clarity, and it's a way to also provide stimulus, so it's doing both things at once. We're not changing our previous communication about the Committee's reaction function in any way. It remains, word for word, the same. We're simply adding a complementary paragraph to the statement that serves to provide more clarity about an entirely distinct aspect of our reaction function.

I've already indulged your time enough, but let me quickly talk about communication about the eventual withdrawal of accommodation. This communication could take a number of forms: We could announce that we expect to hold assets until maturity. We could announce that we expect not to halt reinvestments. We could announce that we plan to withdraw accommodation more slowly than in prior tightening episodes. I think that most usefully—and I'll come back to this in our next go-round—we could provide information about our policy goals during the exit process. We could say that we plan to withdraw accommodation slowly as long as the medium-term inflation outlook did not rise by more than 50 basis points above our longer-run target. Right now, our current exit strategy principles rule out all of these communication approaches. But I'm hoping that, following up on our discussion later today, we

can soon change these principles to be more flexible, along the lines described in Monday's Minneapolis memo. But I'll come back to that in the next go-round.

Mr. Chairman, my outlook clearly calls for adding more accommodation. I was telling some people earlier this morning that I'm talking about adding accommodation, and I don't think I'll be successful in persuading the Committee to do that today. But others in my house are going out and doing something about it. My wife is buying a new car today, so we are providing some extra accommodation to the economy. I've described a number of ways to achieve that extra accommodation. It would be wise to use a mix of approaches, in light of the uncertainty associated with any of them. There's a lot of discussion about tapering and the need to taper and the desire to taper. If I think about this in terms of our progress toward our goals, what we're trying to achieve in terms of the economy, I think it would be very challenging for me to try to stand up and articulate, when I'm giving a speech and explaining our position to the public, that, yes, we're satisfied with what we're doing on unemployment, so we're cutting back on what we're doing on asset purchases. Doing that alone just sends totally the wrong message—it would be very challenging for me to explain that in the context of the other messaging we have about how we want to support the recovery as long as it doesn't have inflation pressures. If we do want to taper the LSAP because of these concerns about the exit, we really want to be pairing that tapering with something else to provide extra accommodation. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Yellen.

MS. YELLEN. Thank you, Mr. Chairman. I support alternative B as written. With respect to our asset purchases, I don't think we've moved meaningfully closer to achieving a substantial improvement in the outlook for the labor market, even though yesterday I noted silver linings among the dark clouds of the March labor market report. Several people have noted that,

cumulatively, the Tealbook projection for the unemployment rate at the end of this year has been revised down 0.6 percentage point since September. But it's important to bear in mind that the projected labor force participation rate has also been revised down. This means a higher estimate of the cyclical shortfall, and, when you work out the math, that substantially reduces the implied employment gain from the lower estimated unemployment rate.

With respect to efficacy, I see no evidence that our asset purchases have become less efficacious. In fact, I was heartened by the robust performance of private domestic final purchases in the latest GDP release. Strong consumer durable purchases and continued progress in housing help offset intensifying drag from a substantial tightening in fiscal policy. Our purchase program entails some costs, but I continue to regard them as manageable at this point. Moreover, I don't think we've learned much that's new about costs since the program began. I'd also add that I consider market expectations concerning the likely size of this program reasonable. They coincided very closely with my own at the outset of the program. And I do think—this is something President Bullard emphasized, and I agree—that markets have been reacting sensibly to economic news in adjusting their expectations about the program, and that is serving an important automatic stabilizer effect.

Going forward, I'm certainly open—and I think it's quite appropriate—to adjust the pace of our asset purchases, depending on the progress we make in meeting our economic objectives. I hope that the softness we've seen in the recent data does not portend a more pronounced slowdown in the months ahead, and that private demand will prove robust enough to offset increasing fiscal drag. And I hope that the labor market will continue to improve in a context of strengthening economic growth. Before scaling back our purchase program, we need to have greater confidence that the improvements we've seen in the labor market since the start of our

program will continue. If these hopes are in fact realized, I see the potential for us to reduce the pace of our purchases even before we've fully achieved what we deem a substantial improvement in the outlook.

I appreciated very much the helpful memo on communications issues related to changing the pace of our purchases. Of course, I'm hoping that we will be able to begin tapering our purchases because we see sufficient progress toward our objectives. If the employment reports for April and May are reasonably strong and are supported by solid spending indicators, I'm open to considering tapering our asset purchases at the June meeting using language similar to the one shown for the "Strong growth in economic activity and employment in coming months" scenario on page 9 of that memo. If the pace of improvement in labor market conditions turn out to be more modest, but nonetheless sustained, I could envision beginning to taper, say, at the September meeting using statement language along the lines suggested in the staff's "Moderate growth in economic activity and employment growth in coming months" scenario. If, in contrast, we decide to taper asset purchases because of a changed assessment of their efficacy and costs, we will owe the public a coherent account of what we've learned since the start of the program that has now convinced us that the cost–benefit tradeoff has turned negative. The illustrative statement language that the staff prepared for the "Modest growth" scenario demonstrates, in my view, just how difficult it will be to explain why we decided to begin winding down our asset purchases despite lack of progress on labor market improvements and for reasons we did not already know at the time we started the program. Nonetheless, without some explanation, we risk damaging our credibility and, with it, the credibility of our forward guidance. I believe that the market reaction could be swift and severe, and I think we should not contemplate taking this route anytime soon and not without dire need.

I would also caution against overestimating our ability to substitute accommodation through other means if we reduce the pace of our purchases on efficacy-and-cost grounds. Our asset purchases send a powerful message that we're committed to promoting a self-sustaining recovery. A decision to end them would call that commitment into question and, in the minds of the market, likely take asset purchases off the table as a remaining tool in our arsenal. In this context, and with financial markets already expecting that we will provide accommodation through the federal funds rate for years to come, I really would question how much scope we'd really have to offset the impact of such a shift through further alterations in forward guidance.

Finally, on Governor Duke's proposal, I'd prefer not to include the new language, although I have absolutely no objection to the substance. We did include new language last time. We've emphasized this point in speeches. I think it's well understood in the markets, and I think markets might take it as a signal that I'd consider premature that we anticipate action in June.

CHAIRMAN BERNANKE. Thank you. Governor Tarullo.

MR. TARULLO. Boy, there is a lot of disagreement around the table. What I've noticed this time—and it just struck me—is that there seems to be disagreement among people whose instincts generally go in the same direction—that is, those who have more accommodationist instincts and those who have less accommodationist instincts. I guess, then, that my remarks are probably directed to those of us who think of ourselves as somewhere in the middle. There are, roughly speaking, three groups, although, as I say, there's more disagreement within those groups than I had anticipated. One group was always skeptical of any real benefits coming from the LSAPs and feared that inflation or other problems were just around the corner. The second group is pretty comfortable and doesn't see much risk associated with LSAPs. So, for them, it's basically a question of, when do you see improvement? For whatever group that is—and I won't

assign a number of how many people are in the middle—I think Jay and Jeremy have, for some time now, identified the issue, which is, what happens if we get into a circumstance in which there is a tepid performance of the economy, in which things are not demonstrably showing improvement—or, in the terms I used last time, a reasonably high plateau—but they’re also not deteriorating? And this is the concern, I think, that both of them expressed again yesterday.

I believe that one could share that concern to a lesser or greater degree and still think that this would be an odd time to indicate any movement toward tapering or ending the program. If anything, the economic situation since the March meeting has looked less bright. The moderate benefits we’re getting from the program—and I do think it’s a little hard to deny that there are moderate benefits; whether you think they’re as great as or greater than the Tealbook says may be debatable—seem particularly worth maintaining, as we’re going into the period in which the sequestration is going to have the maximum contractionary effect on the economy. So any implication that we’re starting to think more seriously or look forward to June as a tapering moment would seem dissonant at this moment, both on substantive and on presentational grounds. As I also said last time, whatever the costs, whether they’re reasonably foreseeable, or the concerns, which I share, about the unknown unknowns that may attend continuation or eventual termination of the LSAP program, it seems hard for me to believe that these costs are materially greater whether we started ending or tapering in June or sometime later in the year. The potential roiling of fixed-income markets may happen whenever we slow down, but it seems to me at least more likely to happen if general economic conditions haven’t been good enough to start pushing longer-term rates higher. And the unknown unknowns, which might become greater as the balance sheet itself gets larger, seem unlikely to be substantially greater with several hundred billion dollars more of purchases. So, as I sit here today—this is a very limited

observation—it seems to me a reasonably low probability that, by June, we’re going to be able to look through the sequestration and make a judgment as to whether that underlying momentum in the economy promises substantial improvement. But I don’t foreclose the possibility that it will be the case. And certainly, if there are strong numbers in the next couple of months, notwithstanding the sequestration, that would be pretty good evidence that there was substantial improvement.

Finally, on Betsy’s language, it might have been preferable if we had included that language at the outset, because it would have given a bit of the flexibility that people, I think, would like to have. Several have already suggested possibilities for its misinterpretation in either direction right now. I think I share that, but this is one, Mr. Chairman, where, if going one way or another makes life easier for you, I’d be happy to go in that direction as well.

CHAIRMAN BERNANKE. That’s an excellent philosophy. [Laughter] Thank you. Governor Raskin.

MS. RASKIN. Thank you, Mr. Chairman. As I described in the economic outlook go-round, while I think the economy is making progress, I remain unconvinced that it has moved into a self-sustaining recovery. I’m not sure that the labor market has substantially improved. I also view the incoming price data as signaling that inflation is still too low and possibly moving lower. Therefore, at this juncture, I support the continued package of support as described in alternative B.

Given mixed incoming data, I’m not sure that the economy right now could stay on its current course if we were to begin to taper our asset purchases at this meeting or signal that tapering is imminent. In addition to the fact that we are still unacceptably far from both our inflation and our unemployment target, I continue to believe that the costs of prolonging

economic weakness could potentially be quite damaging to the economy's continued recovery. And the costs of continuing the program at the current pace do not seem salient enough to tighten policy right now. That said, the economy might be strong enough to withstand some tapering in June if the next two labor reports look more encouraging. If the unemployment rate has fallen considerably further by the time of the next meeting and the panoply of other labor indicators suggest that this is consistent with some real improvement in labor markets, tapering might well be in order. This response to the incoming data would be consistent with the conditional guidance we have given and would not likely be perceived by markets as a change in our conditional stance. Indeed, it likely would not even move markets much, because they would have already anticipated our decision upon the release of the better data.

Even if the labor market data were not absolutely clear that employment conditions had improved—and when are they ever?—somewhat better-than-expected data might still warrant some tapering. Setting the flow of LSAPs, and thus the implied total stock, in a continuous way, rather than as a switch that is either on or off, seems like a more sensible reaction to the reality that the flow of data is rarely definitive in real time about whether conditions have actually improved. Instead, we are always interpreting the data and updating the odds that we place on the possible states of the world. We may want to taper in response to data that seem to significantly improve the probability that the labor market is finally on the mend. In other words, the unemployment rate has come down a lot since September, and, now that it has stayed low so long, a moderate further improvement could suggest that the odds of continued improvement are a little higher. In other words, we can link tapering not to the clear and present signs of an improved outlook, but rather to the higher probability that we're going to see significant improvement. Of course, in a parallel fashion, worse-than-expected developments

would then lower the odds of improvement and thus lead to a higher flow of asset purchases again.

But if we say that the rationale for tapering is that it's the costs of the LSAPs that have become critically high, then, in the absence of solid improvement in labor markets, we ourselves may be the cause of unintended contractionary consequences. Markets will worry about functioning and stability and will likely interpret our move as less-accommodative policy. And this would then cast doubt on how committed we are to our thresholds or staying lower for longer. Of course, we could try to replace the LSAP program with other accommodative policies related to exit. That might work, but it relies, once again, on us being credible or, more precisely, on the FOMC that exists in 2015 and 2016 honoring the statements that we make now. So we would be taking away the one operational action we are doing now—in other words, the LSAPs—and would be making ourselves look less committed. If we pull back on LSAPs for costs today, why would we then not raise the funds rate because of costs associated with a low fed funds rate? In other words, it seems completely believable, and even logical, that the FOMC might next throw aside the threshold if we or our successors come to believe that the long period of low rates is causing froth in some markets.

The Carpenter et al. memo suggests that tapering with the rationale of costs and efficacy is like—and these are their words—“driving through a fog.” Just as a driver may slow in a fog, the FOMC might wish to slow the expansion of the SOMA portfolio while collecting more information about the economy, efficacy and costs, and other factors. The analogy of driving through a fog makes some sense from the perspective of the need to still drive until you get at your destination, which, for us, still must be maximum employment in the context of price stability. So the analogy would suggest that, even with a tapering, under this rationale, we would

continue onward through the fog until our LSAPs are complete. But do drivers in the fog really keep driving? Sometimes they say, “I can’t get to my destination,” and they see that it’s too dangerous to keep trying. Sometimes they say, “Let me pull over and stop driving for a while, try a different route, or change my plans altogether and head to a different destination.” So it appears to me that, absent a real fog, we certainly don’t want markets thinking that we’re driving in a fog, because they will then conclude that we might not conclude the trip. Or they may very well wonder why we didn’t do a good job of anticipating the fog, and they will no doubt completely doubt our ability to ever drive through fog again.

The best rationale for tapering would be underlying economic improvement. The second-best rationale for tapering would be an increased probability that economic improvement is higher, even a little higher. The third-best rationale, no improvement but costs that exceed benefits, carries credibility issues that not only may kill the chances of a stronger recovery now, but also might impair the ability of the FOMC to ever again credibly attempt to drive a recovery with a mixture of balance sheet and communication tools. The communication challenges inherent in each of these rationales are high, but, in the scenario in which we taper solely because of the costs associated with LSAPs, the communication challenges may well include the need to determine how to counteract what could be significant and persistent damage to the credibility that a central bank needs in order to ameliorate a period of severe economic weakness.

