Meeting of the Federal Open Market Committee on
January 30–31, 2007

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, January 30, 2007, at 2:00 p.m., and continued on Wednesday, January 31, 2007, at 9:00 a.m. Those present were the following:

Mr. Bernanke, Chairman
Mr. Geithner, Vice Chairman
Ms. Bies
Mr. Hoenig
Mr. Kohn
Mr. Kroszner
Ms. Minehan
Mr. Mishkin
Mr. Moskow
Mr. Poole
Mr. Warsh

Mr. Fisher, Ms. Pianalto, and Messrs. Plosser and Stern, Alternate Members of the Federal Open Market Committee

Mr. Lacker and Ms. Yellen, Presidents of the Federal Reserve Banks of Richmond and San Francisco, respectively

Mr. Barron, First Vice President, Federal Reserve Bank of Atlanta

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

Messrs. Connors, Evans, Fuhrer, Kamin, Madigan, Rasche, Sellon, Slifman, Tracy, and Wilcox, Associate Economists

Mr. Dudley, Manager, System Open Market Account

Messrs. Clouse and English, Associate Directors, Division of Monetary Affairs, Board of Governors

Ms. Liang and Mr. Struckmeyer, Associate Directors, Division of Research and Statistics, Board of Governors

Messrs. Gagnon, Reifschneider, and Wascher, Deputy Associate Directors, Divisions of International Finance, Research and Statistics, and Research and Statistics, respectively, Board of Governors

Messrs. Dale and Orphanides, Senior Advisers, Division of Monetary Affairs, Board of Governors

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

Ms. Kole[1] and Mr. Lebow,[1] Section Chiefs, Divisions of International Finance and Research and Statistics, respectively, Board of Governors

Messrs. Doyle,[1] Schindler,[2] and Wood,[1] Senior Economists, Division of International Finance, Board of Governors

Messrs. Engen[2] and Tetlow,[1] Senior Economists, Division of Research and Statistics, Board of Governors

Ms. Weinbach, Senior Economist, Division of Monetary Affairs, Board of Governors

Ms. Roush,[2] Economist, Division of Monetary Affairs, Board of Governors

Mr. Hambley,[1] Assistant to the Board, Office of Board Members, Board of Governors

Mr. Gross, Special Assistant to the Board, Office of Board Members, Board of Governors

Mr. Luecke, Senior Financial Analyst, Division of Monetary Affairs, Board of Governors

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

Messrs. Judd and Rosenblum, Executive Vice Presidents, Federal Reserve Banks of San Francisco and Dallas, respectively

Mses. Mester and Mosser and Messrs. Sniderman and Weinberg, Senior Vice Presidents, Federal Reserve Banks of Philadelphia, New York, Cleveland, and Richmond, respectively

Mr. Cunningham, Vice President, Federal Reserve Bank of Atlanta

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

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[1] Attended portion of the meeting relating to the role of economic forecasts in policy communications.
[2] Attended portion of the meeting relating to the economic outlook and monetary policy discussion.

Transcript of the Federal Open Market Committee Meeting of January 30-31, 2007

CHAIRMAN BERNANKE. Good afternoon, everyone. Let me be the first to welcome Bill Dudley to the table.

MR. DUDLEY. Thank you. [Applause]

CHAIRMAN BERNANKE. Today is our annual organizational meeting, so we have a few items to take care of.

MR. KOHN. I'll start, if that's okay with you.

CHAIRMAN BERNANKE. Go ahead, Governor Kohn.

MR. KOHN. Before we get illegal here, I am honored and pleased to nominate Ben Bernanke to be Chairman of the Committee.

CHAIRMAN BERNANKE. Thank you. Objections? [Laughter]

MR. KOHN. I need to interrupt again.

CHAIRMAN BERNANKE. Yes.

MR. KOHN. I am as pleased and as honored to nominate Tim Geithner to be Vice Chair.

CHAIRMAN BERNANKE. Are there any objections? Thank you very much. Ms. Danker, will you read the list of staff officers of the FOMC.

MS. DANKER. Secretary and Economist, Vincent Reinhart; Deputy Secretary, Debbie Danker; Assistant Secretary, Michelle Smith; Assistant Secretary, Dave Skidmore; General Counsel, Scott Alvarez; Deputy General Counsel, Tom Baxter; Economists, Karen Johnson and Dave Stockton; Associate Economists from the Board, Tom Connors, Steve Kamin, Brian Madigan, Larry Slifman, and David Wilcox; Associate Economists from the Banks, Charlie Evans, Jeff Fuhrer, Bob Rasche, Gordon Sellon, and Joe Tracy.

CHAIRMAN BERNANKE. Thank you. Are there any questions or comments? Approved without objection. Next on the agenda is a proposed change to Committee rules. We received a memo from Scott Alvarez and Debbie Danker, which concerns how a backup would be appointed in case the Desk Manager was unable to serve. Are there any questions for our colleagues on that memo?

MR. POOLE. I have a question. It has nothing to do with the changes, but something struck me this morning as I was reviewing this material again. Let me refer you to the FOMC's Rules of Organization, page 1: "If a member or alternate ceases to be a president or first vice president of a Reserve Bank, a successor may be chosen in a special election by the boards of directors of the appropriate Reserve Bank or Banks and such successor serves until the next annual election." Now, if Jack Guynn, for example, had retired last year in March, Atlanta had filled the position, and a president had been in place as of September, let's say, would he have come back? This says "no" because it says "until the next annual election." Am I reading that wrong? I'm not sure that has been even the practice in the past.

MS. DANKER. Our General Counsel can probably comment on that, but I can try.

MR. ALVAREZ. There's a little lawyer in all of us. [Laughter]

MS. DANKER. I believe the election that statement refers to is if a new president is appointed and that person is then elected as a member by the boards of directors of the three Reserve Banks, he or she would serve until the next annual election at this time of year, at which point the successor would be elected from one of the other Banks.

MR. POOLE. Then I was not reading it correctly; but you understand where my confusion came from.

MR. ALVAREZ. That's exactly right.

MR. POOLE. Okay. So the alternate would serve until the next president was in office. That has certainly been the practice; my question was about the wording. Thank you.

CHAIRMAN BERNANKE. Are there other questions about the memo? I need a vote. In favor? Opposed? Thank you. Third, we need to select a Federal Reserve Bank to execute transactions for the System Open Market Account. Governor Kohn, would you like to make a proposal? [Laughter]

MR. KOHN. I nominate the Federal Reserve Bank of New York, once again.

CHAIRMAN BERNANKE. Comments? Objections? Without objection. The fourth item is that we need to select the Manager of the System Open Market Account. Governor Kohn.

MR. KOHN. I'd be very pleased to nominate Bill Dudley as the Manager of the System Open Market Account.

MR. FISHER. You have to put your head down, Bill. [Laughter]

MR. POOLE. Second.

CHAIRMAN BERNANKE. Thank you. Without objection. Thank you.

VICE CHAIRMAN GEITHNER. I think we should rule out humor. [Laughter] This is an important annual process, and New York plays an important role.

MR. REINHART. So it will not say "laughter" in the margins. [Laughter]

CHAIRMAN BERNANKE. I think we've started on the wrong tone here. [Laughter] Item 5, we need authorization for the Desk operations. We have two items to vote on separately. On the domestic side, we have a memo from Bill Dudley proposing to change the accounting of repurchase agreements so they will be booked on the SOMA rather than on the books of the FRBNY. Are there any questions for Bill? If not, without objection. Thank you. On the

foreign side, Mr. Dudley is proposing no change to the authorization, directive, or procedural instructions. Any questions? Without objection. Thank you. Bill, you're up.

MR. DUDLEY.[1] Thank you. In terms of market developments, I would like to focus on three major topics. First is the sharp adjustment in market expectations concerning monetary policy since the last FOMC meeting. Second, I will talk about the persistence of high risk appetites in credit markets, with a focus on what may be the most vulnerable market in the United States—the subprime mortgage sector. Third, I want to discuss the possible factors behind some of the sharp shifts we have seen in commodity prices since the last FOMC meeting, in particular whether these price movements reflect a shift in risk appetite among noncommercial investors or fundamental developments in supply and demand.

First, there has been a sharp shift in market expectations with respect to interest rates since the last meeting. At the time of the December meeting, the consensus view among market participants was that the FOMC would begin to lower its federal funds rate target this spring and that this easing process would continue into 2008, with cumulative rate cuts of about 75 basis points. As you can see in chart 1, which looks at the federal funds futures market, and chart 2, which looks at the yield spreads between the March 2008 and the March 2007 Eurodollar futures contracts, expectations have shifted very sharply over the past month. There is now no easing priced in through midyear 2007 and a residual of only about 25 basis points of easing priced in beyond that. This shift in expectations can also be seen across the Treasury yield curve. As chart 3 shows, the Treasury yield curve is now slightly above where it was at the time of October FOMC meeting. Since the December FOMC meeting, there has been a rise of about 35 to 40 basis points in yields from two-year to thirty-year maturities. The shift in expectations is reflected predominately in real interest rates. As can be seen in chart 4, breakeven inflation rates have not changed much since the last FOMC meeting—the decline in breakeven rates that occurred early in the intermeeting period has been reversed more recently, and so we are at or slightly above where we were at the December meeting. This upward shift in real rates appears to reflect a reassessment by market participants not only about the near-term path of short-term rates but also about what level of real short-term rates is likely to prove sustainable over the medium and longer term. The buoyancy of the recent activity data may have caused some market participants to reassess what level of the real federal funds rate is likely to prove "neutral" over the longer term.

Regarding the issue of risk appetite, there appears to be no significant change since the last FOMC meeting. Risk appetite remains very strong. Corporate credit spreads remain very tight—especially in the high-yield sector (as shown in chart 5)—and implied volatilities across the broad market categories—equities and interest rates (see chart 6) and foreign exchange rates (see chart 7)—remain unusually low. Moreover, the turbulence in some emerging debt and equity markets experienced

[1] Material used by Mr. Dudley is appended to this transcript (appendix 1).

early this month was mostly transient and has subsided as well. So things appear calm. But what are the areas of greatest risk?

In the United States, the subprime mortgage market appears to be a particularly vulnerable sector. The vulnerability stems from four factors. First, this market is relatively new and untested. Chart 8 shows the overall trend of first residential mortgage originations and the share of these mortgages by type—conforming, jumbo, subprime, and alt-A, which is a quality category that sits above subprime but is not quite as good as conforming. As can be seen in this chart, subprime mortgage originations have climbed in recent years, even as overall originations have fallen. In 2006, subprime mortgages were 24 percent of total originations, up from a share of about 10 percent in 2003. The second factor is that credit standards in this market appear to have loosened in 2006, with the proportion of interest-only loans and low-documentation loans climbing as a share of the total. As a result, there are some signs that strains in this market are increasing. As chart 9 shows, delinquency rates have moved somewhat higher. In contrast, charge-offs remain low, held down by the rapid house price appreciation that we saw in recent years. Most noteworthy, as shown in chart 10, the most recent 2006 vintage of subprime mortgages is showing a much more rapid rise in delinquencies than earlier vintages showed. The third factor is that most outstanding subprime mortgage loans have adjustable rates. There is significant reset risk given the rise in short-term rates in 2005 and the first half of 2006 and the fact that many of these loans started with low "teaser" rates. Fourth, housing prices are under some pressure, and this could contribute to further credit strains. I see some risk of a vicious cycle. If credit spreads in the securitized market spike because loan performance is poor, a sharp downturn in lending could result as the capital market for securitized subprime mortgage products closes. This constriction of credit could put downward pressure on prices and lead to more credit problems among borrowers. The result would be additional credit quality problems, wider credit spreads, and a further contraction of credit. Fortunately, to date the news is still fairly favorable. The strong demand for the credit derivatives obligations created from subprime mortgage products has restrained the rise in credit spreads. As can be seen in chart 11, spreads are still well below the peaks reached in late 2002 and early 2003. Thus, the economics of making such loans and securitizing them into the capital markets still work. But this situation could change very quickly, especially if the labor markets were to become less buoyant and the performance of the underlying loans were to deteriorate, leading to a surge in delinquencies and charge-offs.

Let me now turn to the commodity markets. The issue I wish to examine here is whether some of the sharp movements in commodity prices that we have observed since the last FOMC meeting represent shifts in the risk appetite among noncommercial investors who have put funds into commodities as a new asset class versus the contrasting view that these price movements predominantly represent changes in the underlying supply and demand fundamentals. To get a sense of this, let's look briefly at three commodities that have moved the most and are representative of their classes—copper, corn, and crude oil. As chart 12 shows, the sharp decline in copper prices appears linked to the large rise in copper inventories at

the London Metal Exchange. If anything, the price decline appears overdue. For corn, the rise in prices also appears consistent with declining stocks both in the United States and globally (see chart 13) as well as the growing demand anticipated for corn in the production of ethanol. For crude oil, the decline in prices is more difficult to tie back to inventories. Although U.S. inventories remain high relative to the five-year historical average (as shown in chart 14), this situation has persisted for some time without having a big effect on prices. Instead, the shift in oil prices appears to be driven mostly by longer-term forces. This can be seen in two ways. First, as shown in chart 15, the change in oil prices has occurred in both spot and forward prices. The oil curve has shifted downward in mostly a parallel fashion, which also calls into question the role of unseasonably warm weather as the primary driver. If weather were the primary factor, then the decline in prices should have been reflected much more strongly in the spot and very short-end of the oil price curve. Second, as shown in chart 16, OPEC spare production capacity has been increasing and is expected to continue increasing in 2007. This growing safety margin reflects both slower growth in global demand and the expansion of non-OPEC output. The improved safety margin may be an important factor behind recent developments in the energy sector.

Finally, there were no foreign operations during this period. I request a vote to ratify the operations conducted by the System Open Market Account since the December FOMC meeting.

CHAIRMAN BERNANKE. Thank you. Are there questions for Bill? President Poole.

MR. POOLE. I was astonished when I saw the note—I think it was in the *Wall Street Journal* a couple of weeks ago—that oil consumption actually fell worldwide in ’06 relative to ’05, which really surprised me. I don’t know quite how to explain that because the economies around the world are pretty strong. I’m assuming that the longer-run price elasticities are taking hold and that a lot of the traders probably believe the elasticity is zero and they pushed prices up pretty high. Does that make sense?

MR. DUDLEY. I think that is definitely part of the story. Another part of the story is that in some countries, especially emerging market countries, the oil was heavily subsidized, and some of those subsidies are now coming off because continuing to subsidize as the oil price climbs entails a rather heavy budgetary burden. So you’re also seeing a sort of normalization of oil prices in a lot of places. Think about the oil that Russia used to sell to Eastern Europe or

some of the surrounding countries at preferential prices. They are no longer getting those preferential prices, so there is a demand response. I think it is happening on both sides. There has been a demand response to higher oil prices, and there has been a supply response coming out of places like Africa.

MS. JOHNSON. If I may add a footnote—I think you also need to watch the pattern of how inventories have behaved. When prices were being pushed up in the process from, say, the end of 2003 to their various local peaks, the incentive to hold inventories rose. At some point in 2006, inventories were very high—we had basically filled every bucket we could find with crude oil—and inventories feed back. It's a dynamic. Price changes create the demand for inventories. The real-time value of inventories feeds back on the price. So I think you saw some of that going on as well in 2006 in terms of driving the price versus driving usage. Purchase for inventory is not well measured. We have inventories only for the OECD, so separating production from consumption is not perfect because we can't always capture the inventories and they are measured as consumption in some cases.

CHAIRMAN BERNANKE. President Fisher.

MR. FISHER. Bill, if you talk to the producers and the refiners—you'll find out that I like to do that kind of thing—there has been some concern, although one can't measure it with any precision, that the so-called city refiners in London or on Wall Street, meaning the speculators, do affect prices. We have had some discussions with your predecessor, but I'm curious as to what your views on that phenomenon are.

MR. DUDLEY. As you know, this topic is undergoing a lot of further research. The academic literature that I've surveyed has yet to uncover a strong causal relationship between a climb in speculative open interest and the effect on price. One reason that is hard to imagine

happening to a powerful degree in the end is that the speculators really don't want to take actual delivery of the physical commodity, and so the price really should clear in the spot market on what's happening to underlying supply and demand. But this topic certainly remains under investigation by a number of researchers. I don't think we have the definitive answer to the question at this point.

MR. FISHER. But we're still working on it.

CHAIRMAN BERNANKE. Vice Chairman Geithner.

VICE CHAIRMAN GEITHNER. Bill, could you or Dave remind us what share of the total outstanding stock of mortgages consists of subprimes or what share of the housing stock do we think is financed at the subprime level? My recollection is that the share is still small even though it has been a large part of the recent flows.

MR. DUDLEY. It's quite a bit smaller share of total outstanding because the average life of the subprime mortgage loan, I'm told, is only two or three years. In other words, if your credit quality improves, you will refinance out of your subprime mortgage into a higher quality mortgage. So originations are 24 percent, but the actual number of subprimes that are actually outstanding is much lower.

MR. REINHART. We reported in yesterday's briefing that subprime borrowers constituted only about 13 percent of all mortgages outstanding.

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. Ex post subprime mortgage-backed securities seem to have been overvalued in the sense that they underestimated default risk for some market segments. So the presumption would be that such information gets taken on board and reflected in the prices of new mortgage-backed securities and that it would translate into higher credit spreads at the retail

level. In your remarks you seemed to suggest that there is a chance that this process of adjustment might cause markets not to work. I'm wondering what you meant by that.

MR. DUDLEY. It's not that markets won't work. It's just the economics of originating subprime loans and selling them into the market would no longer work. In other words, at some point, if the actual capital markets are not willing to accept those subprime mortgages at the right price, then the ability of the person to originate the mortgages and sell them into the market goes away. Now, would this wreck the market? Well, it depends, because some subprime originators can carry these loans on their own books. But the industry is quite fragmented, with a lot of these issuers not having the ability to carry these subprime loans on their books. So that part of the subprime origination market would go away. Some of the monoline subprime originators would be unable to exist if there weren't a securitized demand for those assets.

MR. LACKER. So quantities would go down.

MR. DUDLEY. You could think of the situation as credit availability to that sector diminishing, which could have feedback effects on price. That's the risk.

CHAIRMAN BERNANKE. Are there other questions? We need a vote to ratify domestic operations.

MR. KOHN. So moved.

CHAIRMAN BERNANKE. Without objection. We turn now to the economic situation. Mr. Slifman.