I will stop there and mention that, in terms of Governor Duke’s suggested language, I have no objection to it in principle. But I would observe that it doesn’t, to me, harmonize completely well with the sentence that comes afterward, the sentence that we added last time. If you look at the sentence that follows the proposed addition, it is a sentence that mentions not just the pace, but also the size and composition. It’s also a sentence that is a look back—a look back,

because it looks back at the extent of progress, as well as costs and efficacy. The new sentence addresses only pace—not pace, size, and composition—and it appears to be a look ahead. So while, standing alone, it appears to me to be perfectly fine, I do wonder what, if any, kinds of interpretations it might get when it's thought to harmonize with the next sentence. Thank you.

CHAIRMAN BERNANKE. Thank you. Governor Stein.

MR. STEIN. Thank you, Mr. Chairman. I support alternative B. I also support Governor Duke's proposed language amendment, although I am mindful of the caveat that Charlie pointed out, which is, with the inflation language in there, it could potentially be interpreted as saying that we might be willing to adjust up in the face of inflation concerns. I suppose you could just focus it on the labor market. That might address that, but I think, on balance, I would go with it.

Looking forward to June, I'm planning to argue in favor of tapering. I expect to do so for a relatively large range of outcomes. For the news that comes in between now and then—just to calibrate, loosely speaking—as long as the payroll numbers are in, say, the upper 75 or 80 percent of the distribution, my own view is that we should begin to taper in June. In the upper part of that—that is to say, if the news that comes in is better than expectations—I think the case is easy to make and is at least reasonably widely shared, so I won't dwell on it. The more challenging argument—and I'm clearly, as Dan pointed out, in the minority—concerns the lower part of the distribution, where you might characterize the news as disappointing but not really terrible. I think if you want to try to make the argument, it hinges entirely on control and communication issues of the sort that I alluded to in the previous go-round and is largely divorced from views about efficacy and cost. I want to note parenthetically that—a number of people have made this point, and I share the sentiment—on net, our actions have been more

efficacious than I would have anticipated in September. I want to set that aside. I think the argument for doing something in June is divorced from that. And in fact, suppose you were to tell me in June, “I’m not all that confident about the state of the economy, and I think we may need to be at this for a while longer.” I might say, “Well, okay, but then it’s important—and maybe even all the more important, if we’re going to be in this business for a while—that we have a pretty good handle on our communications technology for it so that we’re going to be in control and we’re not going to be held hostage to market expectations that sometimes respond quite strongly to transient data.”

Moreover, I think it’s possible—I guess this is where I maybe differ—to handle the messaging in this intermediately disappointing case in a pretty constructive way without declaring defeat—without saying that we got overtaken by cost—or otherwise doing things that are credibility damaging. Done right, it’s credibility- preserving, and here I’m really just taking off on some of the themes in the staff memo. Here’s what I would say in this more difficult case. The first thing we would say is that, in thinking about a decision to taper, because it’s the first time we’ve revisited it since September, the appropriate thing to do was to condition not just on recent news, but also on the cumulative information that we’ve had since September. And then I would allude to the forecast revisions we’ve had since September—that, in spite of the month-to-month choppiness and the fact that we’re facing fiscal headwinds, they’ve added up to something meaningful. I would take the fiscal headwinds on board but say, in terms of a message about the underlying strength of the economy, that the net progress is indicative of something. I would refer, again, to something that President Bullard mentioned. In a stock-based world, changing the rate of purchases is a second-derivative move. In other words, it’s a reduction of the rate at which we’re adding accommodation in the face of an economy that’s improving maybe not as

fast as we would like, but is improving nevertheless. So it's still a pretty aggressive policy. I would stress, again, that, in addition to whatever cumulative progress we've had, it seems somewhat clear that the downside risks have gone down a little bit. Then, of course, as the recent data readings remind us, there are still headwinds, and we're still not where we would like to be. As we continue onward, we would reiterate that we're prepared to adjust, either up or down, in the face of incoming news. Indeed, precisely because we haven't been explicit about our stopping rule, this variation in the pace is inevitably a central part of our communications technology. And if we're rigid and we don't change the rate of flow, you, the market, never really learn about where we think we are relative to where things are trying to go. I think that, as President Bullard and others have pointed out, we want to establish a premise that we can turn this dial after nine months and nine months' worth of news; that is an important premise. And if we're going to be in this business for another nine months, we want to be able to show that it's a dial that we can turn. That's, to me, the essence of the argument, and that's where I would hope to be pointing toward in June. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Powell.

MR. POWELL. Thank you, Mr. Chairman. I, too, will support alternative B at this meeting. And I want to talk about the question of when and why to taper, but, first, I want to put that question in context a little bit. I do continue to see moderate benefits from asset purchases, perhaps less than the Tealbook, but I think they are evident. The asset markets are showing us that our policies do affect interest rates and asset prices, and to then take the position that that doesn't get through to the real economy at all is untenable. You can say that they're less effective, but it's very hard to argue that they're ineffective. Second, it seems to me that the time to stop purchases is down the road. We haven't achieved a state of play in the labor market that

we would need to do that. Third, in terms of the costs, looking at financial stability, inflation, balance sheet losses, and market functioning—we don't observe them today. But, going back to the fog metaphor that Governor Raskin used and was used in the staff memo, I think we need to be pretty humble about how close we're willing to run toward that cliff. And I'm not going to be the bravest one at the table when those issues arise. But I don't think we're near the edge of the cliff, so I don't think that's an issue for today.

Regarding when it will be appropriate to taper, let me say that, for me, the main reason to taper now is to demonstrate that the Committee is at the controls of this LSAP and will calibrate up or down, or out in time, based on its reaction to incoming data. We have trusted the market with this role so far without giving it a clear basis to react, and it's just not working well enough, in my view. If we're going to continue to live in this middle case, where we get choppy progress but not perfection, we are eventually going to find that we have to pay a big price to get out. Let me say, in that connection, that I am reluctant to allow additional aspects of our tapering or stopping test to accrete over time. In particular, I, too, read the Erceg–Levin paper and a lot of the other papers on labor force participation in the wake of the March employment report, which was all about the participation rate, and that work certainly raises very difficult and troubling questions about the state of the labor market in the United States. But to say that the issue is uncertain and murky doesn't do it justice. It's not clear, according to the biggest experts, whether or not even a very strong recovery would restore the labor force participation rate to what we think was the trend. So I think that it's just not something that can be added comfortably to our reaction function, although it is something we need to know about and have in the back of our minds.

I would take the next reasonable opportunity to taper. If the data are bad in June and it's not plausible to taper, I will support tapering at the next reasonable opportunity. If the data are really terrible, I'm also open to increasing purchases. As a practical matter, let me say that, in my view, it's never going to be a good idea to surprise the market by a surprise tapering or to say that the tools have stopped working. So I hope and expect that our public communications will reinforce that the Committee will adjust purchases in response to incoming data, including the one that, ultimately, I believe, will probably matter the most for tapering, and that is the extent of progress toward our economic objectives. I'll argue for reducing purchases at the June meeting if the intermeeting data show that the economy continues to make moderate progress toward our objectives. And in my assessment, that will mean a restoration of more of the feeling we had at the time of the March meeting, when the market was, I would say, interested but not shocked at the fact that we were talking about tapering. I would want to see some improvement in the data. Certainly, we're going to get an employment report on Friday and another one before the next meeting. I'd want to see a run of data that make us feel more as we felt in March, and then I think I will be arguing for tapering.

I would support the change suggested by Governor Duke, although I, too, was taken by Charlie Evans's comment about inflation. And I'm more than happy to bounce-pass that to the Chairman, as Governor Tarullo did.

I also think, as Governor Stein noted in his remarks, that this can be managed. This is not an unmanageable thing in the context of reasonable economic data. We showed, after the last meeting, that this is something that can be done. This is not going to be done in a way that provokes a massive reaction of shock from the market. If the data are there and we're talking

about this publicly and it makes sense and it's rational to do, we should take the next reasonable and plausible opportunity to taper. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Mr. Chairman. I support alternative B. I don't think we have sufficient information to signal today what we want to do at the June meeting. Thus, I don't think we should make changes in the statement that foreshadow shifts in policy that might or might not happen at the next meeting. In this regard, I don't favor adding Governor Duke's language, not because I think the language is bad, but because I think it could potentially create confusion about what we're trying to signal. The market participants already understand that the pace of purchases could be adjusted up or down as the outlook changes. We've made that pretty clear through our speeches. I don't think that adding this language gets us a bunch more clarity in that respect.

If the data stay as weak as I suspect they will be, then I will not be sufficiently confident about the prospects for improvement in the labor market to support dialing down the rate of asset purchases at the June meeting. But I hope I'm wrong, and I hope that the economy does better than expected and the labor market outlook improves. Then I would think that dialing down the pace of asset purchases in June might be appropriate. The key issue for me in dialing down is whether we can justify it on the basis of confidence in the outlook for the labor market. If we can't justify it, then we would badly damage our credibility. If we can justify it, then I think dialing down makes sense for two reasons. First, it would send a positive signal about our evaluation of the outlook, which would be well received by market participants and by people in the economy broadly. And, second, it could potentially help us desensitize the market to such an adjustment. I'm really worried, as we go forward, that market participants could overreact to

changes in policy, and I think the way you want to respond to that is to take opportunities to change policy so that people understand that small changes in policy don't have huge consequences for what's going to follow, and that what's going to follow is going to be sensitive to the data. But the key issue for me at the end of the day is credibility, and the way I think about it conceptually is that I'm not willing to risk the credibility of the FOMC. And it's not just credibility about the asset purchases, but it's also credibility about all future commitments on the basis of the balance sheet being a couple hundred billion bigger or smaller. So the credibility issue is really going to be the key test for me.

The second thing I want to talk about is something that no one has really talked about yet, which is remarkable, but here goes. We talk about the efficacy and costs of the large-scale asset purchase program, and we act as though the costs and efficacy are independent of us, but there are some costs that we do actually have some control over. One potential cost that I think we have some control over is the cost that we might have less control over short-term rates as our balance sheet grows in size. We can do something about this. There are steps we could take to improve our control of the level of short-term interest rates within a large balance sheet. In this regard, I'm very intrigued by one of the ideas that was put forward in the memo "Tools to Improve Control over Short-Term Interest Rates." The Desk could take cash in unlimited amounts through full-allotment reverse RPs, at a set overnight rate, from a wider range of counterparties. I think this is a very interesting idea, because it could likely establish a solid floor for short-term interest rates, and it could significantly mitigate any concerns about our ability to exert monetary control with a large balance sheet. So I would really encourage the staff to develop this proposal further for discussion at the June meeting. How would such a floor reverse RP system work? How could it be implemented? How quickly could it be

implemented? How soon should it be implemented? What are the potential downsides of such a floor system? And what are the potential unintended consequences? This is an interesting idea to me because this is something that you could potentially implement very soon, well before actually raising short-term rates. You could demonstrate long before you were raising short-term rates that you actually had quite a bit of control over monetary policy regardless of the size of the balance sheet. And I think that reassuring market participants in this regard, that we can control monetary policy regardless of the size of the balance sheet, is worth doing sooner rather than later, even if actual liftoff is very far in the future. So this is an idea that we should develop further.

CHAIRMAN BERNANKE. Okay. Thank you, all, very much. I think there is broad support for alternative B. As I said in the go-round, we have seen improvement since September, and there are some signs of a stronger labor market and a stronger private sector. But of course, it's also true that we remain very far from our objectives, and we have a lot of near-term uncertainty, given both some of the recent data readings and the impending fiscal policy restraint. So I remain very comfortable, personally, with the high level of accommodation, and I don't see any basis for changing that in this meeting.

Communication issues are very important, as we've talked about. I made a couple of points at the beginning that, from the staff work overnight, there does seem to be some endogenous response of expectations to developments, and, I think, even more clearly, that the expectation of purchases is not increasing without bound. It's also important, as many people have noted, that we exit or taper or do whatever we're going to do based on strength, progress—however we want to characterize it—and I'm hopeful that the economy will permit that. But I also agree—and I think everyone agrees—that our concerns about the balance sheet and so on

are increasing with the size of the balance sheet, and we need to continue to think about communication and planning for how we might, at some point, bring this program to a close. I just used the word “tapering.” I would like to maybe ask for a ban on the word “tapering” for the following reason: The word “tapering,” I think, would be interpreted, if used in public, as saying that once you change the amount, you are on a deterministic glide path to zero. In at least some of the discussion today, and going back to comments that President Bullard made a couple of years ago, what we’re trying to get at here is a policy that has more of a random walk character, i.e., it can go either up or down, depending on the incoming news. And so I would encourage terms like “vary” or “adjust” or “dial” or whatever, rather than “taper,” and that’s something we need to continue to work on. I do intend, certainly, in my testimony and other contexts, to use this concept—not the word “taper” but this general concept—and I assume that others will continue to do that as well.

On the language, I think I got a slight majority in favor, but it wasn’t overwhelming. So, just to make sure I didn’t make a mistake, I’d like to take a straw vote of people at the table. And abstaining is a legitimate action. How many would like to include Governor Duke’s language in paragraph B(4)? One, two, three, four, five, six, seven, eight. How many are opposed? One, two, three, four, five, six, seven. Oh, geez. [Laughter] All right.

MR. PLOSSER. Now that you’ve got that clear.

MR. FISHER. Who were the chickens?

CHAIRMAN BERNANKE. Yes. All right.

MR. LOCKHART. Mr. Chairman, there are 19 of us. Eight plus 7 is 15.

CHAIRMAN BERNANKE. Well, we had abstentions.

MR. LOCKHART. I demand a recount. [Laughter]

CHAIRMAN BERNANKE. So, whatever I do, I'm going to alienate half of the Committee. I guess I would like to put the language in, if people are willing to tolerate that. The reason for doing that is not necessarily to signal action in June, but to introduce this notion of varying, in a random walk kind of way, as an up or down, depending on the incoming news. And a number of people suggested that June might be an opportunity to do this if the data are sufficiently strong that we can claim not victory, but that we have made progress since September. So if we are seriously contemplating doing this in June, it's probably better to foreshadow it and take some of the market response to it now. Judging on the change we made last time, it could very well pass completely unrecognized. President Kocherlakota.

MR. KOCHERLAKOTA. Mr. Chairman, I am very concerned about the point that President Evans raised—that there's been a lot of media attention on the softness in inflation and speculation that the Committee might be contemplating responding to that. With that in mind, just to complicate things, instead of “the outlook for the labor market or inflation changes,” may I suggest using the phrase “as the economic outlook changes”?