> MR. SLIFMAN.[2] Thank you, Mr. Chairman. I'll wait for my colleagues to come to the table. We'll be using the chart package that you all should have on the economic outlook. Separating the signal from the noise in the recent economic data has not been easy—what with the motor vehicle anomaly, the defense spending pull-forward, and the transitory swings in oil imports. We tried to cut through the clutter by highlighting in the Greenbook real private domestic final purchases, or PDFP—that is, the sum of consumption, residential investment, and business fixed

[2] Material used by Mr. Slifman, Mr. Wascher, and Mr. Gagnon is appended to this transcript (appendix 2).

investment. We think this aggregation, which is shown on line 3 of the table in exhibit 1, currently is giving a fair representation of the thrust of aggregate demand. The data that we have received since the December meeting have been stronger than expected. As a result, we have revised up our estimates of the growth of PDFP in both the fourth and the first quarters to annual rates of about 2 percent—roughly the same rates as those in the middle two quarters of 2006.

The remaining panels of exhibit 1 highlight some of the indicators that have informed our judgment about the current pace of activity. Starting with the labor market, the middle left panel, increases in private payroll employment averaged 119,000 in the fourth quarter, close to the average pace in the preceding two quarters. As you may remember, at the last FOMC meeting we commented on the stronger signal for activity coming from the labor market compared with the spending data. That tension seems to have been largely resolved, not because of weaker employment but because of stronger spending—especially consumption. Retail sales increased briskly in November and December; accordingly, in this Greenbook, we boosted our estimate of fourth-quarter real PCE growth, the middle right panel, to an annual rate of about 4½ percent. The fundamentals for consumption remain quite solid: steady employment gains, recent declines in energy prices that have raised real income, well-maintained consumer sentiment, and further increases in stock market wealth. That said, at least according to some of our models, the fourth-quarter pace of consumer spending was stronger than would have been consistent with those fundamentals. Our forecast for the growth of real PCE in the first quarter, at 3.6 percent, reflects a bet that some of the surprising fourth-quarter strength will carry forward for a while. Turning to housing, sales of new and existing homes—which are not shown in the exhibit—appear to have stabilized in recent months, and the ratio of new home inventories to sales has moved down a bit. As shown in the bottom left panel, the apparent stabilization of housing demand may now be starting to show through to permits and starts for single-family homes. Of course, the unusually warm weather in December makes a definitive assessment at this time particularly difficult. In the business sector, investment spending slowed appreciably in the fourth quarter. In particular, shipments of nondefense capital goods, the red line in the panel to the right, have been unexpectedly soft recently, including the December figure that we received after publishing the Greenbook. Part of the recent weakness in this category appears to be for purchases of equipment related to construction and motor vehicle manufacturing. With orders remaining above shipments, we expect real equipment spending to rise modestly in the first quarter.

Exhibit 2 takes a closer look at some recent developments, starting with an examination of the effects on the industrial sector coming from the recent sharp declines in the production of light motor vehicles and residential investment. By our reckoning, production of light motor vehicles, the top left panel, tumbled nearly 20 percent at an annual rate in the third quarter of 2006 and dropped further in the fourth quarter. Meanwhile, we estimate that residential investment, shown to the right, plunged at an annual rate of about 20 percent in both the third and the fourth quarters. In thinking about the effects of these developments on industrial

production, we need to keep in mind the upstream effects. As noted in the bulleted items in the middle left panel, the drop in production of light motor vehicles affects IP not only through its direct effect on light motor vehicle manufacturing but also indirectly through its influence on production in upstream industries such as primary metals, tires, and, nowadays, semiconductors. In the case of construction, of course, all the IP effect comes through the influence on upstream industries—lumber, concrete, plumbing fixtures, and so forth. The table to the right shows the estimated effects on IP growth, including upstream effects, associated with the declines in the production of light motor vehicles and residential construction illustrated in the top panels. We have used input-output relationships to estimate the direct and upstream effects and then translated these effects into their IP contributions. Lines 2 and 3 show that, after we account for upstream influences, motor vehicles and residential construction were sizable drags on IP in the third and fourth quarters. Yet, as shown in line 4, the drag from those two sectors was not the whole story. Even so, we think the more likely track from here forward involves modest growth rather than a cumulative weakening of industrial activity, in part because we think that most producers have been moving reasonably promptly to address any emerging inventory problems.

The bottom panels widen the scope from the industrial sector to the economy as a whole and address the question of whether developments in less-cyclical industries have been helping support economic activity. My colleague Stephanie Aaronson divided the establishment survey employment data into three categories—highly cyclical industries, moderately cyclical industries, and acyclical industries—based on the correlation of individual industry employment changes with the GDP gap. The bottom left panel presents some history, with the highly cyclical grouping plotted by the black line and the moderately cyclical plotted in red. To keep the chart easier to read, the acyclical group is not plotted. The chart shows what you might have expected *ex ante*: Fluctuations in both series are highly correlated, but the amplitude of swings in the moderately cyclical is more damped. The panel to the right puts a microscope on the past few years—note the change in scale. As you can see, despite the step-down of employment gains in the highly cyclical industries, employment in the moderately cyclical industries has continued to grow apace. This suggests that the softness we've seen lately in residential construction and some parts of manufacturing has not spilled over to other parts of the economy.

That conclusion is an important factor that has shaped our view about the longer-run outlook for the economy—the subject of exhibit 3. As shown in line 1 of the table in the top panel, later this year the growth rate of real GDP is expected to move back up toward our estimate of the growth rate of potential, and it stays there in 2008. This basic pattern is unchanged from the last Greenbook. The bullets in the middle panel highlight some of the major forces shaping this projection. The most important is our forecast that the restraint from housing will diminish this year and that its contribution to GDP growth will turn slightly positive next year. Second, the recent declines in oil prices, plotted in the bottom left panel, have raised real income; we believe that the drag from the earlier increases in oil prices should dissipate in the

near term, and over time the stimulus from the recent price declines should begin to predominate. Third, federal fiscal policy, the bottom right panel, also is a bit stimulative, although the impetus is projected to ebb over the next two years. Finally, given our conditioning factors, the assumed path of the nominal federal funds rate is consistent with a real funds rate that closes the output gap over time.

Exhibit 4 focuses on the components of PDFP. As I noted earlier, the leveling-off of home sales, the uptrend in mortgage applications, and the improvement in homebuying attitudes suggest that housing demand may be leveling off. The top panel shows the historical relationship between housing demand, as measured here by sales of new homes (the red line), and housing construction, shown here by single-family housing starts (the black line). The shaded areas highlight previous housing downturns as well as the current situation. As you can see, cyclical recoveries in sales and starts have generally been fairly coincident historically. You'll have to take my word for it, but this has been the case even when the inventory of unsold homes has been high. Accordingly, we think that the recent stabilization of sales should be accompanied soon by a stabilization of starts. Then, as sales move up, so should starts. The middle panels focus on the consumption forecast. We expect real PCE, the red bars in the left panel, to increase 2¾ percent this year and next. The forecast reflects two main crosscurrents. On the one hand, real income growth, the blue bars, is projected to be robust, reflecting, in part, continued increases in real wages as well as further employment gains. On the other hand, the wealth-income ratio, plotted by the black line in the panel to the right, falls in our forecast as house prices appreciate only about 1 percent per year. With slower gains in wealth, and spending gradually coming back into line with fundamentals after the current period of unexplained strength, the saving rate should rise.

The bottom panels present some details on the outlook for business fixed investment. As illustrated in the bottom left panel, total real outlays for equipment and software, excluding the volatile transportation equipment component, are projected to increase about 6 percent both this year and next. You can see from the red portion of the bars that the bulk of the support comes from spending for high-tech equipment as telecommunications service providers further expand their fiber optic networks and as businesses continue to invest in information technology equipment and software. We expect the contribution from the other equipment category (the blue portion) to narrow this year and then to edge up in 2008, largely reflecting the pattern of changes in the growth of business output. The bottom right panel shows our forecast for nonresidential structures excluding drilling and mining. The incoming information on construction outlays for nonresidential buildings and the forward-looking indicators that we monitor suggest that spending growth has downshifted. Accordingly, after rising 12¾ percent in 2006, real outlays for this component of nonresidential structures are expected to decelerate to a pace of 5½ percent this year. Our projection for 2008 brings growth in this component of nonresidential structures down to its long-run average. Bill will now continue our presentation.

MR. WASCHER. The top panel of exhibit 5 summarizes our assumptions about the supply side of the economy. As indicated in line 1, we assume that potential output growth will edge down over the forecast period, from 2.7 percent in 2006 to 2.5 percent in 2008. This slowing primarily reflects our assumptions about trend hours growth (line 2), which steps down from about ¾ percent last year to ½ percent in 2008 because of a steepening downward trend in the labor force participation rate and a gradual slowing of population growth. Although we are comfortable with these assumptions—and, indeed, have not made any changes to them in this projection—we do see risks on both sides of our point estimates. For example, as shown in the middle left panel, many outside forecasters are basing their projections on a significantly higher estimate of potential output—in some cases above 3 percent per year. We suspect that these differences, at least in part, reflect different views about the underlying trend in the labor force participation rate.

The participation rate and our estimate of its trend are shown in the middle right panel. As indicated by the black line, labor force participation has risen about ½ percentage point since its trough in early 2005. Some forecasters appear to have taken this increase as a signal of faster labor force growth going forward. However, we see it as largely a cyclical response to steady employment growth and a tighter labor market, and we expect it to be reversed in the near future as the pace of hiring slows and the underlying demographic forces show through. In part, our view reflects the fact that the participation rate tends to rise above its trend when the unemployment rate is low. Periods in which the unemployment rate was below the staff's estimate of the NAIRU are denoted by the yellow shaded areas in the chart, and the current gap between the actual participation rate and our estimate of the trend does not appear to be outsized relative to historical norms. In addition, as shown in the bottom left panel, the increase in the participation rate over the past couple of years has been fueled by a rise in the percentage of individuals who moved directly from out of the labor force to a job; this flow also exhibits noticeable sensitivity to labor market tightness. That said, some groups have behaved differently than our models would have predicted. On the one hand, the participation rate of older individuals, shown by the red line in the bottom right panel, has risen steadily for some time, presenting an upside risk to our forecast. On the other hand, participation among teenagers (the black line) has remained surprisingly low, and there are undoubtedly downside risks to our forecast of an upturn for this segment of the population.

Exhibit 6 describes another source of tension in the recent data that may have implications for our estimate of potential output. As shown in the top left panel, our standard Okun's law simulation (the red line) suggests that the unemployment rate (the black line) fell more last year than would have been expected given our current estimate of real GDP growth in 2006. In the baseline forecast, we assume that an increase in the unemployment rate causes that gap to disappear gradually, an assumption that does not seem unreasonable given that the error in Okun's law at the end of last year was within the bounds of historical experience. However, other interpretations are possible as well. One possibility is that current estimates of real

GDP understate economic growth last year. One piece of evidence in support of this hypothesis is shown in the top right panel. We currently estimate that real gross domestic *income* rose 4 percent in 2006, about ¾ percentage point more than real GDP. As shown by the green line in the top left panel, if we replace real GDP growth with our estimate of real GDI growth over the past year and re-run the Okun's law simulation, the actual unemployment rate in the fourth quarter lines up very closely with its simulated value.

An alternative interpretation of the recent error in Okun's law is that potential output growth was weaker last year than we have assumed—perhaps because of a downshift in structural productivity growth. The middle and bottom panels address this possibility. As shown by the difference between actual productivity growth (the black line in the middle left panel) and a simulation from our standard model (the red line), labor productivity decelerated much more last year than the model would have expected. As shown in the panel to the right, a purely statistical model based on a Kalman filter would have responded to the incoming data since March of last year by cutting its estimate of structural productivity growth by a full percentage point. In contrast, because we place less weight on the recent data that have not yet been through an annual revision, we have reduced our own estimate by only 0.6 percentage point. The bottom panels provide a couple of reasons for our reluctance to lower our estimate of structural productivity growth as much as the statistical model would have lowered it. First, as shown on the left, labor productivity in the nonfinancial corporate sector was quite strong last year. In part, the better performance of productivity in this sector reflects the fact that its output is measured from the income side of the accounts and thus incorporates the difference between GDI and GDP noted above. In addition, this component omits some sectors that are notoriously difficult to measure. Second, as shown on the right, a measure of productivity that excludes the residential construction industry also held up fairly well last year, suggesting that much of the deceleration in nonfarm business productivity may be cyclical. As shown in the middle panel, all told we expect actual labor productivity growth to step back up to an annual rate of about 2½ percent by the middle of this year as businesses reduce the pace of hiring in lagged response to the slower rate of output growth in recent quarters.

The implications of this forecast for the labor market are shown in the top panels of exhibit 7. In particular, gains in nonfarm payroll employment—shown by the black line in the top left panel—are projected to slow to about 60,000 per month by the second half of this year. This pace is somewhat below our estimate of trend employment growth—the red line. As a result, the unemployment rate—shown in the top right panel—drifts up to just under 5 percent, our estimate of the current level of the NAIRU. To help gauge whether the estimated gap between the unemployment rate and the NAIRU is sending an appropriate signal about the degree of tightness in the labor market, I have included some other measures of slack in the remaining panels of this exhibit. As shown in the middle left panel, the job openings rate from the BLS's JOLTS (Job Openings and Labor Turnover Survey) rose over the second half of last year to its highest level since early 2001. Because the job openings rate

has such a short history, its equilibrium level is difficult to estimate. However, we can learn something by combining the openings rate and the unemployment rate to form the Beveridge curve shown to the right. The curve is estimated using data from the first quarter of 2001 through the fourth quarter of 2006, with the openings rate on the vertical axis and the unemployment rate on the horizontal axis. The relationship between job openings and unemployment appears to have been fairly stable in recent years, which suggests that the NAIRU has not changed materially over that period. Moreover, the latest data point is in the far upper left portion of the graph—the segment of the curve indicative of a tight labor market. Two other margins of slack are shown in the lower two panels. The bottom left shows the percentage of employed persons working part time because of slack work at their firm or because they couldn't find a full-time job. This measure has moved down over the past couple of years and is currently below its average level in the second half of 1996—an earlier period when we thought that labor markets were roughly in equilibrium. Also, as shown to the right, the capacity utilization rate in manufacturing remains a little above its long-run average level.

Exhibit 8 presents the inflation outlook. Despite our view that labor and product markets are tight, other influences on our inflation projection have been more favorable than we were expecting at the time of the last Greenbook. Perhaps most notably, the recent data on core consumer prices—shown in the top left panel—have been lower than expected. Core PCE prices were about unchanged in November and, based on the latest CPI reading, we expect an increase of only 0.2 percent in December. As a result, as shown in the second column of the table, we have marked down our estimate of core PCE inflation in the fourth quarter by ½ percentage point, to an annual rate of 2.1 percent. As shown in the top right panel, the lower path of oil prices led us to revise down our projection of consumer energy prices. These lower prices directly pull down our forecast for total PCE prices; they also imply somewhat smaller indirect effects from energy costs on core prices over the forecast period. As shown in the middle left panel, a higher exchange value of the dollar in this forecast led us to reduce the projected path of core nonfuel import prices. The combination of these various influences led us to shave our projection for core PCE prices—line 4 of the middle right panel—by 0.1 percentage point in both 2007 and 2008, to 2.2 percent and 2.0 percent respectively. As before, the slight downward trajectory to core inflation reflects our projections of waning indirect effects of the earlier increases in energy and other commodity prices, declining relative import prices, and a deceleration in shelter costs.

In light of my earlier discussion of the risks to our assumptions about potential output growth, the bottom panels present one alternative simulation from the Greenbook, in which we assume both a higher trend for the labor force participation rate and slower growth in structural productivity. Specifically, we calibrated the simulation so that overall potential output growth was essentially the same as in the baseline forecast, but with structural productivity growth ½ percentage point weaker and trend hours growth ½ percentage point stronger. As shown in the bottom left panel, this change to the composition of potential output growth has little effect on

aggregate activity and the unemployment rate. However, the implications for inflation—the middle panel—are noticeable, with core PCE inflation moving up toward 2½ percent next year because of the effects of lower structural productivity growth on trend unit labor costs. Joe will now continue our presentation.

MR. GAGNON. Your first international exhibit (exhibit 9) covers recent market developments. As shown by the green line in the top left panel, oil prices dropped further this month, bringing the West Texas intermediate spot price back to pre-Katrina levels. The IMF index of nonfuel commodity prices (the red line) was little changed this month after a year of remarkable increases. Readings from futures markets imply a flattening out of nonfuel commodity prices and only a moderate increase in oil prices going forward. The top right panel shows that our real trade-weighted dollar indexes declined on balance last year. In recent weeks the dollar rebounded modestly against the major industrial-country currencies (the red line), but we estimate that it continued to decline in real terms against the currencies of our other important trading partners (the green line). As usual, our forecast calls for a small downward trend from current levels, reflecting our belief that the risk of significant depreciation is slightly greater than the risk of significant appreciation, owing to the unsustainably large U.S. trade deficit. The bottom panels report equity market indexes, with industrial countries shown on the left. The lines are set to equal 100 in March 2000, the previous peak month for the Wilshire 5000. Equity prices have risen broadly across the industrial countries over the past two years and are now just above their March 2000 levels in the United States, the United Kingdom, and Japan, but not in the euro area (the red line). For major emerging markets, on the right, equity indexes are well above March 2000 levels. In Mexico (the blue line), equity prices have more than tripled over this period. In Thailand (the green line), the government's recent attempts to slow capital inflows and relieve upward pressure on the currency have taken their toll on equity prices, but contagion to other emerging equity markets has been minimal. Overall, commodity and financial market developments are consistent with expectations of strong global growth.

Exhibit 10 focuses on financial flows between emerging markets and industrial countries. As shown in the top left panel, the major developing regions have continued the downward trend in their reliance on external borrowing. Fiscal deficits have declined in most countries, and many governments have turned increasingly to local, rather than external, borrowing. The panel to the right shows that yield spreads on dollar-denominated sovereign debt of emerging market countries have dropped to historically low levels.

But emerging markets, in the aggregate, have gone much further than just reducing their borrowing. In recent years, emerging markets have experienced record outflows of official capital (the gold bars in the middle panel). These official outflows are composed of the accumulation of foreign exchange reserves, the servicing and paying down of sovereign debt, and the purchase of foreign assets by government-run investment funds such as the Kuwait Investment Authority. In all the emerging market regions, official capital outflows have recently exceeded current

account surpluses (the blue bars), which are themselves at record levels. For example, the IMF estimates that in 2006, governments in emerging Asia invested on balance $270 billion outside their borders, a sum that greatly exceeds their combined current account surplus of $185 billion. Most of these official flows have taken the form of additions to foreign exchange reserves, as governments have built up war chests against future financial crises and sought to counter upward pressures on their currencies.