CHAIRMAN BERNANKE. Governor Duke, how do you feel about that?

MS. DUKE. I don't think I object to that.

CHAIRMAN BERNANKE. You don't object to that. President Evans.

MR. EVANS. Well, all of a sudden, changing it to “economic outlook” is going to take the labor market improvement out, and I don't know how people are going to speculate on that. I can understand taking the inflation out.

CHAIRMAN BERNANKE. Well, the problem that President Kocherlakota is identifying is that our language now is focused on the labor market but does mention “in a

context of price stability,” and so inflation is certainly part of the constraints that we face. So I don’t think we can just take out inflation.

MR. KOCHERLAKOTA. Yes—that, I think, would be problematic.

MS. DUKE. And if I could, when I suggested this, I thought and actually said that there was the potential that there would be an expectation that we could adjust the pace up. That may very well happen, but I don’t think that’s necessarily wrong. It ought to be an up or down. So if that happens—if there’s a revision, things go better, and it comes down and starts to actually move—I don’t think that’s necessarily a bad thing.

MR. KOCHERLAKOTA. That’s a reasonable point.

CHAIRMAN BERNANKE. The sense of the Committee in the go-round was that, although inflation is low, there didn’t seem to be a lot of concern at this point about further disinflation. But of course, if that changes, we probably would want to respond to it.

MR. KOCHERLAKOTA. That’s reasonable.

CHAIRMAN BERNANKE. Any other comments? President Bullard.

MR. BULLARD. I just wanted to echo Governor Duke’s comment. You do want it to be up or down, and if the situation did get worse on the inflation front, then we might contemplate that, even though at this point we think that inflation is going to return closer to target.

CHAIRMAN BERNANKE. All right. Any other comment? President Evans.

MR. EVANS. Could the staff opine on the likelihood of it getting the market’s attention?

CHAIRMAN BERNANKE. Any staff reaction about the likely market response?

MR. CLOUSE. It’s awfully hard to judge. They’ll definitely pay very close attention to it. After hearing the discussion around the table, I would have thought they would have been thinking that you’d be setting up for tapering, but I can see the inflation argument. The reaction

may be an increase in uncertainty around policy expectations, but the direction is really tough to judge.

MR. POTTER. Are there two CPI releases before the next meeting? The meeting is June 19 to 20, so there should be.

MR. EVANS. On the CPI, that got a lot of attention in President Pinalto's comments, and it caused me to look back at the Tealbook forecast. One thing that I'm not sure we're entirely clear on—or at least, the staff could comment on—is the wedge between the PCE and the CPI; I've been taking that to be about 0.3 percentage point. And so, just because the CPI forecast is 1.7 percent in the Tealbook—which is what I think I finally dug out for 2015—that's not closer to 2 percent. It should be judged against 2.3 percent, shouldn't it?

MR. WASCHER. I think that's right. The wedge is unusually large right now between PCE and CPI inflation, but again, we think that is transitory. I believe that a wedge of 0.3 percentage point over the medium term sounds right.

CHAIRMAN BERNANKE. All right. It's on my head. The proposal, then, is alternative B, with the sentence you have here inserted in paragraph 4, after the words “in a context of price stability.”

MS. DANKER. And just to clarify, it's as written.

CHAIRMAN BERNANKE. As written. No change.

MS. DANKER. Okay.

CHAIRMAN BERNANKE. All right. Please call the roll.

MS. DANKER. Okay. With the addition of that sentence, this vote is on alternative B and the associated directive.

Chairman Bernanke	Yes
Vice Chairman Dudley	Yes

President Bullard	Yes
Governor Duke	Yes
President Evans	Yes
President George	No
Governor Powell	Yes
Governor Raskin	Yes
President Rosengren	Yes
Governor Stein	Yes
Governor Tarullo	Yes
Governor Yellen	Yes

CHAIRMAN BERNANKE. Thank you very much. It's an excellent time to break for coffee. Why don't we return at 11:10 a.m.?

[Coffee break]

CHAIRMAN BERNANKE. Okay. Why don't we recommence? Item 4 is about exit strategy principles, and I'll turn to Steve Meyer to introduce the topic.

MR. MEYER.⁵ Thank you, Mr. Chairman. The minutes of the June 2011 FOMC meeting include the exit strategy principles shown on the first page of the handout titled "Material for Briefing on Exit Strategy Principles." Publishing these principles, and thereby clarifying how the Committee intends to normalize the stance and conduct of monetary policy, served two closely related purposes: (1) giving the public confidence that the Federal Reserve will be able to normalize policy smoothly and has a plan for doing so and (2) reducing the risk that the Committee's eventual steps to reduce policy accommodation would come as a big surprise to the public and so cause an outsized market reaction. In light of those two purposes, the 2011 exit principles include both broad strategic elements and specific tactical guidelines.

The seventh principle indicates that you might adjust the exit strategy in light of economic and financial developments. Since June 2011, the economy has been hit by shocks emanating from the euro area and from fiscal policy, among others. Also since June 2011, you decided to reinvest principal received from agency securities into agency MBS rather than into Treasury securities, you conducted the maturity extension program, and you began the flow-based asset purchase program. Consequently, the SOMA portfolio is larger, holds more MBS, and has a longer average maturity than we projected in June 2011. In addition, you adopted threshold-based forward guidance about your intentions for the federal funds rate, a step that was not anticipated when you released the exit principles.

In light of these developments, some of you have suggested that it may be necessary to revise the June 2011 principles. As background for today's discussion,

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

the staff prepared memorandums on exit principles, strategy, and tools. If your dialogue today indicates that you see a need for revisions, the staff will prepare drafts for your consideration.

The first and last of the seven principles seem timeless. Our sense, based on your remarks during recent Committee meetings, is that many of you see a need to revise one or more of the other principles. For example, a number of you have suggested that the Committee might forgo selling MBS, either to avoid the risk of an adverse market reaction or to provide some additional monetary stimulus. Some of you have noted that ceasing to reinvest principal payments from MBS would, by itself, reduce the Committee's MBS holdings substantially. Several of you have suggested reducing the level of reserve balances by selling Treasury securities that will have a relatively short remaining time to maturity rather than by selling MBS. As you've noted, Treasury securities that will mature within a few years likely could be sold without realizing significant losses. A couple of you have suggested retaining some MBS in a "new normal" SOMA portfolio. And even if you still intend to sell MBS and to reduce your MBS holdings to zero, you might nonetheless judge, in light of the increased quantity of MBS held in the SOMA, that it is no longer advisable to sell all of them over a three- to five-year period. If you want to open the door to any of these approaches, you might see a need to modify the exit principles.

In light of the small volume and somewhat idiosyncratic nature of transactions in the federal funds market under current conditions, several of you have expressed concern that raising the remuneration rate on excess reserves might not result in an equal increase in the federal funds rate. Others have worried that the federal funds rate might not remain closely connected to other short-term market rates. If you're not confident that the federal funds rate and other short-term interest rates will move up in line with the interest rate on excess reserves, you might want to eliminate references to the federal funds rate and instead indicate that adjustments to the interest rate paid on excess reserves, along with open market operations, will be used to influence the level of market interest rates in order to promote maximum employment and price stability.

The second and third of the June 2011 principles, in combination with the first part of the fourth principle, lay out a sequence of steps that you indicated you would follow when you decide to begin moving to a less accommodative policy. With threshold-based forward guidance in place, you may no longer think it necessary to change your forward guidance before raising the federal funds rate; you might judge that the public will infer that an increase in the federal funds rate is drawing near as the unemployment rate approaches its threshold. You could, of course, decide to change your forward guidance before acting to raise interest rates, particularly if you eventually were to conclude that economic and financial conditions at the time a threshold is crossed do not warrant a prompt increase in short-term rates, but you may no longer want to promise that you will raise your target for the federal funds rate only after you have ceased reinvesting, changed the forward guidance, and initiated temporary reserve-draining operations. More generally, you might now see it as desirable to modify the exit principles in light of your threshold-based forward

guidance, and perhaps to allow greater flexibility about the details of removing policy accommodation. Or you might still judge that maintaining confidence requires communicating a sequence of specific steps, but not the sequence of steps in the June 2011 exit principles.

Finally, you might think that revisions will be necessary, but not yet. So, with that as background, I'd point you to the discussion questions that were distributed last week. For your convenience, I've reproduced them on the second page of the handout. My colleagues and I would be happy not only to learn your views, but also to answer any questions you may have for us. Thank you.

CHAIRMAN BERNANKE. Are there any questions for Steve or his colleagues? [No response] Okay. Seeing none, let me make a couple of additional remarks.

The motivation for looking at exit principles, is partly, of course, the change in our policy stance—the much bigger balance sheet and the thresholds. But as I was mentioning to President Fisher earlier, I think that there's also been some significant improvement in our exit tools beyond interest in excess reserves and reverse repos and time deposits, which we have been working on for some time. The staff memo points out that we have about \$700 billion in Treasuries that will have a remaining maturity of less than three years by late 2015, and we have another \$500 billion that will have a remaining maturity of between three and five years. So that's, obviously, something we could sell, perhaps as an alternative to MBS. And beyond that, there are still further options. The Vice Chairman talked about the standing of a reverse repo facility, which could help tighten control of interest rates and, by the way, would have the benefit of allowing us to pay a wide variety of recipients rather than just banks, a point that some people have noted before. Finally, as a very “deep bench” kind of backup, reserve requirements—both existing rules and emergency provisions—could allow us to immobilize hundreds of billions more dollars of reserves, if that were necessary. So we do have, I think, better tools, and that's another thing we want to think about.

As we talk about these issues today, we have substance issues, and we have communications issues. Steve has already gone over this. Among the substance issues, linking the exit steps to the threshold guidance, talking about sales of Treasuries and MBS, and, perhaps, commenting on additional tools are the key elements that we would want to try to get some information from you about. There are also longer-run issues, including whether to keep a small amount of MBS in the long run and what our operating procedures will be in the long run. Although, certainly, we're welcome to discuss those issues, it's a future Committee that will make those final determinations, and I don't think we have to come to any conclusions on that. There are also communications issues, and you should please pay attention to those. We could do a formal statement like last time, which we released through the minutes. We could do a formal statement released through some other mechanism. The statement could be of greater or lesser detail. Or we could use other methods. If we agree on some basic principles, we could disseminate them through speeches and testimony, et cetera. So there are a variety of different ways to communicate this information, and some of them have different tactical implications for policy communication as well.

I wanted to put all of those things on the table and invite comment. Depending on what we hear today, we could, of course, bring you something to load on, if you wish, in June, or we could have further discussions. We're waiting for guidance from you on that issue. So let me begin a go-round, and I will start with the Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you. I think it makes sense to revise the exit principles and make that known sooner rather than later, because, clearly, what we have in place today is no longer operative. This can be seen in the primary dealer survey, which shows that a majority of respondents no longer expect agency MBS sales, even though that's what's in our

exit principles. And that view, of course, was reinforced by the discussion in the March FOMC minutes about how not selling agency MBS could mitigate the risk of an upward spike in yields. The exit principles also don't seem sensible to me, given the introduction of the thresholds. How can we commit to the timing sequence of normalization—ending reinvestment, for example—when we don't know when we'll reach the thresholds or, in the case of the unemployment rate threshold, whether we'll want to raise short-term rates as soon as that threshold is reached? It also makes sense to me to revise the exit principles sooner rather than later because people will soon assume that this is in train. If they haven't figured that out already, the minutes to this meeting will make that clear. I would hope we could get it done at the June meeting. That would be ideal because that would be relatively soon, and the Chairman would have the opportunity to discuss it in the press conference. So that's a goal—aspirational.

In terms of what approach, I think the exit principles should be recast in two broad ways. First, they should be less about tactics and more about principles. The focus should be on the outcome we seek—smooth exit; minimizing disruption of market function and risks to financial stability—rather than on the precise ordering in the way each tool will be used. We should maintain some flexibility on how we can best use our tools to achieve our objectives. In June 2011, when we put forward this first set of exit principles, it was a different environment. Our balance sheet was smaller. Exit was anticipated to be relatively near at hand compared with today, and we had a different objective. We were trying to reassure people that we weren't going to dump a lot of assets into the market, and that's really what the exit principles at that time were trying to address.

In terms of the exit principles, I think we should emphasize how we plan to exit in a way that not only maintains effective monetary control, but also minimizes market-functioning and

financial stability risks. I would put the focus on that rather than on how the balance sheet will evolve over the longer term. I think that these issues are separable as long as we have the tools in place to conduct monetary policy effectively, even with an enlarged balance sheet, which I think we do. And I want to separate these two issues because I don't want commitments about the longer-term balance sheet to constrain our ability to exit in a way consistent with our near-term objectives. I don't want to have these artificial constraints that we've created for ourselves. Also, I'm not sure what the longer-term balance sheet should look like, and so I don't understand what I gain today by constraining myself to a particular balance sheet or structure in the future. The only potential benefit of doing so, of putting these balance sheet constraints in place, would be if that made exit easier, but I don't see the connection between the longer-term balance sheet and exit. We're going to learn a lot about our monetary policy regime as we normalize interest rates. So, to me, it makes sense to learn from doing before determining what the longer-term balance sheet should look like.

In terms of sales of MBS or short-term Treasuries, I would favor announcing that we have no plans to sell agency MBS in the foreseeable future, at least until interest rates are fully normalized. That gives you the option of selling them later, at some future date, if you want. Retaining agency MBS, as our discussion around the table has shown, has four clear benefits: It eliminates the risk that such sales might pose to market functioning, it reduces the risk to financial stability from a sharp rise in long-term rates, it adds a bit of additional accommodation by keeping the agency MBS on our balance sheet for longer, and it eliminates the risk of capital losses from sales that could depress our Treasury remittances. So I think this straightforward.

In terms of short-dated Treasury sales, I wouldn't pre-commit to this or rule it out. I think we can defer this decision. I don't think it's something that market participants are worried

about or focusing on now. Most important, we don't know when we're going to want to start raising short-term rates. We don't know, therefore, how much short-dated Treasuries we'll hold at that point in time. We don't know how well the other tools will work in controlling short-term rates—in other words, how important it actually will be to drain reserves through asset sales. We also don't know what interest rates will be doing then and what the impact of those interest rates will be on the path of our remittances. So, from my perspective at least, it seems too soon to commit to such sales when it's unclear whether we'll actually want to undertake such sales in the particular circumstances in which we find ourselves a few years out in the future.

To sum up, I favor a much scaled-back version of the exit principles. These would focus on our goals of using our tools in a way to foster our dual mandate objectives and that would give some attention to minimizing market-functioning and financial stability risks. And, finally, I'd note that we anticipate that the short-term interest rates, such as the federal funds rate, are anticipated to be the primary tool of monetary policy. But the point here is, I want to de-emphasize the primacy of the federal funds rate because we might want to shift to a different short-term rate instrument—say, the floor RRP rate that I was talking about a little bit earlier, if that turns out to be a very effective tool to control short-term rates. Another advantage of the floor RRP is, if that works, it solves some of the potential governance issues because that would clearly be in the province of the FOMC, unlike the interest on excess reserves. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard—a two-handed intervention.

MR. BULLARD. Could I ask the Vice Chairman to clarify your view on thresholds and how that intersects with this? I didn't quite get what you said.

VICE CHAIRMAN DUDLEY. Well, the issue on thresholds is, we have a threshold that states this unemployment rate and expected forward inflation. We don't know when we're going to hit that threshold, and then we don't know if we're actually going to act once we hit that threshold or someplace in the future. So, talking about how you're going to stop reinvestment early—I don't know how to link that up with the timing of when I'm actually going to do liftoff. I feel as though thresholds create a lot of confusion. When should we stop reinvesting when we don't know when short-term interest rates are actually going to increase? I don't understand how the sequencing works. I think the thresholds make the timing issue a little bit confusing to me. And maybe other people aren't concerned about that.

MR. BULLARD. I took the thresholds to apply to the interest rate side of our policy, and so it was a commitment on coming off the zero bound, but not on other actions that we might take.

VICE CHAIRMAN DUDLEY. Well, the original exit principles, I think, envisioned a very fixed period of time between when we were going to end the reinvestment and—X months later—when we were going to start to raise short-term interest rates. Maybe it wasn't completely fixed, but it was pretty well understood that it was 6 to 12 months afterward. Now, it's very difficult to make that linkage; today, if I'm deciding to end the reinvestment, how do I know how that links up to when I'm actually going to raise short-term rates, given the thresholds?

MR. BULLARD. Wouldn't that just be a policy decision that the Committee is making? You're getting close to these, or maybe you're a bit beyond, and then you make a policy decision.

VICE CHAIRMAN DUDLEY. I don't know. Other people may not be as concerned about this as I am. I just think it creates a lack of crispness to the current set of exit principles.

MR. EVANS. I prefer the word “complicated” over “confused.”

VICE CHAIRMAN DUDLEY. Yes—“complicated.” It’s confusing to me. It may not be confusing to others, but it’s confusing to me.

MR. BULLARD. Okay. Thank you.

CHAIRMAN BERNANKE. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. First, let me apologize for jumping the line twice. I didn’t realize I was going to get to go first in the last round.

MR. FISHER. But you exerted a great leadership role last time.

MS. DUKE. But I did want to go early in this one, and I think it’s actually helpful to follow Vice Chairman Dudley. I’m now back in the very comfortable position of agreeing with him completely and have some thoughts that dovetail with the suggestions that he’s making. I’ve made it pretty clear what my preferences are for our balance sheet size, but, in thinking strategically, I think it requires that you make plans for the case in which things just don’t go the way you hope that they’ll go. So I want to skip the questions that we were asked to address, and discuss a broader view of exit that, I believe, would accommodate a much larger balance sheet than we currently expect. I want to begin by recognizing that our exit principles are out of date—and I agree that we should acknowledge this formally—but I’d be very wary of including any specificity in whatever principles we choose to replace them.

I remember from the earlier round that markets were quick to assume that we were preparing to exit simply because we were discussing exit. So I wonder if it might not be possible to position our review of exit principles as a way to mitigate concerns about the cost of a larger balance sheet and a discussion of ways to increase accommodation rather than remove it. In declaring the current statement to be out of date, it might be helpful to acknowledge that the

appropriate use and sequencing of exit tools will be dependent on the size and composition of our balance sheet, as well as market conditions at the time. New principles might simply state that we'll pursue our objectives with a sensitivity to market conditions. But, ideally, the principles would also set up an expectation for a continuous review that identifies options but doesn't settle on any strategy or sequence until we're actually considering an exit. If we can position ourselves in such a way, then I think it would be appropriate to use the roughly two years that it looks as though we're going to have before we return to using a fed funds target to think about alternative frameworks for managing monetary conditions that don't depend so heavily on shrinking the balance sheet or draining reserves, because, as the total amount of reserves continues to grow, we could reach the point where it would be more effective to transition directly to a new framework, rather than draining reserves to regain control of the fed funds rate, shrinking the balance sheet, and then turning to a new framework.

I believe that the idea of managing short-term rates through the federal funds rate by adjusting the supply and demand for reserves is an outdated notion in the context of our current balance sheet. The fed funds market today is no longer an active interbank market. It's primarily composed of GSEs, which can't earn interest on reserves, selling to a handful of approved large banks. The spread required to incent these banks to arbitrage the IOER must be at least wide enough to cover their FDIC insurance costs. And once we offer the GSEs the opportunity to transact with us directly, they may reduce or abandon their participation in the fed funds market, leaving it smaller and even more idiosyncratic.

Banks traditionally use the federal funds market as a tool to manage liquidity. It seems to me that it'll take a very long time and a very low level of excess reserves before banks have the incentive to return to the fed funds market as either borrowers or lenders. As deposit growth has

far exceeded opportunities to invest additional deposits, banks have steadily reduced their nondeposit liabilities, including fed funds borrowed. And since we began paying interest on a large quantity of reserves, parking short-term reserves with us has become preferable to lending in the fed funds market. Banks will return to lending to each other only if the opportunity to lend to us is significantly reduced. The tradeoff here is that, as excess reserves become minimal, the IOER becomes somewhat less relevant for borrowing and investing decisions.

The level of reserves is no longer being driven by any notion of the supply and demand necessary to achieve a short-term rate goal. The level of reserves is being driven entirely by our need to fund asset purchases. When we testified at the Congress about our need for the authority to pay interest on reserves, we made three points: that we no longer viewed the fractional reserve system as an important tool of monetary policy; that being forced to hold uncompensated reserves represented a tax on the banking system; and that banks had developed methods, such as sweep systems, to avoid the tax by minimizing their reserves. Even though reserves aren't particularly useful to us in controlling the money supply, they're costly to administer both for us and for the banks, and they unnecessarily complicate bank deposit product offerings.

Even if we don't believe in the fractional reserve system anymore, raising reserve requirements is one way to bring supply and demand for reserves back into balance. We even have emergency authority to raise reserve requirements to very high levels. But I think it's unrealistic to assume that the banks will be any less creative at avoiding even higher reserve requirements than they were at lower levels, and raising reserve requirements has historically signaled a sharp tightening of policy. Moreover, if we do consider modifying reserve requirements as a demand management tool, we should be mindful of the interaction with other regulatory requirements. For example, I would expect required reserves to be subtracted from

liquid assets in calculating available liquidity. So, increasing reserve requirements to create demand for reserves would also reduce bank liquidity and, potentially, their willingness to lend. Overnight borrowing to meet those reserve requirements would again subtract from liquidity, thereby creating a double debt. If we're going to keep a large amount of reserves taking up space on bank balance sheets, they should at least be able to serve as an addition, rather than a subtraction, from liquidity. And we might want to exclude them from any regulatory leverage requirement so that they don't crowd out lending to private borrowers.

If we can't increase the demand for reserves, that leaves us with reducing supply to very low levels as our key tool, which means draining reserves. And draining reserves means shrinking our balance sheet or finding alternative instruments to fund it. I can't see much differentiation between excess reserves and term deposits as incentivizing banks to reengage in the fed funds market. So I'm not confident that that tool effectively restarts the fed funds market or helps regain control of the fed funds rate, which leaves reverse repos as our primary draining tool and funding source. Whether we use reverse repos or term deposits, it seems to me that the amount of draining we can do and the speed with which we can do it are heavily dependent on the level of short-term interest rates that we're willing to accept. Any draining operation would likely have a strong effect on short-term rates even before it brought the level of reserves down to the level necessary to affect the fed funds rate. Memos refer to \$1.9 trillion in reserves, using the staff baseline forecast. That \$1.9 trillion becomes \$2½ trillion under current market expectations, and, as they say, "A trillion here, a trillion there, and pretty soon you're talking real money." Before you tell me, I did look up to find out who said that, and it turns out that Dirksen never actually said it, but he thought it was such a good quote that he let people think that he did.

As reserves grow, we need to keep an eye on the size of reserves in comparison with volumes in other short-term money markets. I think it's possible, even likely, that we ultimately might conclude that even with a very large balance sheet, we can manage a broad spectrum of short-term interest rates quite well using repos and reverse repos, along with the IOER. If that's the case, our credibility would be well served by transitioning to discussing policy in those terms, rather than discussing it in terms of a rate over which we have less control. Once we separate balance sheet size and our control over short-term interest rates, we can then manage our balance sheet with an eye toward market functioning and minimizing losses. In the end, it might be smoother to transition directly to such a regime rather than draining reserves and reducing the balance sheet first. At some point, we might even want to consider funding additional balance sheet growth through reverse repos as an alternative to adding reserves. I guess that would be sort of a left-handed MEP.

I know that all of this would be a communications challenge, and I understand that the relative prominence of the IOER raises governance questions. But a bumpy exit would be an even greater communications challenge and a threat to confidence in our ability to control the exit. I don't think there's any question about the need to rely on the IOER as a key policy instrument. So, solving the governance question seems a worthwhile endeavor in any case. And importantly, none of these obstacles seem so great that they justify not thinking creatively about the best framework for monetary policy in the future. I'm not suggesting that we have to solve this issue before we revise our exit strategy principles, but if we do have as much as two years before we need to begin, it seems reasonable to me that we could find some time in there to think about this, and that we could leave a place for it in our revised exit principles. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. In some respects, I guess I'll continue the themes that Bill and Betsy introduced, but I'm dialing up the skepticism a bit on the utility of this enterprise. Back in 2011, I recall having some concerns about an extended discussion of exit principles for just the reason that Betsy alluded to a moment ago, which was we were communicating that we were actually thinking about exiting—something that turns out to have been premature at best. In retrospect, there was another problem that we created for ourselves precisely by putting these things out, which is, now they seem outmoded and thus, I think, call into question the wisdom of trying to reformulate exit principles at anything but the high level that Bill was alluding to earlier. The question I'd ask, then, is: What are we going to get out of this enterprise?

Now, it seems to me that there's one thing that we really do—or at least I really do—want to accomplish, and Bill mentioned this as well, which is making clear that the previously stated intention to sell MBS is no longer operative. And I do think it's not only useful, but also important, to get that idea out. Ironically, what that reflects is the need to reverse a principle that we stated a couple of years ago, which reinforces the caution about stating too many things in advance. I wonder whether there's much usefulness to be gotten out of this beyond a restatement of things in a way that's close to a set of platitudes. There's nothing wrong with platitudes, but saying, “Well, we're going to do things so as to avoid financial instability”—I'm not sure it contributes an enormous amount, except maybe just restating to ourselves what we think we're going to do. But I don't know that it provides much reassurance to people in the world that we're going to be able to exit smoothly.

I don't think that we really need anything else right now. Even the issue of how the thresholds change things could probably be left for later, although my instinct is to agree with Bill that it does require some further statement. It might be desirable to have a more contemporary statement of operative principles, but I'm, frankly, not even sure of that, because it may just invite the world to compare the last statement with the new one and, as seems often to be the case in such instances, not only to draw attention to the fact that we've changed our minds, but also to elicit a bunch of people reading into some of the changes way more than what we may have intended.

If we are going to do it, though, I think there are two things to avoid. The first—it must be obvious by now—is having very much detail in the exit strategy that will later encounter the same kinds of problems that we're now seeing with the 2011 exit principles. And the second is getting into a prolonged discussion in an effort to develop statements around longer-term issues, such as whether we should continue to hold MBS until after policy normalization or whether we're going to move from primary reliance on the federal funds rate to some other mechanism. As Betsy said, there are a lot of things to be talked about over the next couple of years, but I don't think we need to even begin to engage in that discussion in order to achieve what needs to be achieved now.

So if we are going to restate principles, I think something like what Narayana has suggested is the sensible approach. If there's enough sentiment for going down that route, I certainly wouldn't be opposed to it. But if we start getting bogged down in issues of principle, such as what the balance sheet is going to look like after normalization, or if we start getting tempted to put in too much detail, then my suggestion would be that we just step back, identify

quite parsimoniously—the word of the day—what it is that we need to say, and then have the Chairman say that in a speech or in congressional testimony. Thank you.

CHAIRMAN BERNANKE. Thank you. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. Before I address the questions generally, I'll make just a couple of preliminary comments. I think we should be careful in any communication to decouple discussion of ultimate exit from adjustment of the current LSAP program. There is already some blurring out there, conflating the exit from the low interest rate and large balance sheet environment with phasing out or adjusting the LSAP. A member of my staff noted two webinars in the next few days on exit from the LSAP policy. So there's some chance for confusion. And for that reason—this is a minor point—to discourage anticipation that real exit is imminent, we may want to employ a version of the formal wording that was in the minutes back in 2011, which was “normalizing the stance and conduct of monetary policy,” if the Committee decides to produce something or publicize something on what we're calling exit.

On the questions themselves and the general topic, I find myself in agreement with Vice Chairman Dudley and others. I would suggest that, if we go forward, a clear distinction be made between guiding principles and thinking about tactical implementation. The projections of many of us show the start date two and a half years away. Much could change between now and then. Decisions on many of the specifics of tactical implementation are even further out in the future and will involve a learning curve.