The bottom panel looks at these flows from the point of view of the industrial countries, plotting aggregate emerging market net official flows (the gold bars) relative to industrial-country GDP, with negative values denoting net flows into the industrial countries. The statistical accounts do not report the destinations of all these flows, but the available evidence suggests that the overwhelming majority is destined for the industrial countries. Before 2003, net official inflows or outflows from the emerging markets had never exceeded 1 percent of industrial-country GDP. But since 2003, things have changed. Net official outflows from emerging markets are now estimated to equal 2½ percent of the combined GDP of the industrial countries. As shown in the panel, the timing of this unprecedented increase in net official flows corresponds well with the puzzling decline in real short-term interest rates in the industrial countries (the green line) that persisted long after industrial-country GDP growth (the purple line) rebounded from the slowdown early in this decade. The evidence suggests that aggregate policy-driven capital flows from the emerging markets may be an important factor behind low real interest rates in the industrial countries. Moreover, low real rates are not limited to short-maturity instruments.

The top panels of exhibit 11 show that ten-year indexed bond yields are also low and have been for several years in the major industrial countries. These rates have ticked up over the past month or two, but only by a small amount. Long-term inflation compensation (shown in the middle row of panels) remains contained. Indeed, in Japan and Canada (the two panels on the right) inflation compensation has moved down in recent months. In the euro area and the United Kingdom (the two panels on the left), where inflation compensation lingers above policymakers' targets, we project modest additional policy tightening early this year, shown in the bottom row of panels.

Despite recent and expected future inflation rates close to zero, the Bank of Japan seems poised to tighten gradually over the next two years. In Canada, policy is expected to remain on hold. If these projections prove to be the peak policy rates for this cycle, they will be the lowest cyclical peaks for short-term interest rates in these countries for at least forty years. Nevertheless, we judge that these policy stances are likely to be consistent with low and stable inflation this year and next. The large capital inflows and low real interest rates in the industrial countries have contributed to rising housing prices in many of these countries. Higher home prices in turn have stimulated housing construction. The top panel of exhibit 12 shows that the extent and timing of the house-price boom differs markedly across countries. The Netherlands (the blue line) was one of the leaders of the global housing boom, with

prices rising continuously since the early 1990s, though at much slower rates in recent years. Japan (the green line), on the other hand, is a notable exception to the trend of rising house prices in recent years, reflecting the lingering effects of the bursting of the 1980s asset bubble and Japan's extended economic slump. The middle panels focus on two countries that experienced strong house-price increases (the purple lines) early in this decade but where house-price increases subsequently halted, at least temporarily. In both Australia and the United Kingdom, as in the United States, residential investment (the green lines) responded positively to higher house prices. In Australia, on the left, real house prices have been flat for the past three years, and residential investment has declined gradually about 1 percentage point of GDP, though it remains above its historical average. In the United Kingdom, on the right, house prices stabilized in 2005 and picked up again modestly last year. Despite lower house-price inflation, residential investment has continued to rise toward historically high levels. The relevance of these foreign experiences for the United States is difficult to gauge, but they provide some support for Larry's forecast that the downturn in U.S. housing is nearly over.

In light of the signals from financial and commodity markets, as well as other real-side indicators, we project continued solid growth in the foreign economies at rates that are not likely to strain resources or to put upward pressure on inflation. As shown in the bottom panel, total foreign growth (line 1) is estimated to have stepped down last year from 4½ percent in the first half to about 3½ percent in the second half, and it is projected to remain around 3½ percent over the forecast period. This projection is about 1 percentage point stronger than the staff's projection for U.S. growth, shown at the bottom of the panel. The foreign industrial economies (line 2) overall are projected to grow at about the same rate as the United States, Japan a bit slower (line 4), and Canada a bit faster (line 5). The emerging market economies (line 6) are projected to grow at nearly twice the pace of the industrial economies over the forecast period. We expect that emerging Asia (line 7) will continue to grow very rapidly and that Latin America (line 8) will grow at a solid, though not exceptional, rate. Our forecast assumes that the Chinese government will take additional measures if necessary to reduce the growth rate of investment, and we project that Chinese GDP growth will be slower this year than last. But the risks to our growth forecast for China are probably greater on the upside.

Exhibit 13 provides an assessment of what all these foreign influences mean for the U.S. economy. Overall import prices, the black line in the top left panel, fell sharply last quarter and are projected to continue to fall in the current quarter, primarily owing to the drop in the price of imported oil. As oil prices stop falling and begin to move gradually back up, overall import price inflation should turn positive. Prices of imported core goods (the red line), which exclude oil, gas, computers, and semiconductors, rose at a rate of nearly 4 percent in the middle of last year, primarily owing to sharply higher prices of nonfuel commodities. With commodity prices projected to stabilize and with only a small depreciation of the dollar in our forecast, prices of imported core goods should increase at a subdued pace over the next two years.

The contributions of exports and imports to U.S. GDP growth are shown in the lower panel. We now estimate that the external sector made a positive arithmetic contribution to growth last year, the first positive annual contribution since 1995. Import growth stepped down from previous years as U.S. GDP grew more slowly. Export growth benefited from robust foreign economic activity, but exports turned out even stronger than our models project. Line 1 in the top right panel shows that, for the first eleven months of last year at an annual rate, exports of goods grew 10½ percent from the previous year in real terms. Lines 2 through 4 show that three categories of capital goods—aircraft, machinery, and semiconductors—contributed nearly half of total export growth. Although it is possible that blistering growth rates in exports of these goods may continue, we base our forecast on a return of export growth to a rate more consistent with historical relationships. With the vast majority of aircraft production being exported in recent months and with aircraft factories running at high utilization rates, further large increases in exports from this sector, at least, do not seem likely.

Returning to the bottom panel, we project that the negative arithmetic contribution of imports (the red bars) to GDP growth will outweigh the export contribution (the blue bars) in 2007 and 2008 by about ¼ percentage point (the black line). This projection is driven by the historical tendency of U.S. imports to grow at a much faster rate than U.S. GDP. In addition, the larger value of imports relative to exports means that, even if imports and exports were to grow at the same rate, the negative contribution of imports would be greater than the positive contribution of exports. The projected strong growth rates of foreign GDP, discussed in your previous exhibit, are not large enough to outweigh these factors over the next two years. On balance, relative prices have little effect on net exports over the forecast period, as the real trade-weighted dollar has moved in a relatively narrow range over the past couple years and is not projected to move substantially over the forecast period. And now Larry will complete our presentation.

MR. SLIFMAN. The final exhibit presents your forecasts for 2007 and 2008. I'll be mercifully brief. The central tendency shows real GDP increasing 2½ to 3 percent this year and roughly the same next year, with the unemployment rate holding in the range of 4½ to 4¾ percent during both years. The central tendency of your projections sees the core inflation rate falling ¼ percentage point over the next two years. That concludes our prepared remarks, Mr. Chairman. I'll be happy to take your questions.

CHAIRMAN BERNANKE. Thank you. That was very interesting. I have a couple of questions about your counterfactuals. In exhibit 6, you look at the simulated rate of unemployment, assuming that gross domestic income is the true measure of output, and you find that unemployment fits Okun's law. But then below you also use GDI to measure productivity.

You're not doing the same thing in both simulations, right? If you assume that GDI measures output and use it to calculate both Okun's law and productivity, I think the puzzle comes back. I think you just increased potential output, and you're back to where you started.

MR. WASCHER. That's right. The potential output measures are based on a GDP concept, and productivity in the nonfarm business sector is the measure of structural productivity that we're using for potential GDP. The upper panel is just to illustrate what might happen if, for example, the real GDP numbers for last year were revised up to show the same growth rate that GDI shows now.

CHAIRMAN BERNANKE. Okay. The other question is about exhibit 8, where you consider a simulation with a decline in productivity and an increase in labor participation and you get a higher rate of core inflation. In that simulation, the decrease in productivity and the increase in participation offset each other, on both the aggregate demand side and the aggregate supply side, and the result is, of course, that the unemployment rate doesn't change so that demand-supply balance is unchanged. I assume the reason you get inflation is that nominal wages are sticky, and therefore, as productivity slows, labor costs go up and firms can push them through. I guess I would question whether that's realistic, for two reasons. One is that this increase in unit labor costs is clearly temporary, and I think we tend to believe that longer increases are needed to affect pricing. The other reason is that with the demand-supply balance unchanged, why would firms be able to pass through those costs in this scenario when they couldn't raise prices absent that increase in unit labor costs?

MR. WASCHER. Well, real wages wouldn't be different, but the adjustment could come either through flexible nominal wages or faster increases in prices. In the FRB/US model, which

is used to generate these simulations, trend unit labor costs do cause an increase in the rate of price inflation, which is what you see here, and that helps equilibrate the labor market.

MR. STOCKTON. For a given level of resource utilization, you're getting more cost pressures, and you're getting more upward pressure on prices. So it's not a matter of their absorbing all of it in their profit margins when they've got that increase in costs. You're absolutely right. In our basic framework, we don't think that actual year-to-year unit labor costs influence overall price setting. It is in some sense a trend unit labor cost measure, and that actually was incorporated in FRB/US through a moving average or a set of lags. So there is still some upward pressure on trend unit labor costs coming about through the slower productivity growth, some of which in essence would be perceived to be lower trend productivity.

CHAIRMAN BERNANKE. You also have to assume that the Fed accommodates with increased nominal GDP growth as well.

MR. STOCKTON. Correct.

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

MR. FISHER. Just to follow up on your point and go to exhibit 12, about foreign GDP growth rates, which Joe talked about. In terms of any pressures on unit labor costs that you see developing, I didn't quite catch your statement, or I may have misinterpreted it, but basically I thought I heard that these growth rates are not likely to lead the inflationary pressures.

MR. GAGNON. That's correct.

MR. FISHER. So I would be curious as to what your observation is in terms of trend unit labor costs in our important trading partners.

MR. GAGNON. Actually, I'm not sure of the answer about unit labor costs per se, but these growth rates are close to what we think these countries can sustain without exceeding their capacity limit.

MR. FISHER. So it's a gap analysis.

MR. GAGNON. They are close to what we think their potential rates are, and they don't seem to be above or below their potential rates by very much in the aggregate. There are a few exceptions, of course—Argentina, perhaps, and Venezuela.

MR. FISHER. Thank you.

CHAIRMAN BERNANKE. President Stern.

MR. STERN. I want to see if I understood something you said that pertained to exhibit 13. I think you said that U.S. exports were stronger than expected—stronger than the models would have predicted in '06—even though growth abroad turned out to be quite strong. Is that right?

MR. GAGNON. Yes.

MR. STERN. By about what order of magnitude? I'm just trying to determine whether this was really significant or we're talking about a tenth or two.

MR. GAGNON. Well, the export contribution to GDP growth last year was about ⅓ percent, and I would have to check, but I'm guessing that it might have still been zero if we hadn't had this surprise. It would have been close to zero. I can check on that.

MR. STERN. Well, you can let me know later.

MR. KOHN. May I follow up on that?

CHAIRMAN BERNANKE. Governor Kohn.

MR. KOHN. On the same chart, Joe, I was wondering whether there is any evidence that the foreign demand for our exports, that elasticity, is coming into closer alignment with our demand for imports. That difference has really been driving the trade imbalance, and I was looking for little clues that this wasn't all special factors, that maybe they're catching up to us in their appetites for imports.

MR. GAGNON. This topic is actually close to my heart in terms of research, and I wish I could say it was so and maybe it will be so. [Laughter] I thought it was so around 2000, when we had really strong exports we couldn't explain, and then it all went away with the recession of 2001-02, and it's only now coming back. But I looked at a lot of other countries, and it does seem that you can explain these differences between export and import elasticities based on potential growth rates. The one country that seems to fit the worst is the United States, and I have never understood why the most important country is the one that doesn't fit. I won't go into details, but there are theoretical reasons to believe that, indeed, you shouldn't expect such elasticities to be structurally different.

CHAIRMAN BERNANKE. Vice Chairman Geithner.

VICE CHAIRMAN GEITHNER. I have two questions. The first is about our inflation forecast. We've discussed several times the basic question about whether the now-prevailing level of long-term inflation expectations in markets is likely to provide support for forecasts of further moderation or likely to constrain the prospects for further moderation in core inflation. My recollection of that discussion, although a little hazy, is that expectations might be a bit of a constraint. Am I right in my recollection? Has your view on that changed?

MR. STOCKTON. Well, your recollection is correct, I think. That was probably just a hazy answer, not a hazy memory on your part. In some sense our basic view is that getting to

2 percent is the gravitational constant that we currently see. We haven’t really seen any evidence to suggest any significant shift in that view in recent months. Something below that number, on a sustained basis, is harder for us to see. In some sense, implicit in this forecast is that, at the end of 2008 and into an extended Greenbook forecast, we get 2 percent without creating an output gap that would actually drag things down further. Then the question is how quick the dynamics might be to take you to 2 percent. The view in our forecast is that the movement would be slow over the next two years. But one could imagine a faster adjustment, especially if it were aided by a stronger dollar and by weaker oil prices. So there are reasons for thinking that the adjustment would be faster, but it’s also possible that some of the recent incoming data have given us a bit of a head fake. Maybe we’re not quite as far along in the process of getting back to 2 percent, and maybe we’re too optimistic in that regard.

VICE CHAIRMAN GEITHNER. This is a different question for Joe. Your exhibit 10 describes broad trends in net official capital flows from emerging markets to the United States and global real interest rates. Has your view about the relationship between them changed? I thought we had sort of the conventional view. The accepted view within the System was a little skeptical that there was much of an effect, and I didn’t think the research that looked at the relationship between these two things suggested that the effect was that large. Has your view about that changed, or is this exhibit consistent with it?

MR. GAGNON. The relationship between the official flows and the current account surpluses?

VICE CHAIRMAN GEITHNER. No, between official flows and global—really industrial-country—real interest rates.

MR. GAGNON. People often talk about China's reserve accumulation affecting U.S. interest rates, but they are only two countries in a big world and you may think that the United States, Europe, and Japan have relatively open financial markets with a lot of mobility. If you look at all the industrial countries together and the flows to all of them together, however, maybe there's less mobility between the industrial countries as a group and the emerging markets as a group. That might be more believable. That—along with the fact that these flows are big, even when you distribute them over all the industrial countries—is what makes me think that there may be an effect. That may raise a doubt in your mind. It's not just to the United States or just to Europe; it is in the aggregate.

To answer President Stern, it looks to me—and I'll double check with our experts—as though, according to our forecast, our model would have predicted negative real net exports last year. So all the growth is a surprise.

CHAIRMAN BERNANKE. President Minehan.

MS. MINEHAN. Just to clarify the response—overpredicted what?

MR. GAGNON. The positive contribution from net exports last year, about ⅓ percentage point, is entirely a surprise. In fact, it would have been negative, if I am reading our model correctly.

MS. MINEHAN. So it was an upward surprise in terms of what your model would have predicted.

MR. GAGNON. Yes.

MS. MINEHAN. I'm interested in the risks you see around the GDP growth rate in your forecast. I note a couple of things. First, some of the growth rate depends upon consumers getting the message that they really ought to be saving for the future instead of spending as they have been.

I wonder why they'd do that this year if they didn't do it last year. Second, I notice that, if you compare the Greenbook GDP forecast with the central tendency of the members of the Committee, growth is a good deal slower—0.3 or 0.4 slower, which in this realm is a lot. I'm interested in how you see the upside risk to this, particularly given that, even with your slower growth rate, you get to zero output gap relatively quickly.

MR. SLIFMAN. Let me first comment specifically on our consumption forecast and the larger question that we raised. Dave may want to add some comments. With regard to our consumption forecast, as I had mentioned and as we suggested by the alternative simulation that we showed in Part 1 of the Greenbook, clearly the unexplained strength that we've been seeing in consumption spending in the second, third, and fourth quarters is an upside risk to the forecast. We've carried some of that through into 2007, as we noted in the Greenbook and I noted in my briefing, and we think that it will eventually correct. We base that forecast just on the historical patterns in the data. In the past when spending had gotten out of line with what we think of as being the fundamentals for consumption, it eventually corrected over time. There are a couple of possibilities. One is that we've got the timing wrong and that the correction is going to take longer, in which case there would be more consumption. Another possibility—and this goes back to the point Bill made—is that we could be wrong with regard to income growth. That might be revised up, and we will find that a lot more income growth is out there. Now, taking our forecast rather than the alternative simulations at face value—yes, we are slower than the FOMC. I suspect that part of the reason may be that the staff has a lower estimate of potential output growth than most members of the Committee probably have in their minds; we can't know for sure, but I suspect that it probably goes a good way toward explaining the difference.

MS. MINEHAN. You've got seven alternative scenarios there, if I recall correctly

MR. SLIFMAN. We were busy.

MS. MINEHAN. Yes, you were. All kudos to you guys. Four of the simulations have slower GDP, higher unemployment, and a lower fed funds rate. In a couple of cases you had, even in the context of slower growth and higher unemployment, somewhat higher inflation. Then you have three or so that show stronger paths. I'm wondering, do you weight these alternative scenarios equally? You know how DRI (DRI is the wrong name now, but I mean the successor company) does it: They give their baseline forecast a certain rate of probability, and then they give alternative rates of probability to the various scenarios. Do you have a sense of that? Would you weight the stronger consumption scenario somewhat higher than the rest or no?

MR. SLIFMAN. I don't think so. Personally, I could think of equally plausible reasons that we could get stronger aggregate demand growth or somewhat weaker aggregate demand growth over the next year. We highlighted one possibility in the Greenbook with regard to the weaker investment scenario. Another could be the housing forecast: Housing could turn out to be weaker than we're forecasting. So, on the aggregate demand side, I'd give them equal weighting. With regard to the aggregate supply side, I suspect there, too, the weighting probably is equal. It's a little harder for me to judge. I don't know whether Bill wants to add something.

MR. WASCHER. I think that's probably right.

MR. STOCKTON. At the time of the last FOMC meeting, we were feeling as though the incoming spending data were coming in pretty darn close to our expectations and were pretty consistent with our story about entering a period of below-trend growth. As we noted, and President Moskow quizzed us about, the big fly in the ointment with respect to our story was the labor market and its ongoing strength. Since then, as Larry noted, the spending data have moved toward the labor market data rather than the labor market data moving toward the spending data.

The developments have certainly brought into sharper focus the upside risk associated with buoyant consumer spending. If we made an important policy-magnitude type error, it might be that the third quarter was just a period of low measured GDP growth but basically we haven't moved much below trend. I think that you would need to take that risk very seriously as you thought about the current setting of policy.