I don't think the six principles—and here I am referring to the paraphrased principles on pages 2 and 3 of the staff memo—which were articulated in, perhaps, somewhat other words in 2011 require much updating. They remain valid today. The only one that really is in play, it seems to me, is the principle related to whether we will return to a Treasury-only SOMA

portfolio. For my own part, I'm not as concerned as some may be about the prospect of having some agency debt or MBS in the SOMA portfolio for a long period of time. However, I do think it should be stressed, as a matter of guiding principle, that the Treasury portfolio is intended to be more diversified or balanced in terms of maturity structure than it is now. If that concern is addressed, the Committee might consider something that says, "The Committee anticipates return over time to a SOMA portfolio that consists primarily of a balanced maturity structure of Treasury securities."

As regards the tactical steps that were articulated in the principles in 2011, as I said earlier, I'm reluctant to get in the weeds again at this juncture. I don't see a need to pre-commit to a specific plan. It might be better to just reference the earlier tactical points and say, "They remain broadly applicable and will be revised as the 6½ percent unemployment rate threshold gets closer and the time for action approaches. This discussion might acknowledge that the working down of the MBS portfolio will take longer than we thought in 2011.

I had some other comments here about some of the specific questions, but I find that the three preceding commenters really covered many of my points. So let me just summarize. I think the six principles paraphrased by the staff from 2011 are sound. The tactics will likely have to be revised, but I would suggest later, and I don't think it's useful to get too specific this far ahead. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. I thought the Vice Chairman laid out the relevant issues very well, and Governor Duke raised some key issues for us to be thinking about over the next couple of years. So I'll try to be brief in what I have to say.

First, I think the work done by the staff here in D.C. and by the staff around the System has emphasized repeatedly that the policy rule that governs exit has a big effect on current outcomes. This means that credible communication about our exit strategy is an important policy tool for the Committee. Second—and relatedly, in my view—we need to begin to have a serious conversation about the likely goals of policy during exit. The goals of policy during exit will shape the amount of stimulus that we will be providing over the next year or two. Specifically, after deciding this, if we communicate that we plan to keep inflation at 2 percent or under during the exit process—that is, we view our target as a ceiling during that time—then we will be withdrawing accommodation rapidly. That pushes down on current stimulus. If we are willing to allow the medium-term inflation outlook to rise as high as 2½ percent, then exit will be slow. In particular, given how flat the Phillips curve is—as Governor Yellen mentioned—exit will be very slow, and people will be more willing to spend now as a result. Finally, our current exit principles constrain us from using many forms of communication about exit. This means that our current exit principles are restricting us from providing as much accommodation as the economy needs.

Let me turn to the questions. I'll really only answer question 1. I think the answer to question 1 is, "Yes, we need to change the principles as soon as possible," because our ability to communicate effectively about exit is one of our key policy tools, and we're not really able to use it effectively at this stage because of the existing principles. For example, if we wanted to communicate that we currently plan to hold all assets until maturity, we can't do that under the current principles. So they have to be changed.

It's a good idea to put the principles out in the minutes, as we had before. As President Lockhart suggested, I would title them something like "Long-Run Normalization of Monetary

Policy,” something along those lines, to try to emphasize that it’s very long run—or whatever terms you want to use. I think that we just want to be very high level in terms of what we want to communicate. We want to figure out what’s appropriate along those lines, and I think the previous principles ended up being overly specific. On Monday, I circulated a memo from the Minneapolis staff that I thought took a very nice approach to describing the relevant principles. I’m certainly not wedded to any specific language, and I don’t want to get into a speech about words, et cetera. But I do believe that the draft that my staff prepared really had the appropriate level of detail.

To sum up, I think this is an important thing to be doing, and in short order, Mr. Chairman. Communication about exit is really an important policy tool for us. It’s going to be especially important for us to be able to communicate credibly about our goals during the normalization process, and the current specificity of our exit strategy principles disrupts that communication. And we need to get around to revising those principles as soon as possible. If it can be done in June, that would be great—to correct this problem.

CHAIRMAN BERNANKE. I have a question for some of the speakers already, which is, if we have a very high-level document of principles that we’re trying to achieve, does this particular issue of not selling MBS fit into that? And if so, how? Or is that communicated in some separate way? Maybe President Kocherlakota will answer the question.

MR. KOCHERLAKOTA. I’ll answer the question for myself, obviously. I think that’s a policy move that should be undertaken by the Committee and put into the statement. If that was something that the Committee wanted to communicate—that it was currently anticipating not selling MBS—that could be put into the statement; I wouldn’t put it in the principles. The

principles should be high level enough to incorporate that kind of decisionmaking, though, by the Committee.

CHAIRMAN BERNANKE. That's helpful. Okay. President Williams.

MR. WILLIAMS. Thank you, Mr. Chairman. I'd like to thank the staff for the very helpful memos on this very important topic, and I'll just mention that I get asked this question about our exit every time I speak publicly. I think we've actually done a pretty good job, with our exit principles from 2011, of laying out the high-level principles. In my view, we probably got into too many details. I'll talk about that some more. But this is an incredibly important thing we've done in terms of communicating to the public that we do have a plan, we've thought hard about the plan, and we have confidence in that plan. I agree with the Vice Chairman that we need to update it and reinforce that message that we've thought hard about this, we've come up with tools, and we can control the stance of monetary policy going forward. I think we're kicking ourselves here a little bit too much about how the exit strategy wasn't perfect and now we have to change it. I actually believe that it's been very valuable, and I know there are a lot of political questions out there, too. Does the Fed have an exit strategy? Again, it's an important thing we've done, and we do need to update it.

The memos made an important distinction—which numerous people have already mentioned—and that's between broad principles and specific tactics. As I mentioned back in March, and as many people have already mentioned, the general principles from our June statement generally remain appropriate today. But our balance sheet is now much larger than it was back then, more tilted toward longer-duration Treasuries and MBS. So, in light of these changes, we need to adjust our tactical guidelines to give us more flexibility to soundly implement those broad principles. I continue to support the general principles of eventually

moving back to a Treasuries-only SOMA portfolio and of significantly reducing bank reserves to a level consistent with conducting monetary policy. However, the specific tactical details about the pace of balance sheet renormalization provided in our June 2011 statement clearly are no longer appropriate. Decisions about the rate of balance sheet normalization, including the pace of any asset sales that we may choose to conduct, will depend on economic conditions and can wait until we're closer to the time of funds rate liftoff.

Therefore, to maximize our flexibility in implementing our exit, I'd make three changes to the proposed exit strategy principles and tactics that are in the staff memo. First, I would increase the flexibility in principle 4, the one about returning to a Treasuries-only portfolio over time, by leaving out the rationale at the end of the sentence about the allocation of credit across. This sentence leaves a false impression that we're eager to rid ourselves of these assets as soon as practicable. Second, I agree with the staff memo's suggestion to combine the first two tactical guidelines into one. That would lump together the tactics of ending reinvestment, modifying our forward guidance, and deploying reserve-draining tools into a single initial-steps guideline. The advantage of this approach is that we'd have the flexibility to pursue any combination of these tactics when the time comes. Again, I think we explain the principles, or the tools we have, what we're trying to accomplish, but we don't get into the specifics of how we're going to do that. Third, I would add some qualifications and flexibility to the last tactic, the one about sales of agency securities, so that it says, "Part of normalizing the SOMA could include sales of agency and Treasury securities"—so, "could include sales of agency and Treasury securities." "Such sales, if they occur, would be at a gradual and steady pace." I would also delete the explicit three- to five-year and two- to three-year time horizons for MBS sales and balance sheet

renormalization in that paragraph. Given that our current exit strategy plan is already stale, we should not delay putting out a revised statement for too long.

Finally, it would be a mistake to permanently keep MBS securities in the SOMA portfolio just to maintain expertise at the Desk. Our MBS purchases have proven a powerful tool during this episode, but we must be judicious in deploying it in the future. In thinking about this, I'm reminded of a scene from one of the all-time great movies. I'm speaking, of course, of *The Lord of the Rings: The Fellowship of the Ring*. The hobbit Bilbo is about to journey from the shire and leave behind the ring of power. Yet when it comes time for Bilbo to go, he keeps unconsciously flipping the ring back into his pocket. It keeps tempting him. Like the hobbits in *The Lord of the Rings*, we must overcome the temptation of the ring of power. So when the time comes, we should let it go. [Laughter]

CHAIRMAN BERNANKE. President Rosengren.

MR. ROSENGREN. It's hard to follow that up. Actually, there's been a surprising amount of consensus through the first set of speakers, and I'm pretty much in the same place. Because the minutes will reflect the key elements of our discussion of the exit strategy, I hope that the minutes will highlight that we have reassessed our previous strategy, and that they're no longer operative because circumstances in the economy and our balance sheet have changed. And then that can be further explained by the Chairman in either speeches or testimony. Once a consensus can be reached, we can provide an explanation of our new strategy, which, I hope, will be much less detailed, a theme that almost every speaker has highlighted. I would expect this to occur over the next several meetings. It's aspirational, maybe, for June, but that's a very high aspiration.

We need to significantly revise our exit strategies, and, as part of that, I would encourage a broader discussion of the appropriate steady-state composition of our balance sheet at some point. We have decided that, at the zero bound, holding only Treasury bills did not meet our macroeconomic objective. We need to have a general discussion of whether there are circumstances under which this may be true when we are no longer at the zero bound. At one extreme, we could adopt a T-bills-only strategy. This strategy minimizes interest rate risk but, in effect, causes the public to hold a portfolio more weighted toward long-term debt, possibly resulting in larger term premiums. At the other extreme, we might hold T-bills, Treasury bonds, and MBS in the same proportion as the securities that are outstanding. In this way, our holdings reflect what is available to the public at large, and we would not seek to distort the relative supplies that would otherwise be available to the public. This passive holdings policy would recognize that we are generally holding investments to maturity and incurring little interest rate risk, and that we do not want to distort holdings by the public through our holding securities in different proportions than the portfolio of securities outstanding.

There could be several reasons why we'd consider something in between these two options. One is based on operational risk management, which would argue for at least some activity in MBS, Treasury bonds, and Treasury bills. Should we want to buy or sell in these areas in the future, the infrastructure would still be up and running. A second would be that one tool may not be the optimal tool for all occasions, as the zero lower bound has highlighted. Thus, we may want to have a diversified set of policy tools, rather than limiting ourselves to only movements in overnight rates, which would require more holdings of each asset class. A third reason to hold long-term Treasury securities and MBS is that we may want to have an option of using the SOMA portfolio for macroprudential monetary policy as well as macroprudential

supervisory policy. We might choose this option if we view macroprudential supervisory tools, such as capital ratios, to be much like fiscal policy: time-consuming to implement and difficult to set without political interference. Thus, we might want to preserve the option to buy or sell securities for macroprudential purposes. For example, we might want to signal an undesirable overheating in the residential real estate market by selling MBS securities outright or by swapping MBS for Treasury securities. The size of our holdings of MBS might be determined by whether we wish to emphasize the signaling role of such an intervention, which might imply smaller holdings, or the ability to significantly alter mortgage rates, which would require significant holdings.

It may be useful to begin our discussion of how to get to our steady-state portfolio by coming to agreement on what the steady-state portfolio should be. I would like to keep open the option to not eliminate any permitted asset class from our holdings. My own preference would be that we hold all MBS to maturity. Staff simulations show that this does not have a large impact on how long it takes to normalize our balance sheet, and it has the benefit of reducing the likelihood that we stop remitting funds to the Treasury. To the extent that we want to reduce the size of our balance sheet, I would focus on selling shorter-term Treasury securities, and, for now, we should retain flexibility on how that can be accomplished. If the economy improves quite slowly, we may want to only slowly reduce the size of our balance sheet. On the other hand, if the economy begins to grow very strongly, we may prefer a more rapid decline in our balance sheet. As a general rule, I think it's critical that we maintain flexibility and an array of balance sheet options. Specific sales timetables should be contingent on economic outcomes rather than preset as an inflexible exit principle. Thank you.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. Like Presidents Lockhart and Williams, I think the current exit strategy principles have served us well in public discussion, assuring people that we've thought about the way out and have some confidence in our ability to execute on it.

Personally, I'd prefer the current principles, or something very close to it, to any alternatives that have us holding MBS longer or selling them less rapidly. These options, to me, represent a break from the premise that our foray into the MBS market is a temporary, emergency measure. We refer to what we're going to do with the balance sheet during our exit as normalization, which implies that where we've been, where we are, is abnormal. I'd see this as a move away from treating the current holdings of MBS as abnormal and unusual and something we should get away from. It would be a mistake to take a step in the direction of institutionalizing our operation in the MBS market. If we went down that road, though, we would owe the public an explanation reconciling an indefinite presence in the MBS market with the March 23, 2009, joint statement of the Treasury and the Fed, which declared that government decisions to influence the allocation of credit are the province of fiscal authorities. I also think that if we drop the reference to credit allocation that President Williams cited that's in our current exit principles, we'd owe people an explanation about that as well.

I took the rationale you proposed at the end of our last exchange, Mr. Chairman, as saying that tilting interest rate spreads toward MBS has no adverse consequences in the presence of underutilized or unutilized resources in society. But, clearly, other nonmortgage interest rate spreads are going to be higher than they otherwise would be if we're lowering MBS spreads, or will fall by less than they would have if we had bought all Treasuries. So other borrowers are going to expand their borrowing by less. Maybe there's some other model you have in mind or

some other approach that yields a different conclusion. I'm willing to discuss it. But even if you do, the joint statement is still a problem because there's no caveat or escape clause in there about underutilized or unutilized resources. We still owe people an explanation, in my view.

Let me just comment on the idea that we continue to hold MBS in order to maintain the analytical expertise to understand those markets, which is hard to take seriously. The logic seems to be that we need to operate continually in MBS markets in order to understand MBS markets so that we are capable of deciding whether we need to operate in the MBS market. This logic would seem to apply to every market in the universe, I'd point out. And the idea that you need to operate in a market to understand or to intervene in it conflicts with the premise underlying our intervention, which is based on these models where it's common knowledge to everyone in the model that the price of the security without our intervention is below some fundamental value. Allen and Gale, chapter 9, for example, is a version of that that I've heard cited.

It's also hard to take seriously the idea that we should revise exit principles because dealers we survey don't think we're going to follow them. If we think we want to follow them, let's declare it to people and let them know, and correct their misapprehensions. We could easily reaffirm the principles and guide their expectations toward something sensible.