There are some critical reasons for remaining patient about whether, in fact, we have or have not moved below trend. I think that we still haven't seen the full effects of the housing shock that we had in the second half of 2006. I suspect that we are going to see more of the employment effects associated with that going forward. I don't think that we've seen the full multiplier accelerator effects of that, and we certainly haven't seen, if our estimated econometric models are anywhere close to right, the lagged effects of the slowing house prices and consumer wealth that we think will be part of the reason for motivating a higher saving rate. So we've raised the forecast, and we've raised it significantly, but I don't think we're yet surrendering the notion that this current setting of policy can produce a period of modestly below trend growth. Now, I think that the upside risk continues to be the labor market strength.

As Larry said, even given the overall dimensions of the housing shock, we've been encouraged about our story of stabilization. But I remember that, as we went into the investment shock earlier in this decade, we just didn't have enough imagination about how bad things could get, and we kept thinking that we were seeing signs of slowing or stabilization, that the new technology was still great, and that there should be reasons or underlying motivation for investment. Perhaps what we've seen recently as stabilization are the beneficial effects of the drop in long-term interest rates that occurred from last summer into the fall and pulled some people forward, but really we may not have fully made the adjustment yet. The overhang of unsold homes out there is very

large, and we could be underestimating the size and duration of that. So even given the recent stronger data on spending, I still don't see all the risks on that side of things. I still think there are some significant downside risks that you ought to be at least concerned about.

MS. MINEHAN. Thank you.

CHAIRMAN BERNANKE. President Moskow.

MR. MOSKOW. Thank you, Mr. Chairman. I just want to follow up on Vice Chairman Geithner's first question—on inflation. It seems to me that most of the factors that are leading to lower inflation in this forecast period are temporary—energy prices, owners' equivalent rent, and import prices. The longer-term factors are the pressures in the labor market that we've talked about and maybe some follow-through from the earlier accommodative financial conditions that we've had. As you said, chart 6 of the Bluebook, when you look past the forecast period, doesn't show inflation coming down. Inflation actually goes up a bit with both the 1½ percent target and the 2 percent target. Doesn't this mean that expectations have moved up a bit when you see inflation go up in '09 and beyond?

MR. STOCKTON. Many of the factors that you're citing as temporary on the downside regarding inflation we see as having been temporary on the upside regarding inflation as well. The higher energy prices and the pickup in import commodity prices were some factors explaining how we got above 2 percent, and their dissipation is principally the reason that we go back to 2. Now, for the extended Greenbook scenario that we show in the Bluebook, one reason for the upward pressure on inflation beyond the near term is that part of the construction of that forecast is an assumed 3 percent depreciation of the dollar that has to go on almost forever. So we have built in some upward pressure on inflation. We have to do that in the model simply to begin making some progress on the external balance. Whether that happens in 2009, in 2015, or tomorrow would be

hard to say, but it is one reason that the pickup is not principally the dissipation of the temporarily good factors. It's really more of that built-in dollar-depreciation effect.

MR. MOSKOW. So that's a key variable.

MR. STOCKTON. To go back to what I said to the Vice Chairman, implicit in that long-run scenario is a 2 percent inflation expectation that is sort of pegging inflation. Obviously we could be seriously wrong about that. We could also be seriously wrong about the degree of resource utilization in the economy right now. That 2 percent comes about because we don't have a big positive or negative output gap either now or going forward. If the NAIRU is more like 4½ percent, then you might, in fact, make some progress in long-run inflation expectations. If the economy slows, you push the unemployment rate to 5 percent, and you get a bit of output gap, then you might get some good behavior there. Another issue with which I know you've been grappling is that headline inflation has been high in recent years. If that condition were to persist, it could lead to some deterioration in inflation expectations that might raise us from 2 to something above 2 going forward. We haven't seen the evidence of that in measures of inflation expectations either from surveys or from financial markets, but that's something we're watching to see whether or not our story is right.

MR. MOSKOW. Thank you.

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. Thank you. I have a question that is related to this issue, but it comes out of the Bluebook. I think I understand how this model is working, but then I get a surprise, and I realize I really don't understand how it works. I noticed in the Bluebook that there was a jump of 50 basis points in the Greenbook-consistent estimate of the real funds rate. At the same time in the model and the simulations, you keep the fed funds rate constant, which would be slightly below

what that Greenbook real rate might suggest. The unemployment rate remains somewhat below your NAIRU estimate, and yet you still have inflation modestly declining. I'm trying to figure out how that works. Is there something that I'm not understanding, or can you clarify the mechanism by which those things fit together?

MR. STOCKTON. Well, I can speak to the Greenbook-consistent measure, and perhaps Vincent will want to talk a bit about the simulations of the Bluebook. One thing that you have to keep in mind is that the Greenbook-consistent measure of R* is the level of a real interest rate that would be required for the output gap to return to zero in twelve quarters. In some sense, given that is what's built into the Greenbook forecast, the current level of the real interest rate is delivering that particular outcome. It's not that we have those longer-run estimates of R*, which are, in essence, the monetary policy that is assumed to return the economy to equilibrium over the next three years and then beyond that to stabilize the economy. That's a different construction. The Greenbook-consistent R* is answering a very specific question that is of limited value. Those longer-run simulations give you a clearer picture of where we think real interest rates would have to be to equilibrate the economy over the longer haul, not just over the short run.

MR. REINHART. The 0.5 percentage point increase in the Greenbook-consistent R* is really due to a collection of factors. In the model, the estimated bond premiums come down a little, and the equity premium came down over the intermeeting period. That just means you need a higher real interest rate to get the same level of policy restraint. Also, they take the model and force in the errors to get the Greenbook simulation. Effectively the model is less enthusiastic about the economy than the Greenbook, and so the model errors tend to raise R*. As to why inflation is coming down, we do have the lagged effects of the drop in energy prices, inflation expectations are contained, and the output gap is closing.

CHAIRMAN BERNANKE. Other questions? President Lacker.

MR. LACKER. I'll follow up on the question of Vice Chairman Geithner and President Moskow about the gravitational point of 2.0 percent. I remember asking you about the NAIRU and getting a response that suggested I should think of a cloud of probabilities surrounding that estimate. I'm essentially asking you for your characterization of the cloud you have in your mind around the idea that 2 percent is the number to which core inflation is going to have some gravitational pull. What comes to mind here is that Vince told us several meetings ago that 2 to 2½ on core PCE inflation was the range that he thought expectations were lying in, and TIPS numbers and survey numbers haven't come down much since then as I recall. I am also interested in your commentary on the kind of technical adjustment factor that traverses the CPI, which the TIPS are based on, and the core. When you plot that, it moves around a lot. So I'm wondering whether you have sharp views about that going forward or how you'd characterize your uncertainty about that factor in helping us understand what the TIPS spreads imply about gravitational points.

MR. STOCKTON. I'm not sure I have an empirically based response. We can actually estimate from the model a confidence interval around a parameter estimate of the NAIRU, which as I indicated, is wide; but I don't have a similar thing for inflation expectations. However, I would argue that, if you just look at the confidence intervals around inflation forecasts over the longer haul, they are pretty wide. Obviously you control inflation over the longer haul. If you would tell me what your tolerance is for five years from now, given our ability on a year-to-year basis to forecast inflation, plus or minus 1 percentage point, actual inflation would fall plus or minus 1 percentage point around whatever you tell me your longer-run inflation objective would be. In terms of the measures that we look at—and I think those probably have not changed much since Vincent presented them in the Bluebook a while back—0.5 percentage point is just on the difference

in the measures alone; it is not actually a measure of uncertainty around any individual measure. So it's wide. I don't know if you would want to add a confidence interval around that.

MR. REINHART. The intervals are, no doubt, wide. In the materials we sent to you in October, when you were talking about your inflation goal, a staff memorandum looked at the gap between the CPI and the PCE price index. From 1994 to 2004, the minimum is minus 0.2, and the maximum is 1.2. They do move around. We found in the regressions that we reported in the Bluebook box that they're not very precise at all. The standard errors were quite large. So I think the answer is that we don't have a measure of inflation expectations that we could put much confidence in.

CHAIRMAN BERNANKE. Seeing that there are no further questions, I propose that we start the economic go-round. Remember, we do have the two-handed option if anyone cares to exercise it. President Yellen.

MS. YELLEN. Thank you, Mr. Chairman. Recent data on economic activity have been loaded with upside surprises for most spending categories and also for labor markets. Our response, like the Greenbook, has been to boost our estimate of growth last quarter and our forecast for growth this quarter. For 2007 as a whole, we have revised up our projection for real GDP growth about ¼ percentage point, to about 2¾ percent, which is just a bit below our estimate of the trend, which is a bit higher than the Greenbook. This performance continues to reflect the so-called bimodal economy with weakness in housing and autos coupled with strength almost everywhere else.

Looking beyond the first quarter, we interpret recent data as suggesting that the drag from both weak sectors is likely to diminish, providing impetus for an acceleration of activity later this year. Even so, the Greenbook forecasts, and we agree, that other factors will likely offset this

acceleration so that GDP will grow slightly below trend in 2007. In particular, the Greenbook hypothesizes that the growth of consumer spending will slow, with the saving rate rising from minus ¾ percent at the end of last year to plus 1 percent at the end of next year. This forecast strikes us as quite reasonable. House-price appreciation has slowed dramatically, and the impetus it has given consumption should diminish over time. In addition, the Greenbook notes, and Larry emphasized, that consumer spending has grown more rapidly than fundamentals can explain, and it's sensible to predict some unwinding of this pattern. Such an outcome, however, would represent a noticeable change in the trend of the saving rate. So to me the possibility that the saving rate will not, in fact, rebound to the extent anticipated in the Greenbook constitutes a serious upside risk to the outlook. Of course, the staff has emphasized this.

An alternative simulation in the Greenbook illustrates that if spending instead advances in line with income, the unemployment rate would decline noticeably further from a level that is already low. It is precisely because we are starting from a situation in which labor markets are already arguably tight that the upward revisions to growth during the intermeeting period particularly concern me. Some period of below-trend growth may ultimately be necessary to address inflationary pressures emanating from the labor market.

In December, I emphasized the puzzle presented by the combination of an apparently sluggish economy and a robust job market. Upward revisions to estimated growth in the fourth and first quarters resolve a portion of that discrepancy. Even so, Okun's law still suggests that the excess demand in labor markets as reflected in the low unemployment rate is abnormally large relative to that in goods markets as reflected in estimates of the output gap. The current low unemployment rate may turn out to have benign implications for inflation. For example, labor market tightness may well diminish somewhat over time, given that the lags between output growth

and labor market adjustments can be quite variable. Another benign possibility is that the unemployment rate may be overstating the tightness of labor markets. For example, some indicators of labor market conditions, like the Conference Board index for job market perceptions, suggest a bit of softening. Indeed, available indexes of labor compensation do not provide compelling evidence of cost pressures emanating from the labor market. However, compensation data are mixed, and I must admit that the signal from them is somewhat confusing.

While I remain concerned about the risk that labor market pressures could boost inflation over time, I'm still fairly optimistic about the outlook for inflation overall. Core inflation has come down in recent months, which is welcome, although we must be careful not to overreact. Recent favorable data could reflect the dissipation of pressures from energy prices and owners' equivalent rent; these sources of disinflation are inherently transitory, and once they are fully worked through the system, we will be left with the influence of more-enduring factors, such as the extent of excess demand or supply in labor and product markets. If these markets are, in fact, unduly tight, we could eventually see rising inflation. Inflation expectations also matter for the inflation outlook, and I see the stability of inflation expectations as contributing to a favorable inflation prognosis. As I previously mentioned, my staff and other researchers find some evidence that inflation has become less persistent over the past decade, a period during which inflation and inflation expectations have been low and stable. Both survey and market-based estimates suggest that longer-term inflation expectations remain stable and well anchored.

So to sum up, I continue to view a soft landing with moderating inflation as my best-guess forecast, conditional on maintaining the current stance of policy. We expect core PCE price inflation to edge down from 2¼ percent last year to about 2 percent in 2007. While there are risks on both sides of the outlook for growth, I'm a little more focused on the upside risks after the recent

spate of strong data. It's encouraging that the recent inflation news has been good. However, there's a great deal of uncertainty about inflation going forward, and to me these risks remain biased to the high side.

CHAIRMAN BERNANKE. Thank you. President Moskow.

MR. MOSKOW. Thank you. Mr. Chairman, some of my colleagues have told me they expected me to brag today because both teams in the Super Bowl are from the Seventh Federal Reserve District, but I assured them I would not do that. [Laughter]

CHAIRMAN BERNANKE. I notice that they're not playing in the Seventh Federal Reserve District, though. [Laughter]

MR. MOSKOW. Some day we'll have the Super Bowl at the Seventh Federal Reserve District. But turning to the business at hand, business activity in our District continues to expand at a somewhat modest pace, but the tone of my business contacts was more positive than at our last meeting. Manufacturing activity in the District is currently a bit soft. The Chicago purchasing managers' index fell from 51.6 in December to 48.8 in January, and this number will be released tomorrow morning.

Many of my contacts are expecting a significant pickup in activity in the second half of the year. We heard this from manufacturers of building materials, agricultural equipment, construction machinery, autos and steel, temporary-help firms, and even from several retailers. Though a number of manufacturers thought that the recent softness was temporary and reflected the need to work off some modest inventory buildups, they said the final demand for their products remains solid. The steel industry is a good example of this kind of dynamic. Industry production has fallen sharply since the summer; but when I recently talked to the head of a major steel company, he noted that demand from end users had remained quite stable, and he expected it to stay that way. The

production cutbacks were mainly the result of inventory fluctuations at the service centers, which buy bulk quantities of steel to process and distribute to final customers. The analysts in the industry are divided on when this inventory correction will be complete, but even the pessimists think that it will be done by late spring. With the steady demand from end-use customers, my contact thought that production and prices would definitely be rising by the second half of the year. There was an article in the paper today that mentioned that Nucor is trying to raise prices by $20 a ton in March. My auto contacts had mixed views about 2007. Last year was especially tough for the Big Three. High gas prices shifted sales from SUVs to cars, and then the mix of sales shifted from retail toward fleet sales, where their margins are lower. GM thought that gas prices probably have fallen enough to stabilize the market share of light trucks and that retail sales were now down near their long-term trend levels. Ford was not as sanguine about either of these developments. Finally, the strength of foreign demand and the weaker dollar seem to be showing through to increased export demand for a number of our District's manufacturers, and this situation supports the comments in the chart show.

The national economy is clearly showing more underlying strength than we thought in December. Moreover, the downside-risk scenarios now seem less likely. The housing markets look to be nearing the bottom, and the spillover to other sectors now seems likely to be minor or is being offset by other positive factors. Importantly, tight labor markets and lower energy prices are boosting consumer spending. We continue to expect that growth will be modestly below potential in the first half of the year, but like my business contacts, we expect activity to pick up in the second half and growth to be a touch above potential by 2008. Unlike the Greenbook, this projection is conditioned on market expectations for interest rates, which impart some degree of accommodation next year. So currently I see the risks to the growth forecast as being fairly well balanced. On the

downside, we could be wrong about the stabilization in housing, and on the upside, consumer spending could remain robust or demand from abroad could accelerate.

Overall, the recent data on inflation have been positive. As a result, the forecasts from our inflation models are lower by a tenth or two. The models estimated using data only since 1984 predict that core PCE inflation will be flat at 2.3 percent through 2008. So I'm less optimistic about inflation than the Greenbook. In my mind, there are two key questions concerning the inflation outlook. First, what happens in 2009 and beyond? As we were discussing before, in chart 6 in the Bluebook, for whatever reason, inflation is moving up, and I think that's a concern. Second, there's the issue of longer-run inflation expectations. In the Greenbook forecast, by the end of '07, inflation would have been at or above 2¼ percent for a year and a half with no change in the fed funds rate and a reasonably strong economic environment. I think markets might interpret this inaction as a signal that we're satisfied with 2¼ percent inflation, not the 1 percent to 2 percent comfort zone that many of us have said we prefer. This view was shared by the participants at our recent gathering of academic and business economists—we have an advisory committee that meets a few times a year. Indeed, several academics thought we were already at this point. In their minds, the current policy stance and inflation picture revealed that we were satisfied with inflation stabilizing at or a bit above 2 percent. The business economists also were predicting that we would find ourselves in the position of needing to increase rates some time this year in order to put inflation on a pronounced downward path.

CHAIRMAN BERNANKE. Thank you. President Stern.

MR. STERN. Thank you, Mr. Chairman. Trends evident in the District economy for some time fundamentally are continuing. Specifically, employment is increasing moderately and steadily. Most components of aggregate demand are expanding, and I would note, in particular, strength in

nonresidential construction. There has been no significant acceleration of inflationary pressures or of wage pressures. The housing sector is subdued, but the District data on sales and starts suggest stabilization, as do the national data. The data on the inventory of unsold homes perhaps are contradictory to that statement because there are still a lot of unsold properties; at least those data suggest that it will be some time before there is any pickup in housing activity. In any event, as Bill Dudley mentioned, mortgage delinquencies and foreclosures are rising, albeit starting from a fairly low level, and though that probably won't have a significant effect on economic performance, it could be a political issue in Minnesota and elsewhere in the District.

As far as the national economy is concerned, it seems to me that the incoming data over the past several months underscore a couple of things. First, the data demonstrate, again, the underlying resilience of the economy. Second, they bolster the case for sustained growth over the next year or more, accompanied by steady to diminishing core inflation. Let me elaborate briefly on those observations. The economy apparently grew better than 3 percent in real terms again last year, despite the significant run-up in energy prices, the appreciable decline in housing activity, and problems in the domestic auto industry. As I think about the prospects for '07, I see little in the broad scheme of things to suggest that overall real growth over the next year will be much different from that over the past year or, for that matter, much different from that experience from '03 through '05. It also seems to me that our earlier concerns about the possibility of a further acceleration of core inflation have diminished, largely on the basis of the incoming information on inflation, thereby through the process of elimination heightening the outlook for steady to declining core inflation. I actually think that case is pretty good, partly because some of the factors that boosted core inflation were transitory and partly because inflation expectations, as best I can judge, have remained well anchored. That's the message I get, at least from financial markets, from labor

markets, and from conversations with our directors, other business people, and so forth. So for me, overall the near-term to medium-term outlook both for real growth and for inflation is constructive. I'll stop there.

CHAIRMAN BERNANKE. Thank you. President Minehan.

MS. MINEHAN. Thank you very much, Mr. Chairman. The New England regional economy continues to grow at a moderate pace with relatively slow job growth, low unemployment, and moderating measured price trends. Consumer and business confidence is solid, and while retail contacts reported an uneven holiday season, manufacturers were generally upbeat about business prospects. Skilled labor continues to be in short supply and expensive. In every one of the New England states, there is concern over the long-run prospects for labor force growth, given their mutual low rates of natural increase, out-migration of 25 to 34 year olds, and dependence on immigration for labor force growth. New England is an expensive place in which to live, and concerns abound about how to attract and retain the highly skilled workers that are needed for its high preponderance of high value added industries. Obviously, there's nothing new or particularly cyclical about the foregoing comments. But I've been to quite a few beginning of the year "let's take stock of things" conferences in all the states recently, so perhaps I've become more impressed than usual by the medium-term to long-term challenges facing the region. In the short run, however, the positive overall trend of the regional economy does seem to be a powerful offset to the continuing decline in real estate markets. At our last meeting it seemed as though New England's real estate problem was more significant than that in the rest of the country. But now it appears that both are similarly affected whether one looks at prices, sale volumes, inventory growth, or declining construction. As with the nation as a whole, there are signs of stabilization; but at least in New

England, making any judgment about the imminent revival of real estate markets in midwinter is foolhardy at best.

On the national scene, the data have been more upbeat since our last meeting. Apparently the holiday season was a bright one, with consumption likely growing at a pace of more than 4 percent in the last quarter. That's remarkably strong given the continuing decline in residential real estate and proof—to reiterate what President Stern said—that the U.S. economy continues to be unusually resilient. Supporting consumption are tight labor markets, lower energy prices, tighter though still reasonably accommodative financial conditions, strong corporate profits and some signs of revival in business spending after declines related to housing and motor vehicle expenditures, and continuing strong foreign growth. Even inflation has moderated a bit, with three-month core price increases in both the PCE and the CPI trending down. Our forecast in Boston and that of the Greenbook are virtually indistinguishable. The last quarter of '06 was stronger than expected. The first quarter of this year will be slightly better as well, but after that, the trajectory remains the same as it has been for the past two or three meetings. An increasing pace of growth in '07 and '08 as the housing and motor vehicle situations unwind, a slight rise in unemployment, and a fall in core PCE inflation to nearly 2 percent by the end of the forecast period. In many ways, this is the definition of perfection, a forecast that is seemingly getting better each time we make it, with growth a bit higher, unemployment a bit lower, and inflation ebbing slightly more. The underlying mechanics that produce this outcome are relatively straightforward, but I wonder whether we should have a heightened sense of skepticism about such a halcyon outlook. Let me focus on two reasons for such skepticism.

First, all other things being equal, inflation could be less than well behaved. One reason that inflation ebbed in earlier forecasts was that slower growth brought about a small output gap and

rising unemployment. Now, the output gap is virtually eliminated, and unemployment remains below 5 percent. Ebbing inflation is solely the product of recent favorable inflation readings, which are assumed to persist: lower energy prices, declining import prices, and falling shelter prices. It's hard to tell at this point whether the recent readings on core inflation are the result of fundamentally lower inflation pressures or just luck or maybe a combination of the two. I think a similar range of uncertainty applies to oil prices and the strength of the dollar. With virtually no output gap, it seems to me that, while the baseline best guess might be lower inflation, for all of the reasons discussed in the Greenbook one should approach that analysis with some caution.

Second, demand could well be stronger. The baseline forecast assumes that consumers somehow get the message some of us have been trying to deliver about the need for an increase in private saving. The saving rate moves from a negative 1 percent to a positive 1 percent, the highest saving rate in several years. As I noted before, I have to ask myself why this is likely to happen over the next coming months when it hasn't in the wake of the housing situation in 2006. Clearly, the downturn in residential real estate, an important political issue in all our Districts and certainly devastating for subprime borrowers in particular, hasn't affected consumer spending in general. In fact, household net worth as a share of disposable income remains quite high, buoyed in part by a likely overestimate of real housing values but also by rising equity markets. The timing of the needed increase in the personal saving rate could well be further out in the future, creating some version of the buoyant consumer alternative scenario instead of the baseline. Again, with no output gap, the potential for increased inflationary pressure is obvious.

In sum, the Greenbook forecast remains in my view the most likely baseline. There are downside risks, as I mentioned before, for the seven alternative scenarios do anticipate some downside risks; but if the housing situation is beginning to stabilize, I find it hard to believe that

broader anxiety about it will affect business spending or the consumer as some of these scenarios contemplate. The bigger risk may well be that business spending picks up in light of consumer strength, unemployment stays low, growth exceeds our current projections, and resource pressures become more intense. I am concerned that risks to inflation have grown somewhat since our last meeting. I think I'm still in a "wait and see" mode, as I do believe there are downside risks to the evolution of housing markets. But if the Greenbook growth forecast is right, the best risk management on our part may have to be to seek tighter policy sooner rather than later.

CHAIRMAN BERNANKE. Thank you. President Minehan, just to clarify, I think that the forecast of consumption is not based on the idea that the saving rate has to rise. Rather, consumption is modeled using underlying determinants, like income and wealth, and an endogenous indication of that is that saving rises.

MS. MINEHAN. Right.

CHAIRMAN BERNANKE. Anyway, you gave the impression that higher saving was itself something that was going to happen naturally.

MS. MINEHAN. As I look at the forecast in the Greenbook, the higher saving rate—money out of income that's expected to be there going into savings—is one element that makes consumption lower than it would otherwise be.

CHAIRMAN BERNANKE. But the saving rate is not driving the consumption forecast. Rather, the consumption forecast is driving the saving rate.

MS. MINEHAN. In the forecast, yes.

CHAIRMAN BERNANKE. President Fisher.

MR. FISHER. Well, Mr. Chairman, first on our cheaper, more affordable, and perhaps luckier Eleventh District economy, we estimate that employment growth ran at a rate slightly

greater than 3.2 percent last year and our output growth exceeded 4 percent. We do see some possible slowing, but there is still very strong momentum in the Texas economy and to an extent in the New Mexican economy, despite a lower rig count.

What I'm about to talk about is not based on the buoyancy of the Eleventh District economy but on my talking with CEOs as well as the economic projections of our own staff. I've talked with twenty-five CEOs for today's discussion. I've added two, and just for the record they are the CEO of Disney and the CEO of MasterCard.

First, my retail contacts, with one exception, report a pickup in dollar volume and foot traffic that began with the second half of December and has continued. As a result, the Wal-Mart CEO for the United States is much more optimistic and is now forecasting volume expansion of about 2 to 3 percent. My contact from JCPenney, which is in an income range that is double that of Wal-Mart, reports a similar pattern of behavior that started the Friday before Christmas and has carried forward and says that the consumers "feel good about the economy." The one exception, incidentally, is 7-Eleven, and I would be upset, too. Tobacco constitutes 30 percent of their sales, and Texas just levied a $10 tax on a $30 carton of cigarettes. Otherwise, the retailers seem to be much more optimistic than they were when I last reported. A not unimportant factor in this report has to do with the phenomenon of gift cards. In the public release of Safeway is an interesting piece of data: Their gift card business, which is called Blackhawk, grew 100 percent last year and dropped $100 million to the pretax bottom line. Wal-Mart reports—and this is not yet public information—a peak gift-card balance for this season of $1.2 billion. Now, mind you, 70 percent of the card use occurs before February 1. So this business has extended the retail season, and it may well have affected the buoyancy that I'm hearing from retailers in terms of their current activity. MasterCard confirms the pickup in consumer activity, particularly that it began late in the Christmas

season, and its CEO reports from his contacts certainly much less "noise" about a possible recession and sees that risk abating. Just to jump forward, we forecast, based on economic research, economic growth in our District of 2.7 percent for 2007, which is what MasterCard happens to be projecting—so I found that CEO to be instantly credible. Disney reports extremely strong advertising growth. They expect the year-over-year growth to be 20 percent in terms of their first-quarter network advertising, with strength in every sector except for autos, according to the CEO. They also report record foot traffic at their parks over the holidays. In contrast, UPS reports a weak start to December but a strong finish in the last seven days of the year, with year-over-year numbers for January not as robust as expected—running around 1 percent. The rails also report a bit slower volume, as the CEO of one of the large rail companies said. There are clearly shifts taking place. For example, lumber shipments of Union Pacific and Burlington Northern are down 25 percent year over year, reflecting the falloff in the construction of homes. Both CEOs caution that company year-over-year numbers are like comparing apples and oranges, given the robust growth in the first quarter of 2006. I did talk to two of the top five housing CEOs and a third one, a smaller company. They seem to confirm the sense of the staff in that they feel that the housing situation is bottoming out, but they continue to caution that any reading of the housing industry between Thanksgiving and the Super Bowl is of questionable value.

MR. MOSKOW. The one with two teams from the Seventh District. [Laughter]

MR. FISHER. Yes. But here are some data to put this statement in perspective. The contact from the largest company reports that cancellation rates, which were running at 50 percent in their most stressed markets, particularly in California and Florida, have come back to 20 to 25 percent—relatively good news. One aspect worth noting is that they are getting relief from their subcontractors—they estimate, on average across the industry, about 10 percent cost relief. Another

predictable behavior pattern becoming manifest is that the large contractors with very strong balance sheets are looking to buy the distressed smaller contractors. David, I agree with you that we haven't seen all the downturn in housing yet in terms of its effect on the economy, but we may well come out of it with an even more tightly consolidated industry. The bottom line on growth from the Eleventh District perspective is a Wagnerian summation—that is, the economy's growth dynamic is not as bad as we thought it was sounding when we last read the score. I would summarize it by saying that the tail in terms of the risk of recession has become much slimmer.

However, my conclusion is the opposite with regard to inflation—that is, on reflection and working with our staff and listening to CEOs, I think the tail in terms of risk of higher inflation has fattened, and this is reflected in several reports. Just very quickly—because of my Australian DNA—Anheuser-Busch decided to raise beer prices 2 to 3 percent at year-end. That doesn't bother me. What bothers me is the price of skilled workers who drink that good beer in terms of what's happening for wages and total compensation of skilled and unskilled labor. You know that I have talked about the massive projects that Texas Utility plans for coal to gas conversion and whether they get the so-called Dirty Dozen that they're planning or just a handful. I did go over with the CEO the studies that McKinsey, BCG, and Bechtel have provided for them, and some interesting data points came out that I want to summarize. In the summer of '05, they estimated that all-in labor costs for these plants, which they estimated per plant, would take 4.6 million worker hours at $36.25 an hour. Today they don't believe they can get the job done for less than $44 an hour; and because of worker quality issues, they now believe it will take 5.2 million worker hours for each plant. So if you have a 21 percent per hour increase and a 13 percent increase in hours, one wonders about the ability to see a short-term reduction in skilled and unskilled labor costs. These numbers, by the way, take into account the recent slippage in oil rig activity, which is down for the

fifth straight week, and also the slowdown in housing and some initial slowdown in commercial construction. It dovetails with reports like that of BP's to us that they decided to pay all their salaried operators, to whom only two years ago they were offering incentive packages to leave, $25,000 bonuses per year for the next two years to stay. Fluor's CEO reports that they are having the largest year in their history of hiring college graduates, and the 900 mechanics who work for a large truck dealer with which I regularly talk are now fetching $35 an hour.

Another piece of data comes from a study by McKinsey and BCG, and I want to talk about it very briefly in terms of the intermodal transportation system of our country. The shippers tell me that port congestion is very high. The fleet utilization rate is running at about 95 percent. You know that I like to talk about Panamax ship rates because of their size and liquidity. Prices have not eased since we last met, and the interesting factoid is that the ten-year-old fleet is available for purchase at the same price as the fleet expected to be delivered two and a half years from now. These ships run $39 million apiece before their add-ons, which tells you that there's a short-term tightness. If you talk to the rails and the effective two operators—there's really a duopoly in this country between Burlington Northern and Union Pacific—their pricing is based on opportunity costs because they do not foresee the ability to expand their networks. This may well facilitate an upward price spiral as all the infrastructure projects currently on the drawing boards begin, whether TXU's or some other liquefied natural gas companies' projects that we have heard about.

A couple of other points with regard to inflation that I think bear watching: These inputs are anecdotal, but I think we have a pretty good survey in terms of the oil and gas operators. Most of the major oil and gas operators would not be surprised to see $40 oil and to see a range between $40 and $60 oil—that fits with the Brown-Yücel model that we developed in Dallas—and for natural gas prices to ease to a level of about $5 in the spring. That's the good news.

I want to mention two other negative news items. One was referred to earlier, and that regards corn prices. The price for corn was $2.30 a bushel last year, if you looked on the graph that Bill, I think, presented earlier. Corn is now running $4.00 a bushel, and the food production companies we talked to project the price to be $5.00 by the end of the year. Now, this is good for farmers. It's good for John Deere. It's not good if you raise a chicken, a cow, or a pig, and it's certainly not good if you're a human who eats at Whataburger, one of my other new contacts. I won't use the language that the CEO used, but he reports that his margins are coming under pressure.

The second development may be a bit more disturbing; it concerns the cost of imported goods from China into Wal-Mart's network. According to Wal-Mart's CEO for international operations and their vice chairman, Chinese import prices into Wal-Mart's network were depreciating at an annual rate of between 2 and 5 percent. Recently, however, the rise in China's labor costs for their suppliers net of the increase in productivity is leading to import price costs that are increasing at a rate of approximately 1 percent. To me this development raises an issue that I think President Moskow touched on regarding our views on inflation and perhaps rates going forward, which we'll talk about tomorrow. At home, we're seeing unacceptably high and sustained wage developments for certain critical components of labor, which I mentioned earlier. Abroad from Germany to China, we're seeing economic growth rates that are well above sustainable trends, which is why I asked the question about your gap analysis earlier. My own staff calculates that, if you do a gap analysis—that is, if you compare current growth to what they estimate trend growth to be—there is no significant inflationary pressure. However, if you analyze capacity utilization rates in the G7 countries and in the BRICs, we are getting closer, given the economic growth that has been experienced, to more heavily used capacity and to igniting inflationary pressures. The bottom

line for inflation from our perspective is that what was once a tailwind generated by globalization may be closer to becoming a headwind than our models indicate and our limited understanding of the effect of globalization otherwise leads us to understand. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. President Fisher, just a quick question. I couldn't quite gather whether you were saying that commercial construction is overall slowing. You mentioned that once, but then you talked about a variety of projects.

MR. FISHER. It appears to be slowing in certain areas and in our District but is nonetheless running at a stout rate. It seems to have come off somewhat but, given the large projects that are planned, the numbers work out to show increasing pressure on the labor that's available to construct those projects.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. I have the sense that since our last meeting we've received a wealth of data but not necessarily a wealth of information. Between the data that have come in and the conversations that I've had with my District contacts in the past six weeks, I'm a little more confident about the outlook for real growth, and I view the inflation outlook as unchanged. Housing is an example of having more data, but not necessarily more information. Though some aspects of the residential housing data have been encouraging, neither futures on housing prices nor reports that I have received from people in the business suggest that the slowdown in that sector will end any time soon. Despite that, it still looks as though the spillovers to consumer spending and financial markets have been limited. At our last meeting, there was also some uncertainty regarding the health of the manufacturing sector. For the most part, the intermeeting data have been favorable for the manufacturing sector. The industrial production numbers, for example, have been strong, but manufacturing employment remains flat.

The usual story that makes sense of these disparate trends is the continuing strength in manufacturing productivity. But I'd like to mention another element in the picture—others have mentioned it this morning—and that's the skills mismatches. My directors and business contacts in the manufacturing sector tell me that they have jobs available but that they face great difficulty in filling those jobs because they can't find people with the right skills. Interestingly, as was mentioned in the staff presentation earlier, the JOLTS data show openings as rising, and that's also true in the manufacturing sector. Openings have been rising over the past two years. This news really isn't so good per se, but it does suggest that at least some of the sluggishness in manufacturing job growth is coming out of the structural elements in the labor markets and is not purely a cyclical decline in aggregate demand. In a somewhat related vein, according to the National Association of Colleges and Employers, college placements are up 17 percent this year, the strongest showing since 2001. The story is that relatively high profits and good business prospects are driving up demand. We also understand from the Ohio governor's office that last year, although sales tax receipts were lower, income tax receipts were stronger than expected.

These bits and pieces combined with some of the positive news in the aggregate data reports in the past couple of months make me somewhat less worried about the downside risks to economic growth than I was at the last meeting. I don't want to go overboard on this. I had that feeling several times last year only to be subsequently moved in the other direction. It is hard to tell whether some of this good news has been related to weather—that is, some spring activity might have shifted into the fourth quarter.

On the inflation front, both the official data and the anecdotal stories from my contacts continue to provide some encouragement that core inflation will moderate over the next year, but the data are not yet entirely convincing. My staff has noted that for most of 2006, especially in the

later half of the year, the growth rates of individual CPI components exhibited a bimodal distribution. On an expenditure-weighted basis, most components were either falling in price or rising at a troubling rate. Very few CPI components were rising at a pace that the CPI tells us is about average. This pattern is highly unusual, and I don't know what to make of it, except to say that it does make it more difficult to tell which way the inflation trend is leaning.

My only material difference of opinion with the staff baseline projection concerns the assumption about labor supply. Economywide, there is some reason to think that aggregate labor supply is more abundant than the Greenbook baseline contemplates. Labor force participation rates for most demographic groups have been running stronger than the staff has been expecting, indicating that the growth of potential output could lie somewhat above the Greenbook estimate. That's what I am assuming, and therefore I get a slightly better combination of output and inflation .

In the end, my outlook for the economy hasn't changed. The general contours of the forecast for a modest slowdown in growth coupled with a very gradual decline in core inflation make sense to me. However, I have lowered just slightly my assessment of the risk that real growth will fall short of my projection, and I have not changed my risk assessment of inflation. There's still a notable risk that year-over-year changes in inflation might remain stuck where they are today as opposed to drifting down half a point or so over time as I would prefer. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. Economic activity in our District lost a bit of momentum in January. Retail sales contracted in recent weeks as automobile dealers noted waning interest and buyers of big-ticket electronic goods stayed home, perhaps to watch the big screens they purchased during the holidays. [Laughter] Another source of slowing was a further pullback

in the factory sector. I should mention new orders in our District slipped in recent weeks, on top of December's modest contraction, and factory hiring edged lower for the second straight month. On the plus side, services firms continued to report moderate growth in revenues and employment. Despite this mixed picture, however, a wide variety of firms remained optimistic about their prospects six months out. District labor market conditions remained tight, and skilled workers continued to be in strong demand in large metropolitan areas. Businesses tell us that they are pushing up wages as a result.