The broader picture here is that where we're going to head with the balance sheet in the long run is a highly consequential issue for us. Are we going to get back to Treasuries only or not? This all started as an emergency expedient. It's become something that we've become numb to, inured to, and accustomed to and are treating as normal. Yet our articulation about this is that it's abnormal and we're getting back to normal sometime soon. I think that we need to reconcile some competing understandings of our MBS holdings. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Thank you, Mr. Chairman. First, I do want to thank the staff for their memos, and I was particularly intrigued by the memo on the pace of asset purchases. That was very well reasoned. I have two little quibbles with it, if I can mention them before I go into answering the four questions. I sense that the memo downplayed the idea that promises of future accommodation can substitute for asset purchases, and I'll quote a sentence: "Such promises may not be very effective substitutes for the monetary stimulus resulting from asset purchases, which are tangible and arguably more credible." I would have rewritten that sentence to say, "Such promises will be effective only insofar as they are made credible." And I would like us to spend some time thinking about mechanisms for enhancing the credibility of forward guidance, perhaps along the lines of what President Kocherlakota was getting at, if, indeed, we feel that we've reached some kind of limit as to potential asset purchases and the infringement on our balance sheet. The second minor criticism—and I stress "minor" because I thought that that was an exceptionally good memo—was, I was looking for a crisper decision-tree aspect of it. The reasons section was a little bit less crisp than decision trees I'm used to, and I made the mistake that evening of watching the movie *The Princess Bride*, in which Vizzini the Sicilian matches wits with Westley. After watching that, I was going back to the memo, and I sensed it had the same kind of tone. This is very difficult stuff. By the way, for those who don't know what I'm talking about, being a movie fan, go on Google, scroll down to "Memorable Movie Death #3," greatest all-time scenes, and it's Vizzini versus Westley from *The Princess Bride*.

Now, to the serious stuff—the four questions. Like President Williams, I get asked at every single speech, do you have exit principles? What's your exit plan? And I sort of bop around the question. I point out that there are several tools that are available, and that I think the

important thing is that we are playing a very sophisticated game of chess, and that we have thought through our next moves. I do think it's very important that we do think through our next moves. Actions, once taken, cannot easily be reversed, especially these nonstandard monetary policy actions that we've taken. And I don't think we can properly weigh their costs if we don't keep in mind how our actions may eventually complicate exit or might steer us toward a monetary policy that is far down on our list of preferences. So I welcome this discussion. I think we should share our thinking. We should air our differences now in the hope that we can reach some consensus on a long-term framework and exit principles, vague or specific, that will help guide our more immediate decisions, particularly in light of the reality of—as you point out, Mr. Chairman—our balance sheet and our expanded toolbox. We may be able to reach consensus on this subject or not, but it's an important thing to discuss.

I want to take the last three questions together—questions 2, 3, and 4. The Federal Reserve Act, as I understand it, gives the Federal Open Market Committee authority only over the size and composition of the System Open Market Account. And in the past, the Committee has used this authority to manipulate the funds rate. Under a floor system, however, the link between the balance sheet and the funds rate is broken. The IOER determines the funds rate, and marginal changes in the quantity of reserves have, perhaps, minimal effects on short-term interest rates. I'd like to see us commit to returning to a framework in which the adjustments to the quantity of reserves are used to keep the funds rate near a target that's strictly above the IOER rate and strictly below the discount rate. The only difference between then and now is that before 2008, the IOER was zero, and since 2008, it's been positive. I realize that the transition to this framework will take some time, given the size of our balance sheet. Incidentally, I count the

extra time needed to return to this framework as one of the costs of further balance sheet expansion.

Like President Lacker, I would like to see us commit to returning to an all-Treasury balance sheet. I feel the same as he does about MBS purchases; they put us in the credit allocation business. I would argue—and I argued for this at the beginning—that initially, they had an enormous amount of efficacy. That’s why I voted for them. But we need to keep in mind that, if we keep going down this path, it is dangerous. Now, they’re a bit of a devil’s bargain. They’re of long duration, they trade in an illiquid market, and MBS purchases are particularly difficult to undo. They have another downside, and that is that they require different expertise to buy and manage. And again, with all due respect to our operators, they call for a different infrastructure, meaning more staff and some bureaucratic inertia—we talked about this before, Simon. So I would be careful here in terms of coming to accept this as a commonly used tool. I realize that eliminating mortgage-backed securities from our portfolio will take time, given the size of our holdings, but again, I count that extra time needed to eliminate MBS from our portfolio as one of the costs of the MBS purchases.

Making two broad, long-term commitments, to me, is the most important step we can take to clarify our exit strategy and guide near-term policy. I noted carefully Governor Tarullo’s and his predecessors’ comments, and those of others that followed, about specificity. If greater specificity is desired—that is, if it is desired—then I would note that these commitments suggest the following sequence of balance sheet actions, which I’ve mentioned before. That is, as we move toward liftoff and toward normalization of the balance sheet, first, I would stop adding to our MBS holdings. Second, I would put the proceedings from maturing MBS into Treasuries, allowing MBS holdings to shrink. Third, I would also stop adding to net Treasury holdings.

Fourth, I would allow Treasuries to run off as they mature. And, fifth—and this, again, is a sequence over time, at least having it in our own mind—I would sell the securities from the SOMA portfolio, starting with those securities that are closest to maturity. As I said earlier, this is the same sequence of actions that I suggested at our previous meeting. The earlier we begin these steps relative to when we begin raising short-term interest rates, the smaller are both likely capital losses and interest costs. Rate increases could begin coincident with the fourth step, which is allowing Treasuries to run off as they mature or anytime thereafter. I see no compelling reason to be more specific than that on their timing. And I would not rule out combining steps to accelerate normalization. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. First, I'd like to start with a proposal: With all of the cultural references that have been made today—movies, *The Lord of the Rings*, “Memorable Movie Death #3,” community college job fair—it might be nice if the transcripts could reflect a link to the relevant website [laughter] so that future historians can make the proper associations.

All right. Levity aside, I agree with comments like those of Presidents Williams, Lockhart, and Lacker. I think that the June 2011 exit principles statement has really served us quite well. For anybody who goes out and talks and takes questions, there have been many times when somebody stands up and acts as if no one has ever thought of this before: “Have you thought about exiting?” And it's very useful to say, “Yes, the June 2011 minutes have that, and we expect to do that.” So they have served us very well. Now, having said that, I still think that exit is a few years away, and we should be careful not to impede the effectiveness of our current policy, which I take to be, provide a sufficient amount of accommodation to reduce the

unemployment rate below 6½ percent as soon as possible. There is a tension, as many have noted already, in our communications discussing our current short-term accommodation and, ultimately, longer-term restraint. We need to deal with that. So I personally am in no real hurry to announce a full revision to our exit principles. But that said, I do take the point that it's a good idea to make some minimalist adjustments to the principles that we have in place, and most of those simply reflect the reality of a substantially larger balance sheet than what we did contemplate in June 2011.

Regarding the things that the staff is looking for to tabulate, I definitely think that somehow mentioning that normalization is likely to take longer than three to five years—whether we're specific about that or we just take it out—is important as is conveying the idea that we'll be in no hurry to unload our MBS holdings to get back too quickly to a Treasuries-only SOMA account. Ultimately, Treasuries-only is the right place to head, but we should reserve as much flexibility on the tactics of that as seems reasonable. In some sense, I think that one way to handle this might possibly be just in a statement from the Chairman or in a paragraph in the minutes. I don't know. I suppose we could label something "Exit Principles, version 2.0," but I'm a little concerned about drawing too much attention to it. And because many people have made some very good recommendations already about how to handle that, I'm not going to get into that detail too much.

The second set of questions I took to be, how do policy developments since June 2011 factor in? As I was mentioning during the Vice Chairman's comments, it is very complicated how the thresholds interact with the size of our balance sheet and what we're going to do with it. I think that it's very important for us to continually reinforce the threshold concept of what our policy is. Our forward guidance—it's not a trigger; it's a threshold. And that will come into

play as we contemplate any reserve draining. As the unemployment rate gets close to the threshold level of 6½ percent, reserve draining might begin about contemporaneously with the expected liftoff of the funds rate—but that’s a big “if”—if the inflation projection is around 2¼ percent or whatever your number is. If inflation is at the upper tolerance, conditional on what our guidance is, then we’re more likely to view 6½ percent as closer to a trigger in that conditionality. But if the inflation projections are 1½ percent, then I’m in the camp with President Kocherlakota—there’s no reason why we should very quickly withdraw accommodation when inflation is not a problem and unemployment is too high. Then you would not want reserve draining to start too soon. I think we’re going to need to judge some type of response function of the funds rate with the unemployment rate and our inflation projection. It strongly suggests to me that draining will need to be contemporaneous with the decision to actually increase the funds rate at a future meeting. So that’s how I would think about trying to describe this. However, having gone through as much detail as I have, I’m not optimistic that we’re going to be able to put that nicely into a principles statement. But if we could, that would be fine. I think that’s more tactical, and it’s not high principle.

The remaining questions I’ve already pretty much answered. I think we can reduce MBS assets slowly. Terminal SOMA should be Treasuries only. The path could be simply redemptions, and selling short-term Treasuries, and securities in general; that would be fine by me. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President George.

MS. GEORGE. Thank you, Mr. Chairman. I would agree with providing clarity around the exit strategy in light of changes since 2011. I think that would enhance expectations and reduce some uncertainty, and I would do that sooner rather than later. I think I agree with those

who've commented about what being clear means—that the communication is about our ability to manage an exit versus actual exit plans, notwithstanding my own preference. I do think relying more on high-level principles, as Vice Chairman Dudley and President Kocherlakota have emphasized, and leaving out the tactics is going to be important, and we'll need that flexibility during the policy-normalization process. I prefer that we retain the commitment to eliminate agency securities and return to a Treasury portfolio, but that said, I would not encumber such a commitment with any specific time frames for how we shift assets in there. The final thing I wanted to mention is in terms of describing the long-run operating procedures. We have time to get some experience and study this, but I would take some of the steps that were in the staff memo to ensure that the mechanics of liftoff proceed smoothly. And we should think more about exploring some of the options they proposed in those recent background memos for how we improve control over the short-term interest rate. Thank you.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. As we all know, nearly two years after we published our exit principles, the outlook and policy circumstances have changed considerably, and, because we don't know what the future will bring, I think we should be careful on how we revise the published exit strategy. In preparing for that uncertain future, we should take care to preserve the credibility of those principles that we view as strategic. The bar to changing a principle should be high, and if a change is warranted, it needs to be convincingly explained to the public. A key lesson that I draw from this experience is that specificity has its costs, and perhaps we were more declarative and specific about tactical details than we should have been in 2011. When the time does come to tighten monetary conditions, I don't know what the size and composition of our balance sheet will be or what financial market conditions will prevail. In

addition, the tactical exit decision will be made by a future Committee, and we just don't know what preferences they will have. While I think we should tell the public as much as we reasonably anticipate about the exit strategy, I would be careful about presuming too much about the future. Therefore, in revising the exit strategy, I agree with others who have spoken ahead of me that we should preserve the existing broad strategic elements of policy normalization. And I think that the staff did this well in the six bulleted items that they wrote down in their background memo. Beyond those six elements or a set of principles that are similar to those, I would leave the timing and sequencing details to be specified by future Committees.

With those general comments, let me quickly answer the questions. Regarding question 1, even though we don't know what the future holds, I think we have a problem if our published statements lose credibility. And based on the Desk's April Survey of Primary Dealers, we appear to have reached that point with our exit principles. For example, most dealers don't expect us to sell our MBS portfolio at all, let alone in three to five years. To maintain transparency, if we can agree on changes to our exit strategy over the course of this meeting and the next, I think we should publish the changes after the next meeting or as soon as possible. Turning to question 2, in light of the developments of the past two years, I would suggest that we revise the exit strategy to be more general and less tactical in order to provide more flexibility to the Committee in the future. The changes in our forward guidance enable us to downplay the tactical elements of the exit strategy and instead focus us more on principles and flexibility. On question 3, as I indicated a few minutes ago, I think the bar to changing principles should be high. The principles of the exit strategy that we published two years ago include a commitment to eventually return to an all-Treasury portfolio, and the reason that we put that in is that we want to minimize the extent to which the SOMA portfolio might affect credit allocation. As President

Lacker mentioned, at this point, we haven't explained to the public why we've become less concerned about credit allocation today than we were two years ago. So unless we are prepared to explain that change in our thinking about credit allocation, I would just prefer to keep the principle as it is. Responding to question 4, if we agree to retain the principle of returning to an all-Treasury portfolio, I consider the plan for eliminating the MBS from our balance sheet as a tactical one, and I wouldn't include it in our set of principles. Depending on the conditions in the economy and financial markets, it could be appropriate to follow a more gradual course of allowing MBS to just run off of our balance sheet and not actively sell. But at this point, I would leave that decision for some time in the future.

And regarding the potential sales of Treasury securities with shorter remaining maturities, from the background memo prepared for this meeting, I came away with the sense that, to get reserves down to where we need them, we'll need to expand the reserve-draining toolkit in a variety of ways, and it seems as though we'll need to use not only reverse repos and term deposits, but also other tools, which include overnight repos, sales of Treasuries with shorter remaining maturities, and even, perhaps, an increase in reserve requirements. Of these other tools, sales of Treasuries with shorter remaining maturities seem the most promising, in the sense of offering a decent level of reserve draining without any obvious downsides. Still, with the exit, clearly far into the future, I don't think a tactical decision or plan to use the sales of Treasury securities with shorter remaining maturities is something we need to publicize now. It would be better to wait until exit is more imminent and the set of tools is more refined. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. I, too, want to thank the staff for all of their work.