Real estate activity is, on balance, hanging in there. Anecdotal reports indicate fairly firm home sales across many areas in December, and we're hearing more reports of pockets of strength in some suburban housing markets around D.C., though assessments from other areas continue to be somewhat downbeat. We have also heard that homebuilding activity rose somewhat in a number of District metropolitan areas in recent weeks. Commercial real estate prospects remained relatively bright, with leasing activity firm and a solid number of projects on the books for '07. Price pressures at District firms seem to have moderated somewhat, confirming the national trends.

The national data flow since our last meeting has been encouraging. The Greenbook now predicts a higher trajectory for real GDP. I agree with the Greenbook's short-term outlook. Declining housing construction is still depressing the real growth rate now, but demand has stabilized, I think, and inventories may be topping out. Each batch of housing data has bolstered my confidence in the trajectory we sketched out last fall—namely, that the drag from housing will mostly disappear by midyear with spillover having been relatively limited.

Consumer spending has been quite resilient. Evidently, favorable income prospects have trumped weakening housing prices. The fundamentals for business investment remain favorable with the cost of capital low and profitability high; and the latest news—that unfilled orders for

capital goods are continuing to increase—fits in well with the view that equipment investment is likely to be a source of strength going forward. The Greenbook has real growth later this year and into next year returning to trend, driven by strength in business investment and solid consumer spending. I agree with that outlook with the caveat that my estimate of trend growth is higher than the Greenbook's.

The inflation news since the last meeting has been encouraging as well. Core CPI inflation was 1.8 in the fourth quarter, and core PCE inflation was estimated to have been 2.1 percent. It's tempting to extrapolate this favorable news forward as the Greenbook does and forecast a gradual downward drift without further overt action by the Committee. That outcome is certainly plausible, especially if oil prices cooperate and remain contained within recent trading ranges. But I remain apprehensive. First, core inflation has exhibited fairly substantial high-frequency swings over the past couple of years. So it will take many more months for me to be very confident that inflation is trending down. Second, and related, over the past three years large swings in energy prices have been followed by swings in core inflation with a short lag. Indeed, the cross-correlation between core and energy components of the PCE price index seems to have increased in the past few years. The recent dip in core inflation may therefore be the transitory effect of last summer's decline in energy prices, and the December uptick in core CPI may signal that it's behind us now. A downward drift in inflation thus is likely to depend critically on the absence of upward movements in energy prices. Note that the staff follows the futures market in assuming, as I calculated it, a 13 percent rise in oil prices by the end of 2008, which suggests continuing upward pressure on core inflation. Third, expectations could well exert a gravitational pull in an upward direction rather than the downward direction as claimed recently in a popular newsletter and also as the staff indicated underlies their forecast. Personally, I place the center of gravity a little higher, above 2 percent.

The twelve-month change in core PCE inflation has been above 2 percent, as we all know, since March 2004, and none of the usual measures of expectations either from surveys or TIPS markets are much below 2½ percent for the CPI. So even though the recent inflation news has been comforting, I think there's a good reason to continue to worry about it.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. Conditions in the Third District have continued to evolve much as they have for most of the past several months. Economic activity is still expanding. I think I can use the word "moderate"—I don't think anybody else has used that yet, and our contacts expect the pace to be maintained in the coming months. There has been little change in the pattern of activity over the sectors. Retailers in our region indicated that their holiday sales were about as they expected or somewhat better. Housing continues to weaken at a somewhat orderly pace, but there are signs of stabilization of demand. Inventory has remained elevated, and construction continues to decline. However, the weakness in residential construction is being offset by continued strength in nonresidential construction. Office vacancy rates continue to decline in Philadelphia and in the near suburbs as well. The net absorption of office space has increased for the past twelve quarters. Manufacturing activity in the region hit a soft spot in the fall, as I indicated in previous meetings, but our most recent Business Outlook Survey, in January, presented somewhat positive but also somewhat mixed signals. The general activity index returned to positive territory with a reading of plus 8, indicating a slight increase in manufacturing activity, and there was a significant rebound in shipments. New orders, however, remained close to zero. That's somewhat of an aberration because new orders and shipments tend to move very much together, and so there are some inconsistencies there, which is why I said the situation is a bit mixed. According to our survey, however, the firms expect a rebound of general manufacturing activity and orders

over the coming six months. Indeed, most of our business contacts see moderate growth in the region continuing for the foreseeable future. Their positive attitudes are consistent with the recent positive news we've had about conditions in the nation. Firms remain concerned about their ability to hire both skilled and unskilled labor. Labor markets are tight for many of the reasons that President Minehan described in New England; we have some of the same things going on in the Third District.

Regarding national conditions, the unusually warm weather in December may have temporarily buoyed some of our numbers; but based on incoming information, I've become increasingly confident that the national economy has a positive underlying momentum. At the time of our last meeting, there was a contrast between the mixed data on consumption and production and the relatively strong indications from the labor market. The picture that appears to be emerging from the latest economic information is one of stronger underlying growth that has been temporarily weakened by housing and autos. There is little, if any, evidence that the housing and auto corrections are spilling over into the other sectors of the economy. We've been looking for those spillovers for the past six months and have yet to see any significant evidence that they are occurring or are about to occur. Of course, spillovers may yet materialize with a long lag, but that likelihood to my mind is diminishing as we have begun to see some hopeful signs of stabilization in housing. Labor market conditions remain firm, and manufacturing indicators improved in December as did capital goods orders. Although I didn't talk to the chairman of Disney, I did talk to a small manufacturing firm with total revenues that come to $2 million. He has been very positive about the outlook. His sales depend a lot on construction, and he said that, after the most miserable August and September he had ever seen in his twenty years of running the business, the pickup began in late November, continued through December, and has continued into January as

well. Other contacts from banks, particularly credit card issuers to whom I've talked, suggest that banks are seeing numbers coming across their books on credit card purchases continuing to be strong even after Christmas. So that also is good news.

All of this suggests that the downside risks to growth have receded since our last meeting. I believe this is the market's assessment as well, as expectations of future policy firm. My outlook is that the economy will return to trend growth, which I put at about 3 percent this year, and will continue at that pace into 2008. Of course, as everybody has indicated, that's a little stronger than the Greenbook's outlook, and it is, again, based on my view that potential growth or trend growth is somewhat higher than the Greenbook has stated. I expect the unemployment rate to rise slightly, maybe to 4.8 percent by the fourth quarter of this year, and then to stabilize into next year. I think this is going to be accompanied by employment growth of nearly 1 percent, and again, that's what accounts for the difference in the trend growth.

I anticipate a decline in core PCE inflation of about 0.4 percent by 2008. I would like to underscore that this forecast is not driven by a lower pass-through of oil prices, which have declined. My reading of the empirical evidence, including work done by some people on the Philadelphia staff, is that it's very difficult to attribute movements in core inflation of six months to twelve months or longer periods to changes in oil prices. In fact, there's growing empirical evidence that neither movements in oil prices nor Phillips curve type factors significantly improve our root mean square error forecasts of core inflation two or more quarters ahead. I note that this refers to forecasts of six months or longer and not to short-run high-frequency movements. This suggests that we should be careful in the language we use describing the reasons for our projections of future inflation to avoid perpetuating views of inflation processes that we can't empirically substantiate.

In my view, core inflation will not come back down until monetary conditions, which I believe have been very accommodative over the past few years, have tightened sufficiently. The Greenbook forecast has a slightly smaller decline in core PCE inflation to about 2 percent in 2008, but incorporates a less restrictive monetary policy than I believe is likely to be appropriate given my view of the strength of the underlying economy and of the fundamentals that we are seeing. Indeed, over the past two meetings, my feeling was that the slowdown in economic activity that we might be seeing, combined with a constant fed funds rate, might have been enough to bring inflation back to a more acceptable level. Now I'm less convinced that price stability will be achieved without further action on our part some time later this year. But I will leave that discussion to the policy go-round. Thank you.

CHAIRMAN BERNANKE. Mr. Vice Chairman.

VICE CHAIRMAN GEITHNER. Charlie, I'm not sure I understand your thinking. You said that you expect what sounded like a pretty significant moderation in core PCE, but that's on a monetary policy assumption that implies further tightening.

MR. PLOSSER. That's right, somewhat tighter, somewhat more aggressive than what's in the Greenbook.

VICE CHAIRMAN GEITHNER. Though I don't want to pin you down, that sounds sort of modest. You are saying that with another 25 basis points you'd get what core PCE inflation over the forecast period?

MR. PLOSSER. The path I was thinking about as I was doing the forecast and trying to determine the appropriate policy here—my desire is to get inflation down lower, and that's reflected in my forecast—is one in which the fed funds rate goes up somewhat from where it is today,

perhaps to 5½ or 5¾ percent. But then by the end of ’07 and into ’08, it’s coming back down again to more of a steady-state level, and then we can talk about what the real neutral rate is.

VICE CHAIRMAN GEITHNER. Just in orders of magnitude—if we did another 25 or 50 basis points and there were some sort of associated changes in overall financial conditions so that that was reinforced, you’d get a core PCE inflation forecast that would go how far down? Would it go to 1.5?

MR. PLOSSER. Well, there’s some uncertainty about that. I think it would get to between 1.5 and 2 percent.

CHAIRMAN BERNANKE. Thank you. It’s 4:30. Why don’t we take a fifteen-minute coffee break?

[Coffee break]

CHAIRMAN BERNANKE. Would you come to order, please? Thank you. We are ready to recommence with the go-round. President Hoenig.

MR. HOENIG. Thank you, Mr. Chairman, now that I have everyone’s attention, [laughter] I’m going to start with some information on the District and then talk briefly about the national economy from my perspective. Let me begin by saying that the District’s activity did slow over the second half of 2006 in line with the national economy itself. The slowdown was most apparent in housing and manufacturing. However, the most recent data that we have from November and December indicate a pickup in some of the activity. Moreover, reports from our directors and our business contacts suggest a considerable degree of optimism among them going forward, more than we expected actually. One area in which we are seeing signs of improvement is housing itself. While new construction activity does remain subdued in our region, sales activity has picked up, and the inventory situation appears to be improving in our major markets. Nonresidential

construction remains strong and is offsetting some of the weakness on the residential side. District employment growth has risen in recent months, and labor markets remain tight for us. In addition to continuing shortages of skilled workers in a large number of technical and professional areas, we have recently received reports that the hospitality and recreational sectors are experiencing difficulty in finding lower-skilled workers as well. We have also received numerous reports from directors in District businesses indicating higher year-end wage and salary increases.

The situation in agriculture is somewhat mixed. The sharp increases in crop prices, especially corn, driven by exports of ethanol and exports of corn itself, have caused the USDA to boost estimates of 2007 farm income rather significantly. However, higher crop prices are also eroding profitability of livestock producers and processors in our region, which is a fairly important sector.

One important sector in which activity appears likely to slow in 2007 is energy. The District economy has benefited tremendously over the past few years from the rise in energy prices, which has spurred increased production of traditional products—and that includes oil, gas, and coal—as well as alternative fuels like ethanol and biodiesel. According to reports from a couple of our directors, however, the recent decline in energy prices has already led to a reduction in drilling activity and is likely to cause some cutbacks in new investment in alternative fuels as well.

Turning to the national outlook, I, like others, have noted the recent strength in the economy and have raised my estimates of growth for the fourth quarter and somewhat raised them for the first quarter. I continue to expect growth to rise over 2007 modestly toward what I think is potential, in the neighborhood of 3 percent. However, now I expect it to occur a little more quickly than I did at the December meeting. Accordingly, recent economic information has led me to reassess the balance of risks to the outlook. I believe the downside risks from the further slowing of housing

have diminished somewhat. Moreover, I share the view that the recent weakness in manufacturing activity reflects a better balancing of production and inventories rather than a fundamental weakness. Going forward, the improved outlook for energy prices should support consumer spending by improving consumers' disposable income, and we may see additional fiscal stimulus resulting from the more-favorable budget positions of the state and local governments.

Finally, in terms of the inflation outlook, my views have not changed materially since the last meeting. I've been encouraged by the recent inflation data, and I continue to expect inflation to decline over the forecast period. I expect the core CPI to be in the 2.3 percent range and core PCE inflation to be about 2 percent for 2007. However, as others have noted, core inflation is too high, and considerable uncertainty remains about whether the recent progress will be sustained. Particularly, it is not clear how the opposing trends of lower energy prices and greater resource pressures may play out over the next few quarters. Consequently, it seems to me that there is upside risk to the inflation outlook. Thank you.

CHAIRMAN BERNANKE. Thank you. President Barron.

MR. BARRON. Thank you, Mr. Chairman. I thought I'd focus a little more today in my comments on the State of Florida as it relates to the housing sector. We've heard a lot more positive comments in just the past few minutes about housing. So let me offer a contrarian view, if you will. Florida accounts for about 41 percent of our District employment and 6 percent of overall U.S. employment. As for housing, Florida represented 8 percent of U.S. home sales in 2005 and 6 percent in 2006 as sales and construction continued to decline. To put these numbers in perspective, single-family existing home sales in Florida have dropped 40 percent since January 2005 versus an 11 percent decline in the United States as a whole. Anecdotal reports are that builders are continuing to work down existing inventory and are not starting new projects. In most areas of the

state, starts have fallen even more than sales, which should lessen the run-up in housing inventory over the immediate future. Permit issuance for single-family homes is down 54 percent in Florida since January 2005 compared with 28 percent in the nation as a whole. There are certain encouraging signs from reports noting, as mentioned earlier, that buyer traffic is better in some areas, and several of the building contacts that we spoke with expect or, perhaps I would note more accurately, are hopeful that new home sales will improve by the second quarter of 2007.

Home prices have declined modestly but remain well above the levels implied by the pre-2003 trends in most areas. This places housing affordability at a relatively low level by historical standards. As I noted at previous meetings, the demand in coastal markets is being constrained by the steep rise in homeownership insurance that has caused monthly housing costs to rise sharply, even as house prices moderate. We've heard reports that in markets where prices accelerated the most in recent years, such as south Florida, employers are struggling to recruit staff because of the high housing costs, with some firms electing to leave south Florida and others beginning to convert corporate owned land to corporate housing just so that they can recruit employees. As I reported at our last meeting, the decline in housing activity continues to have a negative effect on housing-related sectors specifically in the South because of our concentration in the carpet and other related industries. Housing-related employment is no longer a net contributor to year-over-year employment growth in the United States, even though overall job growth has remained very firm.

District banks reported that credit quality has softened but remains at very strong levels. However, banks are beginning to be a bit more vocal in expressing concern with regard to the possibility that builders will face financial problems in the coming months. In addition, banks express concern about the number of speculative condominium projects in south Florida. District banks have lower earnings targets for 2007, and the expectation is that bank merger and acquisition

activity and layoffs will increase in the coming year. Some banks are even putting out the "for sale" sign in the hope of cashing out now, noting that things could get ugly over the next two years in some areas.

Outside the housing sector, indicators of economic performance in the District were mixed. Reports on holiday-related sales were on the positive side, whereas tourism remains relatively mixed across the District. Reports from the manufacturing sector were also mixed, with a weakness in the housing-related industries offset to some extent by the expanding activity in industries related to defense and energy.

For the U.S. economy as a whole, the drag from housing that we experienced over the second half of 2006 does not appear at this time to pose a serious threat to the overall economy, although some forecasters anticipate below-trend real GDP growth for the end of 2006 and the first quarter of 2007. Most would say that this situation is temporary and would anticipate that real GDP growth will rebound and be close to the trend rate of 3 percent for the rest of 2007. Our staff projections of real GDP growth have had about the same tone as those of the external forecasters. Our staff believes real GDP growth will be sustained in 2007 by job creation that should match the experience that we've seen in 2006.

Measured core inflation was well in excess of 2 percent at the end of 2006. The staff forecast is that core inflation will continue to hover just above 2 percent for all of 2007. The expectation is that price growth in services will continue to dominate core inflation going forward. In my comments I've focused a bit more on housing. I would just close by noting that my continued concern would be the lack of impetus to drive down inflation over the long term. Thank you.

CHAIRMAN BERNANKE. President Poole.

MR. POOLE. Thank you, Mr. Chairman. I have to start by saying that it's hard to compete with my colleague Richard Fisher, with his stable of contacts. I have perhaps just a slight amendment on Wal-Mart. My contact there said that he has observed in recent years a changing pattern of holiday shopping, with shoppers procrastinating and putting their shopping closer to Christmas, and that might have moved some sales from November to December; also the growth of the gift card business moved some of those sales into January. Those circumstances might explain a bit of what we're seeing. He said that it looks as though the January same-store sales growth will come in at 2½ to 2¾ percent. I'm sure that's consistent with Richard's information. My contact points out that, although those numbers are a little better than what they had anticipated a month or two ago, they are still 200 basis points below the original plan, which was set about a year ago. For February their plan is 4½ percent, but he believes that anything north of 3 would be good performance. His view is that he doesn't see a lot of momentum one way or another, that things are pretty steady, and that there's been no particularly significant change in the situation.

My FedEx contact sees business as very steady. There was a very strong peak season, pretty much on projection. The one negative he sees is in the less-than-truckload business, and that confirms information coming directly from a trucking industry source as well. Basically, the outlook is good, steady, and very confident. As for capital expenditures, FedEx is expecting to have 15 percent above this fiscal year in the next fiscal year, which starts June 1. My contact does not see any particular labor market pressures. My UPS contact said that the company is cutting its cap-ex, and they are actually cutting capacity. He said that they are cutting out twelve flights, I think it was, that they had just added in June. The cuts are basically a consequence of a careful analysis of their express business, which showed that a lot of it is just unprofitable,

particularly the shipping of packages to individual homes. They are renegotiating contracts with online retailers and mail order retailers, and they're trying to shed some of that business.

My trucking industry contact says that things just don't look very sound. Freight volume, which would be full truckloads, is actually off 4 percent year over year in January. Shipping rates are flat, but there are intense pressures from their clients to cut rates. Driver turnover is up because the drivers are not getting enough business to eat well, and so they are shopping around for other companies. So they are losing some drivers, but they're not too worried because they have plenty of drivers at the moment. The intermodal business is holding up well, my contact said.

I'd like to just make one brief comment on the national outlook. I think it's pretty clear, and it's reflected around the table, that the outlook for real GDP is a bit stronger than it was at our December meeting, and depending on your perspective in reading the data, maybe the inflation picture is a bit better, too. But I would emphasize that, compared with past revisions of the outlook, these are really marginal and not material revisions. There hasn't been any really big news here. We don't want to get carried away with a flow of data that is only slightly stronger.

Let me also comment, along the same lines, about what has been going on with longer-term interest rates. At the time of our December meeting, the constant-maturity ten-year rate was 4.49. At least that's what I have in my spreadsheet. On Friday, it was 4.88. There has been a lot of comment to that effect. I think that change is due partly to the string of marginally stronger news and partly to a change in the market's assessment about our likely future behavior. The market has simply taken out the expectation of a rate cut in the near term. The market has looked again at where we are to a much greater extent than we ourselves have. Thank you.

CHAIRMAN BERNANKE. Thank you.

MR. LACKER. Mr. Chairman?

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. Do you think that's because they have changed their minds about our reaction function or about how the shocks are likely to come in between now and then?

MR. POOLE. I suspect that it's a combination. But I also think that a number of us in our speeches have been saying things such as that we think policy is at about the right place. If we repeat that often enough, the markets begin to think that we're not about to cut rates.

MR. LACKER. So what about our statement in October? Did they miss that?

MR. POOLE. I guess that it's a consequence of the interaction between what we've been saying and the flow of data. You have to be careful about double-counting here, but the flow of data has perhaps convinced the market that what we were saying is right because the market, I think, had developed a somewhat different sense of where the economy was going than they had thought that we held.

VICE CHAIRMAN GEITHNER. Does Mr. Lacker have an alternative explanation?

MR. LACKER. I think he's right. He is suggesting that his belief is that the reaction function they hold to hasn't changed much in the past month or two but that the shocks have come in more consistent with our assessment of how they were going to come in. Is that fair?

MR. POOLE. Yes.

CHAIRMAN BERNANKE. Thank you. Vice Chairman Geithner.

VICE CHAIRMAN GEITHNER. Thank you, Mr. Chairman. Just a few quick points. We feel somewhat better about the outlook for growth and inflation, but we haven't really changed our forecasts for '07 and '08. So just as we expected over the past few cycles, we

currently expect GDP to grow roughly at the rate of potential over the forecast period, which we believe is still around 3 percent, and we expect the rate of increase in the core PCE to moderate a bit more to just below 2 percent over the forecast period. We see somewhat less downside risk to growth and somewhat less upside risk to inflation than we did, but the overall balance of risks in our view is still weighted toward inflation—the risk that it fails to moderate enough or soon enough. The basic nature of the risks to both those elements of our forecast hasn't really changed.

As this implies, our forecast still has somewhat stronger growth and somewhat less inflation than the Greenbook does. The differences, however, are smaller than they have been. We see the same basic story that the Greenbook does in support of continuing expansion going forward. We have similar assumptions for the appropriate path of monetary policy—at least two, perhaps several, quarters of a nominal fed funds rate at current levels. The main differences between our view about the economy and the Greenbook's relate first, as they have for some time, to the likely growth in hours; we're still not inclined to build in a substantial reduction in trend labor force growth. Second, our view is that inflation has less inertia, less persistence, than it has exhibited over the past half-century. Third, we tend to think that changes in wealth have less effect on consumer behavior than does the staff.

We have seen a general convergence in views in the market, as we just discussed, toward a forecast close to this view, close to the center of gravity in this room, and a very significant change in policy expectations as well. We can take some comfort from this, but I don't think we should take too much. Markets still seem to display less uncertainty about monetary policy and asset prices and quite low probabilities to even modest increases in risk premiums than I think is probably justified.

Let me just go through the principal questions briefly. Is the worst behind us in both housing and autos? Probably, but we can't be sure yet. If we get some negative shock to income—to demand growth—we're still vulnerable to a more adverse adjustment in housing prices with potentially substantially negative effects on growth, in part because of the greater leverage now on household balance sheets. How strong does the economy look outside autos and housing? Pretty strong, it seems. We see no troubling signs of weakness, despite the disappointment on some aspects of investment spending. What does the labor market strength tell us about the risk to the forecast? It seems obvious that on balance it justifies some caution about upside risk to growth and more than the usual humility about what we know about slack and trend labor force growth. But I don't think it fundamentally offers a compelling case on its own for a substantial change to the inflation forecast or the risks to that forecast.

Is there any new information on structural productivity growth? Not in our view. We're still fairly comfortable with the staff view of around 2 percent or 2½ percent for the nonfarm business sector. I'm not a great fan of the anecdote, but I'll cite just one. If you ask people who make stuff for a living on a substantial scale, it's hard to find any concern that they are seeing diminished capacity to extract greater productivity growth in their core businesses. That's not a general observation, just a small one.

Have the inflation risks changed meaningfully in either direction? I think the recent behavior of the core numbers and of expectations is reassuring. The market doesn't seem particularly concerned about inflation, and the market is therefore vulnerable to a negative surprise, to a series of higher numbers. Can we be confident we'll get enough moderation with the current level of long-term expectations prevailing in markets, with the expected path of slack in the economy, and with the range of potential forces that might operate on relative prices—

energy, import, and other prices? Again, I think this forecast still seems reasonable, but we can't be that confident, and we need to be concerned still about the range of sources of vulnerability of that forecast. Another way to frame this question is, Is the inflation forecast consistent with the current expectations for the path of monetary policy acceptable to the Committee? We haven't fully confronted that issue because we don't get much moderation with a monetary policy assumption that's close to what's in the markets. But I don't think there's a compelling case to act at this stage in a way that forces convergence on that. In other words, how tight is monetary policy, and how tight are overall financial conditions today? I don't think there's a very strong case for us to induce more tightness or more accommodation than now prevails. There's a good case for patience and for giving ourselves a fair amount of flexibility going forward, within the context of an asymmetric signal about the balance of risks and a basic judgment that we view the costs of a more adverse inflation outcome as the predominant concern of the Committee.

CHAIRMAN BERNANKE. Thank you. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. In preparation for submitting my forecast, I looked at my previous forecasts—a humbling but instructive experience usually. [Laughter] Going back a year, I found that, based on the staff's estimate for 2006, inflation and growth had each turned out within a quarter point of my projections. I'm quite certain that this is not a consequence of any particular expertise on my part. Rather, it is indicative that, in a broad sense, the economy is performing remarkably close to our expectations. President Poole was making this point. Even going back a few years to when we started to remove accommodation, despite large fluctuations in energy prices in recent years, huge geopolitical uncertainties, and a housing boom and bust the dimensions of which we really didn't anticipate three years ago, the economy

is in the neighborhood of full employment, and core inflation is at a fairly low rate by historical standards.

Now, the surprises last year were the surge of inflation in the spring and early summer. That has not been entirely reversed. The extent of the slowdown in productivity growth, both in terms of trend and of actual relative to the lower estimated trend, and the related decline in the unemployment rate suggest that we are entering 2007 with a higher risk of inflation than I had anticipated a year ago. Given this risk, it is especially important that economic growth be no greater and perhaps a little less than the growth rate of potential, and that is my forecast—a small uptrend in the unemployment rate. The issue I wrestled with was how fast the economy will be growing when the drag from housing abates. In early December, the debate might have been about whether demand would be sufficient to support growth as high as potential. But given the stabilization of housing demand, the strength of consumption, and ongoing increases in employment, I asked myself whether we might not find the economy growing faster than its potential beginning in the second half of 2007 and in 2008, thereby adding to inflation pressures.

A couple of forces, however, gave me a little comfort in supporting my projection of only moderate growth. One is the modest restraint on demand from the recent rise in interest rates, especially the restraint on the housing market, and the dollar exchange rate. Another is the likelihood that consumption will grow more slowly relative to income and will lag the response to housing as housing prices level out and as energy prices begin to edge higher. Consumption late last year was probably still being boosted substantially by the past increases in housing wealth and by the declines in energy prices, which combined with warm weather to give a considerable lift to disposable income. On the housing wealth factor, I think our model suggests that it takes several quarters for a leveling out in housing wealth to build into consumption. In

fact, the data through the third quarter suggest that prices were really just about leveling out in the third quarter. So it may be a little early to conclude that, just because we're not seeing a spillover from the housing market to consumption, there isn't going to be any. I expect some, though modest, spillover. Moreover, some of the impulse in the fourth quarter was from net exports. These were spurred in part by a temporary decline in petroleum imports and an unexpected strength in exports. Those conditions are unlikely to be sustained. In addition, business investment spending has been weaker than we anticipated. Now, I suspect this is, like the inventory situation, just an aspect of adapting to a slower pace of growth, and investment will strengthen going forward. But it does suggest that businesses are cautious. They are not anticipating ebullient demand and a pressing need to expand facilities to meet increases in sales, and their sense of their market seems worth factoring into our calculations. Finally, the fact that I would have been asking just the opposite question seven weeks ago suggests that we're also putting a lot of weight on a few observations, [laughter] whether regarding the weakness then or the strength more recently.

I do continue to believe that growth close to the growth rate of potential will be consistent with gradually ebbing inflation. For this I would round up the usual suspects, reflecting the ebbing of some temporary factors that increased inflation in 2006. One factor is energy prices. Empirical evidence since the early 1980s to the contrary notwithstanding, the coincidence that President Lacker remarked between the rise and fall in energy prices in 2006 and the rise and fall in core inflation suggests some cause and effect. The increase in energy prices into the summer has probably not yet been completely reversed in twelve-month core inflation rates, so I expect some of that to be dying out as we go into the future. Increases in rents are likely to moderate as units are shifted from ownership to rental markets. The slowdown in growth relative to earlier

last year seems to have made businesses more aware of competitive pressures, restraining pricing power. When we met last spring, we had a lot of discussion about businesses feeling that they had pricing power—that they could pass through increases in costs. I haven't heard any of that discussion around the table today.

The recent slowdown in inflation is encouraging but not definitive evidence that the moderation is in train. The slowdown could have been helped by the decline in energy prices, and that decline won't be repeated. Goods prices might have been held back by efforts to run off inventories, and that phenomenon, too, would be temporary. As I already noted, the initial conditions—the recent behavior of productivity and the relatively low level of the unemployment rate—suggest upward inflation risks relative to this gentle downward tilt. To an extent, the staff has placed a relatively favorable interpretation on these developments. They haven't revised trend productivity down any further. They expect a pickup in realized productivity growth over this year. They see a portion of the strength in labor markets as simply lagging the slowdown in growth—a little more labor hoarding than usual as the economy cools, along with some statistical anomalies. Thus, in the Greenbook, the unemployment rate rises, and inflation pressures remain contained as activity expands at close to the growth rate of potential.

President Yellen at the last meeting and Bill Wascher today pointed out two less benign possibilities. One is that demand really has been stronger, as indicated by the income-side data, and that the labor and product markets really are as tight as the unemployment rate suggests. In this case, the unemployment rate wouldn't drift higher with moderate growth. Businesses might find themselves facing higher labor costs and being able to pass them on unless we take steps to firm financial conditions. The second possibility is that trend productivity is lower. In this case, actual productivity growth might not recover much this year. Unit labor costs would rise more

quickly. Given the apparent momentum in demand, we might be looking at an even further decline in the unemployment rate in the near term. Now, my outlook is predicated on something like the staff interpretation, but I think these other possibilities underline the inflation risks in an economy in which growth has been well maintained. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Bies.

MS. BIES. Thank you, Mr. Chairman. Like several of you, I'm going to focus on housing and what we're seeing in the banking sector and in mortgage performance. Since the last meeting, I am feeling better about the housing market in the aggregate. It looks as though home sales are stabilizing for the fourth quarter. On the whole, home sales actually did go up a bit. The inventory of new homes for sale has now fallen for five months through December, and mortgage applications for home purchases continue to move above the levels of last summer, when they hit bottom. The National Association of Realtors is estimating that existing home sales have already bottomed out, and homebuilder sentiment improved in three of the four past months. But even if sales really have stabilized, the inventory of homes for sale still must be worked down before construction and growth resume in this market. Given that some existing homes have likely been pulled off the market in light of slower sales and moderating housing prices, this inventory correction period will probably continue into 2008. I think this is particularly true in markets such as Florida, as First Vice President Barron mentioned, where a large amount of speculative investment occurred during the boom period—with three to five years of excess construction from the investor side. So those homes still have to be worked through.

Asset quality in the consumer sector as a whole is very good. We have come through one of the most benign periods. The exception, as Bill mentioned in his presentation earlier today, is

the subprime market. When you dissect it, you see that prime mortgage delinquencies are flat and subprime mortgages at a fixed rate are flat. The whole problem is in subprime ARMs, which are running into difficulties. The four federal regulatory agencies are looking harder at some of these subprime products. We started reviewing 2/28 mortgages, and now we're looking at and testing some other products. We're finding that the issues are getting more troublesome the further we dig into these products. To put the situation in perspective, subprime ARMs are a very small part of the whole mortgage market. As Vincent mentioned, subprime is about 13 percent, and the ARM piece of the subprime is about half to two-thirds, so we're talking perhaps around 8 percent of the aggregate mortgages outstanding. We're seeing that the borrowers who got into these during the teaser periods now are seeing tremendous payment shocks. For example, 2/28s that are going from the fixed two-year period to the adjustment period basically had their interest rates double, so they're going from a 5 percent handle to a 10 percent handle, and the borrowers don't have the discretionary income to absorb that. This type of mortgage was sold to a lot of subprime borrowers on the idea that they are lending vehicles to repair credit scores. You will show that you are going to pay during the early period, and then you can refinance and get a lower long-term rate, so you'll never pay the jump. But we're finding that some of these mortgages have significant prepayment penalties, and so to refinance and get the better terms, some borrowers are getting into difficulty. Because of the moderation in housing prices, these borrowers haven't built up enough equity to absorb the prepayment penalty. So the problem stems from a combination of factors. There are a lot of spins on these products, but we're trying to take an approach based on principles in looking at what's really happening.

I also want to mention that, although the ownership of the mortgages is very diffuse and so we're not seeing any real concentrated risk, particularly in banking, we do need to pay more

attention to where the mortgage-servicing exposures are. The servicing of these mortgages that are securitized is concentrated in certain institutions. Clearly, when you have such a high level of delinquencies and potential defaults, all profitability in servicing is gone. So there could be some charge-offs in these securitized mortgages. Also, I think all of you have noticed the number of mortgage brokers that have closed up shop in the past six months because they couldn't get enough liquidity or capital to repurchase the early defaults of these recent pools. That is really shrinking the origination pocket. I should also say that, with the exception of the subprime ARM mortgages, we feel very good about overall credit quality.

When I look at the economy as a whole, I also see that except for housing construction and autos, the rest of the economy is sound. The recent growth in employment and the strong wage growth give me comfort that the income growth of consumers is there to mitigate some of the wealth effects that we may have with moderating housing prices. But I also share the concerns that some of you mentioned here, and that President Yellen spoke of in a speech, about the issue regarding productivity trends and wage growth, and determining how fast the economy is growing. Productivity is going to have to grow faster to absorb the higher wage growth, particularly as employment growth continues strong, and I think the slack in the skilled labor force is getting very, very limited.

When I think, in aggregate, about the data since our last meeting, I feel a little better about inflation because it appears to be moderating, but I'm not jumping for joy because we need a few more months. However, the growth information has been, instead of mixed as at the last meeting, generally stronger, and that does make me feel better. In net, then, based on the recent information, I'm even a bit further along on the side that the risks have moved higher for inflation than on the side of the risk of a slowdown in the economy. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Warsh.

MR. WARSH. Thank you, Mr. Chairman. I thought I'd provide just a couple of perspectives, first on the 2006 economy and then, by extrapolation, on the trends in '07. With respect to 2006, I think the economy outperformed market expectations and Greenbook expectations, for probably at least four reasons. The first is the underlying strength of the employment market, which has been much discussed today. Second, the strength and durability of household finance, which, as Vice Chairman Geithner said, turned out to be far more determined by W-2 income than some of the household balance sheet items like home equity and stock market effects. But we need to take another look at that trend in 2007. Third, the economic outperformance in '06 had much to do with the resilience of the U.S. capital markets as evidenced in credit spreads and other financial instruments, particularly in the face of some rather seismic events—one-time, potentially systemic events like the Amaranth Advisors collapse; cyclical price spikes with respect to commodity prices that may well have been somewhat demand-driven; a series of supply shocks driven by oil; and a seeming transition to slower growth in the middle of the year. Fourth were the continued powerful sources of liquidity that smoothed the transition over the several bumps in the road.

I also looked at what the most reliable and the least reliable indicators of the state of the economy in '06 were to see whether those signposts might hold for '07. I think the tax receipt information that we saw in '06 was telling us that incomes were likely ahead of trend—tax receipts for '06 were up a total of 11.6 percent. Corporate profits, which were up 92 percent in the past four years, had another remarkable year, up in the mid-teens. Stock prices, obviously closely related to corporate profits, were up 84 percent in the past four years and up about 15 percent in 2006. Credit spreads continued to trend tighter; high-yield spreads were down about

100 basis points from September. Another couple of reasonably reliable indicators for '06 were the household survey of employment, which suggested early and often that employment growth was likely to be ahead of expectations, and merger and acquisition pipelines, which suggested a degree of confidence in the markets by business leaders and other folks involved in finance.

A less reliable indicator for 2006 growth was the shape of the yield curve, and the suggestion from most of us around the table to the markets was that the yield curve wasn't predicting much by way of recession in the short term. Another less reliable indicator was the consumer confidence and business confidence surveys, which seemed to snap all over the place, perhaps more because of geopolitical events and some short-term data than any really driving profile. With respect to inflation, it is hard to find any indicators that were very good at telling us its path, but I do think that the TIPS spread, even when there was much talk in the spring and the summer about rising inflation, seemed to stay relatively well anchored and not to move too much based on some of that noise in the data. So that indicator seems to have been reasonably good. As was mentioned earlier, monthly CPI and PCE core measures seemed to be moving around rather significantly, so it was hard for us to determine too much from them as 2006 went forward.

Taking all of that into account, as I think about 2007, I find that analyzing those indicators is not without significant peril, but let me attempt doing so. The trends appeared supportive of strong, balanced economic growth for 2007, and although inflation expectations are well anchored and recent high-frequency data appear promising, I remain much more concerned about inflation prospects than about growth. Having said that, I do think that as an institution we go into 2007 with probably even heightened credibility on the inflation front and in terms of our perspectives on the economy, which should help us over the next twelve months.