Let me start by saying that, in thinking about exit or normalization—whichever phrase we want to use—it's very difficult to talk about it without knowing where you're going. You've got to decide where you're trying to get to before you can design a set of actions that are going to get you where you want to go. It's very important that we think about it in that sense. And so I think it's important to talk about our operating environment going forward. In that sense, I think—like President Williams, President Lacker, and several others—that the 2011 statement of principles has actually served us very well. It has been very important to have articulated a set of principles in that document, and they're pretty close to describing where we wanted to be. We desire to return to an operating environment where the funds rate was our instrument; that requires shrinking the balance sheet to the point where we can manage the funds rate. And we desire to return to an all-Treasuries portfolio. Those were the principles, I thought, laid out in that memo, which are very important and, from my perspective, still stand today. As many people have said, “Well, the tactics may need to be changed about how we get there.” Fine. The tactics are going to be dictated in part by where we are when we start to normalize, and we don't know where that's going to be. Our balance sheet has grown, and its composition has changed since our exit principles, so while I believe that the principles generally apply, the tactics, indeed, may have to be changed. I don't know how to change those tactics, at this point, until I know what it's going to look like when we get there—what the size of the balance sheet is and what its composition is.

I'm sympathetic with the notion of backing off on some of the tactical stuff, but I am very cautious to do much with that in a rush. For example, when it comes to the adoption of

thresholds in the forward guidance, we've already changed our forward guidance several times since June 2011. In August, we created a time-date; we've changed that time-date three times; and then we switched to thresholds. It's not obvious to me that changing the exit principles would create as much disruption, though sometimes less change may be desirable. I don't think we need to adopt any changes in the exit principles right now. We need some patience to be comfortable with (a) where we're going and then (b) what our position is going to look like when we get there, where we can ask, "Okay. What are the tactics of moving from here to our long run?"

I don't think that's a good idea at all to try to move the exit principles up in generality, to eliminate them altogether, or to gut them from any content other than saying, "We're going to do good things, we're going to keep financial stability, and we're not going to let our mandates go." I don't think that's helpful, and I don't think it's very confidence-inspiring relative to where we've been already. That would be backtracking, in my view. So I'd like to keep as many of the principles in place as we already have. I strongly support retaining the commitment to eliminate agency securities from our portfolio and returning to all Treasuries. I feel much the way President Lacker does on that. I believe we should be returning to a corridor system that, in normal times, constrains our balance sheet. By having an operating system that constrains our balance sheet, it serves as a commitment device against us using the balance sheet for purposes other than monetary policy. And if we were to have a very large balance sheet and operate that at normal levels, I think that, given that it would be separate from our primary monetary policy tool, which would be the funds rate or short-term interest rates, we really ought to have a set of guidelines and rules as to how we will use that balance sheet, rather than leaving it as a completely discretionary, unspecified, free parameter for the conduct by the central bank. In that

sense, I feel strongly about returning to a corridor system. I also don't think we gain much by retaining MBS in the portfolio. Regarding the balance sheet, by the way—I'm reminded of President Williams's story about the hobbit Bilbo not being willing to give up the ring. I kind of feel that way about the balance sheet. We've got this really big balance sheet that we could use for all of these great purposes, but we just don't want to let it go. But it may be the right thing to let it go and reserve it only for very extraordinary, extreme circumstances, whether we have another financial crisis or we need to be a lender of last resort. We can always do that, but, boy, I hate to be using it in normal times.

It's also been suggested that we can avoid the political cost of incurring losses and deferred assets if we refrain from asset sales altogether or just let MBS securities run off. I think it is way too soon for us to commit to such a strategy. I just don't think we know the right answer to that. I don't think it's at all clear that, for any given path of accommodation, we could use forward guidance or interest rate changes that would compensate for the effect of larger balances. Let me give you a little on work that the Philadelphia staff has done on this. They've taken a very simple New Keynesian model with perfect foresight, perfect credibility, and LSAPs that affect estimates in the larger range of what the empirical results have suggested, and they've investigated the ability of changes in forward guidance to offset or react to changes in the LSAPs. Admittedly, this framework would not be my preferred framework, but it is a framework that allows for very powerful effects from LSAPs and from forward guidance. The problem is that, with the zero bound as binding, we have to rely a lot on forward guidance, and our ability to offset the path of LSAPs will depend on the scenario being considered. For example, the analysis suggests that an early end to LSAPs can be offset either by delaying a funds rate liftoff date or by flattening the pace of the rise in the funds rate path after liftoff. That

seems to work okay, but the analysis also shows that the effect of not selling assets and just allowing them to run off and holding a very large balance sheet for a much longer time may be very difficult to offset that effect through changes in the funds rate path and forward guidance.

I think that the key insight of this is recognizing that the forward guidance—primarily, in this model, working through inflation expectations—amplifies the effects of future policy stances on the current economy, which is exactly what many people would like to see forward guidance do. Therefore, it renders the timing of the adjustments of the funds rate and the size of the balance sheet critically intertwined in some way. Loosely speaking, by committing LSAPs to be larger for longer, or the duration of the portfolio to be longer, it gives greater bang for the buck, and you in fact get a big rise in inflation expectations now. And if that's big enough, it would be very difficult to offset that with current funds rate increases. What this means is that the changes in the funds rate path have more impact on the current economy if they follow, rather than precede, the effects of changes in LSAPs. For example, if we announce that we will hold assets to maturity and not engage in sales, the longer we do that, the bigger will be the current effect from the LSAPs and the faster we will have to raise the funds rate path in the near term to achieve any given level of policy accommodation.

Now, I understand that this analysis is based on a relatively simple model, which has a lot of assumptions in it, like a lot of our models. But it does seem to me to suggest that holding balances for very long times, as I said, will lead to steeper interest rate choices in the near term. For this reason, I'm very reluctant to signal that we will keep the balance sheet very large for a long time and not sell. I just think that, at this point, we don't know enough about and understand the interactions between our balance sheet decisions and the path of forward guidance and the funds rates that we may have to follow going forward. So I'm reluctant to

commit to that. That said, I agree that the time frame for returning to an all-Treasuries portfolio will depend on how large the balance sheet ultimately becomes. We don't know the answer to that, and I don't see any point in having "three to five years" in there, at this point. But I don't want to put another number in there, either, because I don't think it's necessary.

Finally, our June 2011 exit strategy principles discuss sales of MBS but do not mention sales of Treasuries, and that was question 4. At that time, allowing maturing Treasuries to run off was expected to result in a sizable decline in reserves, because the average maturity of our Treasury holdings at that time was quite a bit shorter. So, selling securities was not anticipated as being necessary. With the changes in the composition of our portfolio over the past two years, it could be that we'd want to sell Treasuries during exit to reduce the size of the portfolio more quickly. But it's not obvious to me that, because we're aiming to return to an all-Treasuries portfolio, that may be the best strategy in achieving the right composition that we may be striving for. I don't think we can commit now to what the pace of sales is going to be until we know about both the composition and size of the portfolio at the time the LSAPs are ended.

As I suggested at the last meeting, one of the things, though, that we may want to consider is our current reinvestment policies. For example, I think we might be well served by considering curtailing reinvesting the runoffs in MBS in MBS and, instead, begin reinvesting those in shorter-term Treasuries. This would begin a gradual process of reducing duration of the portfolio gradually, and beginning to rebalance it toward Treasuries gradually, by changing that reinvestment policy. I believe that, at the end of the day, that could provide the Committee with a lot more flexibility down the road as we try to juggle the pace at which the balance sheet declines and its composition. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I have just some brief comments. First of all, let me agree with President Williams and others. I do think our exit principles have been exceptionally valuable during the last couple of years. The Chairman and many others have been questioned on numerous occasions—daily, perhaps—about what we’re going to do about exit, and it’s been very valuable to have those principles in place.

On question 1, about the timing of any revision to exit principles, I don’t think that now is a very good time to make any changes. As Governor Duke, Governor Tarullo, and President Evans noted, discussion of exit is often taken as a notion that some decision has been made that exit is near. And that’s a troublesome factor for this Committee at this juncture, so I wouldn’t try to do too much with the exit principles right now. I have a suggestion in this regard. These are technical and complicated issues. I will propose that we assign the detailed normalization discussion and the associated operating procedure discussion to a subcommittee, and that we have that subcommittee report back to us at some point in the future. I think it’s worked exceptionally well on the communications issue.

In our previous discussion, Governor Yellen described the exit strategy as an overdetermined system. There are a lot of ways you can do this, and it’s not quite clear exactly what the right way is. And I think President Plosser is exactly right, and as Governor Duke and others have indicated, where you are trying to be in the long run really affects how you would go about this. These strike me as not easy issues to deal with at the FOMC level, and so I’d at least give thought to having a subcommittee work on this and report back with a recommendation or a set of recommendations that might be easy to work with for the Committee.

On the revisions of principles and how they interact with thresholds, I do think that thresholds have helped us get away from the date-based forward guidance. That’s been very

useful for the Committee. I'd like to remind people that forward guidance is a policy tool only because of the zero lower bound. Accordingly, I don't think that thresholds are going to make any sense or play any role as a long-term tool. The way I was thinking about thresholds and exit was that, well, once we pass a threshold sufficiently far that the Committee is ready to put the exit machinery in motion, these thresholds will be discarded, as they wouldn't make any sense anymore because now you're in the exit phase and you're not trying to promise to stay lower for longer. You've got the rocket, and you're discarding the booster rocket at some point. I think that's the way to think about it, so that's why I was asking Vice Chairman Dudley earlier about his views on this. I don't see that as particularly confusing. Of course, when you get near to the time of these thresholds, there is going to be a lot of discussion about what the Committee is going to do? And that's appropriate. But one of the first things the Committee might do is to take one of the first steps in the proposed exit strategy. That seems okay to me.

On retaining MBS, I do agree with Presidents Lacker, Williams, and Evans that the Committee should reaffirm its long-run goal to return to a Treasuries-only portfolio. I do prefer that we be out of individual markets, as a matter of principle. I think that's a good place for the central bank to be in the long run. I am willing to introduce somewhat more flexibility on the pace of sales of MBS, but, ultimately, they should move off the balance sheet. The Congress has other institutions for intervening in housing markets.

On question 4, sales of MBS or Treasuries during exit, I agree with President Fisher on this. As some of you recall, I've long maintained that a gradual, state-contingent pace of sales as a first step in the exit process would be preferable to raising the policy rate. Frankly, I think the Committee suffers from a mild form of insanity on this issue. Once the balance sheet is down to a more manageable size, the Committee could make a decision about rates. This would allow

you to maintain lower policy rates for longer. That seems to be exactly what we're trying to do. So I think that that would be a preferable way to do the exit. I lost that debate earlier, but perhaps once this gets into subcommittee [laughter], that view might be reconsidered.

MR. FISHER. Remember, insanity is when you repeat something over and over and over. [Laughter]

MR. BULLARD. I'm aware of that. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Yellen, would you like to comment on the Bullard subcommittee?

MS. YELLEN. Good luck. [Laughter]

CHAIRMAN BERNANKE. Governor Yellen.

MS. YELLEN. Thank you, Mr. Chairman. I agree with those who have stressed that it served us well to have a set of exit principles. But circumstances have changed in important ways since we adopted them, and adjusting them soon would have a number of benefits. First, our adoption of threshold-based forward guidance for the funds rate rendered portions of the existing principles obsolete. More important, however, the positive market reaction to that shift suggests that we'd be better off recasting the exit principles in a manner that de-emphasizes calendar dates and intervals, instead clarifying the economic conditionality of our future actions. In particular, I agree that a revised statement of exit principles should de-emphasize details and, instead, emphasize that we'll use our various tools in support of our chosen stance of monetary policy, and that that stance will be expressed in terms of a target level for short-term interest rates. Another reason to revise the exit principles is that we've already alerted markets that we may alter our MBS strategy. I believe we owe the public greater clarity on this issue as soon as possible. But I agree with Governor Tarullo and President Lockhart that it's important to change

our exit principles in a way that it will be perceived as technical adjustments reflecting changes in our circumstances and not be confused as a shift in our views concerning the appropriate stance of policy. And I'd say that the availability of a press conference in June could make that an opportune time to adopt a revised policy.

Before continuing with the questions for discussion prepared by the staff, I'd like to emphasize how much I agree with Governor Duke and Vice Chairman Dudley. I think we face a difficult quandary due to our reliance on the fed funds rate as our target. Our exit strategy really needs to support our new threshold-based forward guidance, but that guidance links moves in the federal funds rate target to evolving economic conditions. Now, if we stick with the funds rate as our target after exit—and our current forward guidance implicitly takes that as a decision that we've made—I don't see how we avoid draining reserves to establish better control of that rate after we lift the target. But then we face the problem of, how do we, in effect, avoid saying to markets, just as soon as we've undertaken draining action, that policy has now been placed on a predetermined course at which a liftoff of our target for the funds rate will happen at some predetermined future date? So I agree with Governor Duke and Vice Chairman Dudley that it could be extremely advantageous to deal with this quandary and, more generally, to switch to a framework that would focus on a different short-term rate as a target and one that we could control without having to drain enough reserves that the funds rate becomes less idiosyncratic and thin. And the suggestion that we could focus on the GC repo rate and use standing repo and reverse repo facilities to establish a narrow corridor is something that I really think is deserving of staff study. It could make sense to be operating in this way not only at the time of liftoff and over the longer run, but also, as Vice Chairman Dudley suggested, possibly even sooner as a way to establish control over a short-term rate.

If we revise the exit principles now, we face the question about what to do in terms of references to the funds rate. I thought that the proposal circulated by President Kocherlakota very nicely finessed this issue by referring to our acting primarily, in his words, “by influencing the federal funds rate and other market interest rates.” For now, I think this would be a satisfactory solution, given that the funds rate currently does take center stage in our forward guidance. Over time, it may make sense for us to inform the public that we are considering a number of longer-run options, and that we’re debating their various merits and drawbacks based on our own recent experience and that of other central banks operating with different kinds of procedures.

President Kocherlakota’s proposal for a revised exit strategy strips almost all detail of implementation out of the exit principles. I think this has some attraction. At the same time, I think it is important to keep in mind that our exit principles are a communications tool, and that they have worked to reassure the public that we’ve carefully thought about the issues, that we’re confident we have a plan that will work, and that we intend to make sure that any asset sales that we undertake will not disrupt financial markets. But I agree with the general point that, as far as the normalization process is concerned, it would be helpful simply to convey that we have a range of tools available to drain reserves, including sales of Treasury securities close to maturity, but that we’ll decide on and communicate the specifics of such operations only as the time approaches.

Returning to the questions, on question 3, my preference would be to return in the long run to a SOMA portfolio consisting predominantly, but not necessarily entirely, of Treasury securities. In normal times, I agree that the Fed should not be seen as engaging in credit allocation, although, in the circumstances we’ve been in, I think our MBS holdings have been

doing a lot of good. Even after exit, a severe downturn could again confront us with a need to resort to balance sheet policies. And I thought the staff made a convincing case that, to maintain analytical and operational expertise, it would be prudent to hold, in normal times, at least a modest share of MBS securities in the SOMA portfolio.

On question 4, I'd favor eliminating the commitment we've made to sell MBS. First of all, I consider our MBS purchases the most efficacious part of our asset purchase program, and eliminating our commitment to sell them would, on the margin, provide a bit of additional accommodation now. Second, we'd diminish the risk that we'll be locked into a program that, when the time comes to execute it, could fuel a sharp backup in MBS yields and mortgage rates. And of course, from the perspective of reducing capital losses, focusing any sales on securities that are close to maturity is beneficial. So, for these reasons, I would recommend that we eliminate from the revised exit principles our promise to sell MBS, and that we add the possibility that, sometime during exit, we may sell shorter-dated Treasuries. Given the various uncertainties we face during exit, preserving optionality is valuable.

CHAIRMAN BERNANKE. Thank you. Governor Raskin.

MS. RASKIN. Thank you, Mr. Chairman. Some of the current exit strategy principles appear out of date. This is not meant to kick ourselves too much, but principles are supposed to be timeless. So, in some ways, I think, like President Lockhart and others, that we misnamed the last exit strategy document when we created and adopted it. Principles are supposed to be statements of outcome that drive tactics, rather than the tactics themselves. What we prepared, I think, were some statements of outcome and some statements of tactics, rather than the statements of outcome alone that drive the tactics. And now we see that these tactics of exit

sequencing and composition do not make perfect sense, given the consequences of the Committee's set of policies as articulated in our FOMC statements.

To start with the questions, in order to answer question 1, about the best time for the Committee to adopt and release any revision to its exit strategy principles, I would back into an answer by saying that I think that, if revisions are undertaken now, the Committee should craft them with three guideposts in mind. The first guidepost would be operational flexibility, the second guidepost would be policy neutrality, and the third guidepost would be to not be confidence depleting as compared with what we have now with our current set of principles. First, if we're to tackle revisions now, I think we should do everything we can to maintain maximum operational flexibility during the extended period of time that will span the exit process. The time of exit isn't imminent, and the process of exit will be a protracted one. So the last thing we should do is to pretend to presume that we will know exactly what steps, with what tools, and in what order and what operating framework will be necessary several years hence. Second, any revisions, if they're undertaken now, shouldn't contain embedded policy choices. Any revisions would be prompted by a perceived need to update the existing set in light of the size and composition of the balance sheet, as well as in light of the need to harmonize the principles with policy actions that have been taken since the time of the initial set of exit strategy principles. So, considering flexibility, policy neutrality, and not being confidence depleting together, it seems that, in order to adopt and release any revision, we don't need to, nor should we, come to any final decisions about our operating framework, nor about the particular mix of draining tools and contractionary devices that we'd be implementing.

From this perspective of the exit strategy principles—in other words, conceived as a broad statement of principles rather than a set of defined, in-sequence steps—the timing for

adoption and release of any such revision doesn't seem as important as the conceptual distinction between a release of such revised principles and the adoption of any policy action, such as adjusting or calibrating in the future. Ideally, by maximizing the timing between a sequencing document and a policy announcement, we would minimize the possibility that the exit strategy revision gets interpreted as a policy action. For example, we could first make an adjusting/calibrating decision and then release revised principles, or we could first release the revised principles and then make the adjusting/calibrating decision. I don't think it matters which comes first, as long as they appear conceptually distinct so as not to be viewed as part of the same package of policy choices.

To increase the possibility that we not inadvertently communicate that the exit strategy revisions constitute a policy step, after this meeting, the minutes will reflect the fact that there was extensive discussion about revisions to the exit strategy principles. The Chairman could then ask the staff to prepare such revisions, and, assuming that the new statement is in fact a statement that preserves operational flexibility and is policy neutral and is not confidence depleting, the statement could be adopted and released at any time. However, to the extent that we embed policy into the exit strategy, I'd argue that we have to stay conscious to the possibility that our revised strategy will be perceived as part of a bigger set of policy moves and then could have unintentional and confusing and confidence-depleting effects on the market's perception of our policy choices.

To answer question 2, about the approach for revision, I can imagine an operationally flexible and policy-neutral set of revisions, like those proposed by President Kocherlakota. I can also imagine a set that would start with the existing set but would be silent on any required sales of mortgage-backed securities, or that might explicitly note a connection between lifting the

federal funds rate and thresholds for unemployment and inflation, and that could note that the tools that could be used to manage the exit could consist of a combination of things, such as the IOER, the use of reverse repos, a term facility, and the use of required reserves.

Following from this more general set of exit principles, I would prefer to introduce flexibility to maintain some agency MBS on the balance sheet, subject to future Committee decisions. Retaining agency MBS provides some benefits in terms of market functioning, financial stability, and fiscal costs that are raised by the prospect of selling longer-term securities. Even though we have discussed these benefits, as a Committee, we haven't yet weighed them. So I'd be reluctant to reduce our flexibility in using the MBS portfolio to achieve some of these benefits. If none of these reasons for retaining MBS seem persuasive to the policymakers of the future, or if they choose to weigh differently the different benefits that retaining MBS may confer, I wouldn't constrain them in the exit strategy document to not sell them. If we were to revisit the exit principles, given the size and composition of the balance sheet, I would not favor announcing specific plans with regard to those securities but would instead introduce flexibility to permit the possible retention of MBS as an explicit policy action that could then become reflected in the appropriate FOMC statement. Thank you.

CHAIRMAN BERNANKE. Thank you. Governor Stein.

MR. STEIN. Thank you, Mr. Chairman. Basically, on almost all issues of substance, I find myself in very close agreement with the points that Vice Chairman Dudley first set out and that have since been echoed by many others. So let me just go through them.

First, with respect to MBS holdings, my preference would be to eliminate any commitment to sell them over the near-to-medium term and to clarify this sooner rather than later. This seems to me like a very straightforward call. It gets rid of potential problems and has

no real downside, as far as I can see. I want to say, though, that to the extent that we explain this decision publicly, I would much prefer to emphasize the market-functioning and financial stability considerations—the simple fact that, why do we want to be selling securities that are now seasoned and in a more illiquid part of the market, which is only going to cause disruption, put us on the wrong side of the bid–asked spread, and cost taxpayers? That’s all not good. I wouldn’t be emphasizing the fact that we’re doing this to smooth remittances. That’s a byproduct, fine, but I don’t think it should be a rationale.

On pretty much everything else discussed in the memo, I would prefer to retain optionality, as would many others. We’ll just know more later, and we’ll be in a better position. That applies to whether we want to run a floor or a corridor system. That applies to whether we want to ultimately have a small, token inventory of MBS to be playing with. I’m completely agnostic at this point; I just don’t see any reason to decide now. It also applies to something that President Rosengren brought up, which is, do we want to have, on the Treasury side, a somewhat larger balance sheet than we need even for, say, a floor system, simply because we want to have Treasuries of different maturities that we can move around in an MEP-style way, say, for financial stability considerations? I personally am kind of fond of it, but, look—it’s just a gleam in the eye at this point. So one certainly wouldn’t want to put that out there as something you want to affirmatively do. You might want to be careful not to say something that absolutely precludes it, and again, I think that just goes to the flexibility point.

Again—obviously, flexibility is good. Opportunities to learn are good. At the same time, anything we can do to accelerate the learning process affirmatively is also good. Here I want to agree with the points that Governor Yellen, Governor Duke, and others have made about the reverse repo stuff. I see no reason not to push forward affirmatively with figuring out if we

can make that workable. I don't see any reason to wait to do that until we're at the point of actually having to raise rates. I don't think it should confuse anybody that we're getting ready to exit. We're just getting the plumbing in order, in some fundamental sense. So that's a useful thing to do. We don't need to talk about it. That falls under tactics, but we should preserve the flexibility and then get to work on taking advantage of that. I think that's how to think about it.

Then, on the question of how we best communicate all of this, in a first-best world, as Dan said, if we can do this with a set of simplified, high-level principles that are not overly committing, pretty much in the spirit of what Narayana had, that's the ideal. If we find ourselves getting bogged down, if we have to go a subcommittee route, then I would prefer to short-circuit this—again, as Dan said—with something in the statement or in a press conference and not spend a lot of time litigating all of this and then inevitably getting drawn into probably more specificity than would be ideal. That's where I am. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Powell.

MR. POWELL. Thank you, Mr. Chairman. I would agree with others that the June 2011 statement served its purpose very well over time, but it no longer reflects where the Committee is, decisions that we've made, or where we intend to go. We have signaled the market that we're thinking about it, and we need to follow through in some way. Let me say what I think the objective is, and that is to increase confidence—on the part of both the general public and the marketplace, which are different audiences—that we can exit, that we can do it in an orderly fashion, and that we have the tools and all of those sorts of things. That's really what we're trying to do. And I think that naturally breaks down into a stripped-down set of principles. I would start with what President Kocheerlakota had and work out from that, rather than working in from the larger, mixed set from June 2011. There are also going to be tactical decisions, which

we should make only when it serves us to. I think it does serve us to make some of them now, and I'll come back to that. I actually don't have a great feeling for whether those belong in the minutes or in the statement of principles. But anyway, I do think that they're separate, and I would prefer to keep the principles as simple as possible than to do it in a statement of principles.

I guess I'll start with a question: What does the market really need to hear from us now, in the summer—almost summer—of 2013? It'll be summer, if not fall, by the time we're done with this. [Laughter]

MR. KOCHERLAKOTA. It's still winter in Minneapolis.

MR. POWELL. I think it's three things. First, we're confident that we have the tools to manage the exit, particularly that we can tighten policy and exert control over short-term interest rates when the time comes. That gives us a chance to talk about the development of the tools, which is a really important message. Again, different audiences: There's the elevator speech that President Evans referred to, but market participants also need to get a growing sense of confidence over time, as we approach normalization, that we can do this. Second, everyone needs to understand that we've thought quite carefully about this and have a credible plan, and that we're going to move predictably in a stately pace, minimizing volatility, disruption, costs, and all of that. And, third—I think importantly—during exit, we are going to adapt to circumstances as they evolve and not just blindly follow past practices or return to past practices or follow a battle plan that was authored years ago, before the process began. If we can't reach agreement—and I certainly hope that we can; it seems as though we ought to be able to, but we'll see—then I would support doing something like what Dan, Jeremy, and others referred to, which is to have a stripped-down thing where the Chairman talks about various decisions in a press conference and that kind of thing. But I see that as a far less attractive alternative.

To talk about a couple of things in particular, let's talk about MBS. Frankly, the most important aspect of the MBS decision, to me, is the financial stability aspect, and I think it serves us to make the decision now along the lines of what Vice Chairman Dudley said—make a decision not to sell MBS until a certain point. It's not a commitment never to sell them—and regarding a commitment to return to an all-Treasury balance sheet, I'm fine with that—but I would commit not to sell them as part of the normalization process. This, to me, is the very place where financial stability could erupt. You're selling into an illiquid market. You're forcing the new buyers to hedge—whereas we don't hedge—which will involve shorting securities. So I just think that's a good thing to do, and frankly, I believe we should decide it now even though it is obviously tactical. If we are going to say that now, I also like the idea of offsetting it with the sales of short-term Treasuries. Pulling that in allows us to say that normalization won't really take a whole lot longer. So I like pairing those two up and making a decision now.

Thresholds—they're out there. I don't know whether anything needs to be said. They shouldn't be in the new principles statement. They're out there now, and that probably is not something you need to address.

I would echo others that I would walk away from our too-strong embrace, I think, of the federal funds rate as the single policy tool of choice. As Governor Duke pointed out, the market now expects that reserves are going to be \$2½ trillion. If that turns out to be what happens, it'll take several years to reduce reserves to the point at which they have any scarcity value, let alone to “the smallest levels that would be consistent with the efficient implementation of monetary policy.” In the meantime, there is going to be slippage between interest on reserves and the federal funds rate, and the relationship may not be a stable one. I don't doubt the efficacy of the

tools in the memo, and I don't doubt the quality of the work that's been done on that, but this is just not something we need to decide right now. So I would just loosen that statement because I think Narayana did very well to suggest that we use interest on reserves to tighten financial conditions by raising a range of short-term interest rates. And again, I do have confidence in that. The decision whether we're going to manage monetary policy through the federal funds rate, as in the days of old, or through a corridor system or a floor system or some other means is going to be the subject of many years of happy discussion, but it's just not a decision we need to make now.

As far as the timing of announcing a rethought exit strategy, I guess I think it should come either after or contemporaneously with a decision to reduce purchases. Today's discussion has added to my confidence that it's probably not going to be ripe for an announcement before a decision to reduce purchases. And I wouldn't see it as a way of making a significant comment about the timing of normalization. The strategy should be independent of the timing. But there is a risk that talking about it will convey a sense of an earlier departure to the market, so I would say that it's better to wait until after we taper. That's where I am. Thanks, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Thanks, everyone. I won't try to summarize, but I do think that there was a good deal of agreement. What we'll do is to see if we can put together a set of potential principles for discussion and comment, and, based on the reaction to that, we'll decide whether to go forward with some formal principles or to use a more informal process to communicate this. I agree with a lot of what was said not only about flexibility, but also about the need to have enough information that it provides confidence to the public that we, in fact, are able to exit and to manage interest rates as we need to at the appropriate time. Thank

you for this, and we will certainly follow up—probably in June, but we’ll have some discussions about that.

We’ve come to the end of our agenda. Lunch is available. I would ask you, if you’re staying, to get your lunch and come back to the table. Linda Robertson can give us a few remarks on congressional and political developments. Otherwise, all that remains is for me to say that the next meeting is Tuesday and Wednesday, June 18 and 19, 2013. Thank you, all, very much. The meeting is adjourned.

END OF MEETING