Two key themes summarize my views on 2007. First, strong employment trends should continue to support consumer spending. Second, strong corporate balance sheets and balanced global growth should support capital expenditures. Now, of those two themes, I would note that I have considerably more confidence in the former than in the latter. I'll spend another moment on that shortly. The tone of the markets appears to be exceptionally strong. Spreads have tightened, even as yields have trended back to 5 percent. Over November and December, we had three weeks, each with more than $11 billion being priced in the high-yield market. Just to give some perspective on that fact, for the year 2000 there was a total of $50 billion in the high-yield market. But what has happened in the past six weeks that might be able to inform our judgments? Double B spreads have tightened about 25 basis points, single Bs have tightened 50 basis points, and triple C spreads have tightened 70 basis points in the past six weeks, all of which continues to signal to me that the economy maintains a relative strength and that investors feel confident about the bets that they're making. In summary, I would say there are significant tails on both sides of this rather strong base case for the economy, but the economy is more likely to track above the expectations of the Greenbook.

Let me spend a couple of moments on the consumer. Contacts from two large credit card companies to whom I spoke last week expect and have seen in January the same kind of strength that they saw in December. The first three weeks of January look to be a continuation of the late but positive trend in the fourth quarter. For what it's worth, the contacts' own projections are that the first quarter will be rather strong, much like the fourth quarter ended up being. Today, we've all tried to wrestle with what the Greenbook referred to as the "unexplained strength" of household spending during 2006 to determine its effect on '07. Let me spend a couple of

moments on a hypothesis that the contacts proffered regarding that strength, which the Greenbook references in its “buoyant consumer” simulation.

What that strength may well prove is that employees worked more, earned more, and had more savings from their household balance sheets to fund consumption than the data to this point are suggesting. I think that could turn out to be the case in 2007. First, people worked more. The benchmark payroll survey on total job creation may well be revised upward again significantly, like the revision of last year. Gains in service jobs may well be less counted than some of the losses in other kinds of jobs—another bias for upward revisions. The JOLTS data to which President Pianalto referred continue to be very positive, suggesting a real dynamism in the economy that may well be accelerating. Participation rates may continue their recent spike as new workers selectively choose to enter this marketplace. Average hours worked moved up in the fourth quarter to an annual rate of 2.2 percent, and that trend could continue. So monthly employment gains have not proved much harder to achieve as we approach what we thought was full employment, and the NAIRU may be lower than estimated. Second, people certainly may well have earned more. Average hourly earnings were up 4.2 percent for ’06, an acceleration that was rather widespread from ’05 measures. Though the data on compensation continue to be mixed, they do seem to be trending in that direction. The divergence between profits and compensation suggests to me at least that there is large upside potential for unemployment to stay low and for wages to accelerate, perhaps in a catch-up for wage gains that we didn’t see earlier in the cycle. Third, as a result of working more and earning more, I suspect that workers may continue to spend more, particularly with the gift of what seems to be relatively low oil prices, in the mid-fifties. The oil price seems to me to have less of a risk premium and now

appears to reflect some elevated supply and at least modestly lower demand. In sum, with respect to the consumer side, I am reasonably well confident.

I'll spend just a moment on the business side of the equation. Fourth-quarter profits appear to be quite good, with two-thirds of companies beating estimates. As many of these companies are challenged to have double-digit earnings in 2007, they may look for other avenues in which to buy those earnings—in the M&A world—or increase cash outlays through share repurchases from their excess cash on the balance sheet to maintain earnings per share growth in the double digits. Another alternative is that they might choose to increase cap-ex as many of us, including myself, would have expected them to do earlier in this cycle. Doing so could have a negative effect on short-term earnings but would show some real confidence in their long-term investment and growth plans. As already mentioned, shipments and orders fell in the fourth quarter, and our working explanation is that much of that fall is really an inventory adjustment. We've had that discussion for a while. I would expect business investment and industrial production to pick up. If it doesn't do so in the first quarter, my confidence about this side of the economy, about this leg of the stool, will be significantly reduced. Between now and the next time we meet, we will have a better sense of whether that turn on the business side of the economy is real or whether we just saw a false start in December. So I think we'll be able to come to a much firmer view when we meet in six weeks. All in all, I remain reasonably confident and optimistic about the forecast. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Kroszner.

MR. KROSZNER. Thank you very much. Well, the data have come in so far according to plan, and you can thank Chairman Bernanke for doing that. I think he has some special relations with the BEA and others. [Laughter] Exactly as we had hoped they would and said

they would, the data show moderation in growth with a prospect for accelerating growth through 2007 and moderation in inflation—again, according to plan. I think my views are similar to those that President Stern put forward: The economy has shown an enormous amount of resilience.

I want to talk about a few possible puzzles in the way the data have evolved and could perhaps deviate from plan as we go forward. One puzzle is the great strength of the consumer. The consumer has been very, very strong for the past five years, and it seems that no matter what has happened—whether a housing downturn, an equity-market downturn, or a September 11—the consumer has come through rather strongly and continues to be strong. We certainly have had a slowdown in the housing market, and maybe we're waiting to see its effect on the consumer, as Don Kohn mentioned. But it may just be that some special factors have come in; for example, we have had very strong international economic growth, and perhaps that will persist. When you talk to officials and business people outside the United States, whether in emerging market economies, in the Gulf region, or in industrial economies, they are extremely optimistic, much more so than I have ever before seen, and that may continue. Obviously, there is a risk factor here. The recent strengthening in equity markets perhaps offsets some of the reduction in the asset values of homes. Lower consumer energy prices, of course, have been an offsetting factor, and labor market strength and increases in compensation have been very important. But there's an upside risk that we will continue to have very, very strong consumption instead of having our error correction go back toward more saving.

Second, with respect to investment, we have had orders above shipments for quite some time, but we have had investment actually declining, or at least not growing as we would expect. Overall in this recovery we have had weaker investment growth, and we have had very high

profitability. That raises another puzzle for me: Why have we seen somewhat weak investment over the long run and especially more recently, given that most measures of consumer confidence and business confidence have been positive, equity markets seem to be positive, spreads seem to be low, and so forth. Why are we not seeing more investment? Investment may turn around in the next quarter or so, and then we'll be out of the woods. But I think the conditions that we predict will lead to an investment turnaround have been there for quite some time, and we haven't seen the investment turnaround; and that is a puzzle to me.

Third, with respect to inflation, obviously we are all pleased that the numbers have been coming out with greater moderation. But I have a discomfort about exactly what is driving that moderation. We have good short-term stories about how the slowdown in energy prices in the second and third quarters and some other temporary factors with respect to owners' equivalent rent could be bringing down inflation. But when we consider a longer period and try to look at the systematic data, we don't see those kinds of relationships. Are we just in some sort of regime shift? Are those correlations not very good because we just haven't had a lot of variation in the data over the past ten to twenty years, and so those forces are actually there, but we just find it very difficult to pull them out econometrically? For me that is a puzzle, to be able to tell a short-term story with each of these pieces, but when I go to the staff and ask, "Well, what is the systematic evidence on it?" they say, "Well, it really isn't there." That is a bit disturbing for me in trying to figure out where things are likely to go.

Things have moved in a benign way. I don't think there's a strong expectation that they would move in a nonbenign way. But I don't have a lot of confidence that I understand why they have moved as they have. So my concern is that various shocks or other factors could come in to move them in a way that is not nearly so benign. Broadly, however, I share the views that most

people have expressed around the table that we have good growth prospects going forward and so far reasonable moderation of inflation. But precisely because we have those good growth prospects and because we may have had some temporary factors that have kept down inflation, we have to be ever mindful of the upside risk to inflation.

CHAIRMAN BERNANKE. Thank you. Governor Mishkin.

MR. MISHKIN. Thank you, Mr. Chairman. Well, I'm last in this line, and I'll try to be brief so that we can get to dinner soon. I do see signs of stabilization in the housing market, and the way to think of it in terms of spillovers is that we do expect some spillovers through the natural effect of weaker housing on aggregate demand and on wealth. But we're not seeing anything out of the ordinary or a persistent pattern, and that gives me more confidence that nothing really bad is going to happen here. My view is that the risks to the downside have decreased substantially. Also, the tone of the recent data actually indicates that what is happening concerning aggregate demand is stronger than we would have expected. As a result, I'm a bit more optimistic than the Greenbook in terms of what is going to happen next year with aggregate demand. Actually, I see, if anything, a little more risk to the upside, so I slant a bit in that direction.

The inflation numbers have been very good recently, and one view is that they are just temporary blips in the data. I tend to be a little more sanguine here because I think that there are good reasons for inflation to gravitate toward what are solidly anchored inflation expectations. That has been very important in terms of the cycle and is one reason that I'm a little more optimistic than the Greenbook on inflation. I do think that inflation expectations are strongly grounded around 2 percent on the PCE deflator. As a result, I expect us to go to 2 percent inflation over the next year and then stay there but not go below there. I don't actually like to

think of this in terms of "persistence." It is one reason that I'm unwilling to think that things will get better than that. But I do think that we will likely have a more benign path of inflation than we might have thought earlier.

Even if you think that there's a more benign path to inflation, which I'm willing to consider though we're not sure about it, it is still true that aggregate demand has blipped up recently. That is an indication that the neutral real interest rate has moved up, which is very much reflected in the Greenbook assessment. That's important because, even if you're happy about what's happening with inflation, you have to be more worried about the fact that the economy is going to be stronger. That does have some implications for the way we think about policy going forward. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. This was an exceptionally interesting, useful discussion. I thought I would try to summarize what I heard around the table. If you have comments on that, please give them to me, and then I'll add a few comments of my own.

Members noted considerable economic strength during the intermeeting period. Labor markets remain taut, with continuing wage pressures in some occupations. Consumption grew strongly in the fourth quarter, with some momentum into the first quarter, reflecting a strong job market, lower energy prices, and higher profits. Overall, investment seems likely to grow at a moderate pace given good fundamentals. Business people seem generally optimistic, and financial markets are robust.

We still have what people have been characterizing as a two-track economy. Housing, although a drag for now, does show some tentative evidence of stabilization. However, some warned about drawing too strong a conclusion about housing during the winter months. Some also noted issues of credit quality. The general view was that housing would cease to subtract

from growth later this year. Some softness in parts of manufacturing, especially in industries related to housing and automobiles, still exists. But in part this weakness may be an inventory correction that may be reasonably far advanced at this point. Despite the weakness in housing and some parts of manufacturing, there are yet no signs of spillover into employment or consumption, although some raised the possibility that we may see those later on. Some, but not all, members agree with the contour of the Greenbook that has economic growth somewhat slower in the near term, strengthening later this year, with a modest increase in unemployment. The Committee is generally more optimistic about potential growth than the Greenbook, mostly because the members assume that labor force growth will be greater than the Greenbook assumes. Overall, downside risks to output appear to have moderated, while an upside risk has emerged that growth will not moderate as expected.

On the inflation side, people noted that recent readings have been favorable, although there was disagreement about the cause, whether it was energy prices, well-anchored inflation expectations, less structural inertia, or perhaps just statistical noise. Most still expect gradually slowing inflation but are cautious and consider upside risk significant, perhaps even greater than late last year. The primary upside risk to inflation is economic growth above potential in tight labor markets, which may lead to inflation in the future if not in the near term. Others noted that inflation expectations may be too high to allow continued progress against inflation. So overall, the general tone was for a somewhat stronger economy, perhaps a slightly improved outlook on inflation, but, in any case, a clear view that the upside risks to inflation are predominant. Are there any comments?

Let me add just a few points. Everything has really been said, but not everyone has said it, as they say. [Laughter] Our goal has been, in some sense, to achieve a soft landing, and the

question is whether we have missed the airport. [Laughter] We have seen a good bit of strength in the intermeeting period, and I think the real crux of the issue is what's going to happen to the labor market. If the labor market continues where it is or strengthens further, we will see both stronger growth, because of the income effects and job effects, and continued pressure on inflation. Again, the central issue will be whether we will see enough cooling in the economy to have a bit of easing in the labor situation. This is, obviously, difficult to say. I do believe that the most likely outcome for the first half of this year is for some moderation in growth, perhaps to modestly below potential. If you look at the various components of spending and production, you note, for example, that personal consumption expenditures are likely to slow from the very high levels we have just seen recently. In particular, a lot of the spending recently was for durable goods, which tend to be more negatively auto-correlated—that is, they tend to drop more quickly when they are high in the short run. We have seen some moderation in investment, in both equipment and structures. Net exports were a major contributor to growth at the end of the year; that should probably reverse, as the Greenbook notes. A special factor there is that the good weather reduced oil imports, which led people to spend on domestic production rather than on foreign production. If that situation reverses and we go back to normal net exports, that will subtract from GDP. Also, the staff noted some likely reversals in government spending. So my sense is that we're likely to see something a little less hectic in the first half of this current year.

I think it also remains reasonable that growth will return close to potential later this year. There is certainly uncertainty about that. Clearly, we have seen some signs of stabilization in the housing market. I was going to note the effects of the winter months and the weather. I think that we should acknowledge that stabilization but not ignore the possibility that we may see further deterioration there.

Against the view that growth may moderate this quarter, or next quarter perhaps, there is opposing evidence that consumption and employment are awfully strong. Economists tend to think of consumption, in particular, as being a very forward-looking variable, and it's consistent with views that we see, for example, in consumer sentiment that people do feel reasonably optimistic about the labor market and about the state of the economy. So I agree that there is certainly some risk that the economy will be stronger going forward than we have been projecting. I don't have an answer other than to say that we obviously have to monitor the situation very carefully and continue to be willing to reassess our views as the data arrive.

Let me say a bit about inflation. Recent readings have been favorable. A couple of aspects of inflation I do find encouraging. First is that the moderation we've seen in inflation the past few months has happened despite the lack of any substantial moderation in shelter costs. Owners' equivalent rents are actually a constructed, imputed variable. They are not seen by anybody. Nevertheless, they are essentially the entire reason that inflation is remaining above our target zone at this point. I know it's a bit of a joke that I always refer to the short-term inflation numbers, but I'll do it again anyway. [Laughter] Just to illustrate, over the past three months, core CPI inflation excluding just owners' equivalent rent was 0.2 percent at an annual rate. Over the past six months, it was 1.20 percent at an annual rate. Over the past twelve months, it was 1.82. We also get numbers for PCE core inflation excluding owners' equivalent rents that are all below 2 percent. Obviously that is just carving the data, and there are lots of problems with doing that. But to the extent we think that rents will continue to moderate, and I think there is scope for them to do that, that's one factor that should make us a little more comfortable. Another factor is that there is a fairly broad-based slowing. I won't take a lot of time to go through the evidence, but particularly in the CPI there are some encouraging

developments on the services side in terms of inflation to go along with the slowing in goods prices.

Now, I am the first to acknowledge that lots of interpretations of the recent developments are possible. We hope that favorable structural factors are at work. One possibility certainly is that the wage increases are a catch-up for previous productivity gains and that we're seeing a normal restoration of capital-income/labor-income relationships. In that case, this may be in some sense a transitory adjustment that will restore those relationships and not necessarily contribute to inflation going forward. Another possibility is that energy price effects are somewhat larger than we thought. There seems to be some evidence that they are. A third possibility is that what we saw earlier last year was, as Governor Kohn mentioned, a transitory upside, some of which has simply passed, and we are going back to the more fundamental rate of inflation. So there are some structural reasons that inflation might be moderating.

My having said that, we should certainly acknowledge the statistical noise that is inherent in these measures. The monthly standard deviation of core inflation in 2006 was about 8 basis points. If the true underlying inflation is 0.2 percent, then you have a very good chance of getting either 0.3 or 0.1. Therefore, we and the financial markets ought to be braced for the possibility that we will get 0.3—I hope not worse—in the next few months. I agree with the view that has been expressed that the trend has not yet been established, and we'll have to follow its development. Another very important point that has been raised—President Moskow, I think, was the first to raise it—is that, given the lags from economic activity to inflation that we see in standard impulse-response functions and so on, these improvements may be real but nevertheless temporary and the underlying labor market pressures and so on may lead to inflation problems a year or eighteen months from now. I agree that it is a concern, and it goes back to my point

earlier that we need to be very alert to changes in the pattern of aggregate demand going forward. As President Poole mentioned, one element that will help us is the endogeneity of financial conditions. We haven't done anything since the last meeting, but long-term real interest rates rose about 30 basis points. The yield curve is still inverted by about 30 basis points. So I think even the markets themselves have the ability to raise real rates quite significantly, enough certainly to make a difference in the mortgage market if the data continue to be strong and if inflation does not continue to subside. Then we would have a bit more latitude as we try to determine whether the fourth quarter was a blip or a trend. I think that's still an open question.

So let me just say that I broadly agree with what I heard. The economy does look stronger. That is an upside risk to which we need to be paying close attention. Inflation looks a bit better, at least in the short term, but there are some long-term considerations that we need to keep in mind. Finally, the basic contours of the outlook are not sharply changed, but I agree with the sentiment around the table that upside risk to inflation remains the predominant concern that the Committee should have. Are there comments? Yes, President Poole.

MR. POOLE. We have two important pieces of information coming in at 8:30 tomorrow morning. I hope the staff can give us a quick first read to start our meeting. I know that instant analysis is risky, but I ask for it anyway. [Laughter]

MR. STOCKTON. And I will provide it. [Laughter]. Whether it's worth anything or not, I don't know. [Laughter]

CHAIRMAN BERNANKE. We'll start the meeting with the data. Anything else? There's a reception and dinner in Dining Room E. It's for those who wish to attend. If you have other plans, please feel free to pursue them, and we'll see you tomorrow morning at 9:00.

[Meeting recessed]

January 31, 2007—Morning Session

CHAIRMAN BERNANKE. Good morning, everyone. Let's start with asking Dave Stockton to report on this morning's data.

MR. STOCKTON. So, Mr. Chairman, this was sort of done on the fly. Unlike the BEA, I won't be able to go back and revise these remarks. [Laughter] Total GDP this morning came in at 3½ percent. That was 0.9 percentage point stronger than we had forecast in the Greenbook. There were really two sources of our miss in the fourth quarter. Of that miss, 0.5 was the net export component, which Karen will speak about in a second, and 0.4 was nonfarm inventory investment. So perhaps Karen will give the quick story on the net export side, and then I'll complete the report.

MS. JOHNSON. The net export numbers are based on trade data only for October-November, and we each make an estimate of what December is going to be. Perhaps half of our miss, or not quite half, was due to differences of opinion about December. Looking at what they've done for December, we will take some information from that. Some of what they've put in December is information that we didn't otherwise have. To some degree, it's statistical and not really about trade. It's something called a territorial adjustment. Maybe a quarter is differences about things in December for which we are not prepared to change our minds at this point. So we would not go to as strong a positive contribution from net exports as they go because we retain some difference of views about what the December numbers will turn out to be. The other bit of news we received was very strong exports of services. We'll take that, and we'll probably give most of the adjustment, but not quite all of it, in the number we write down next for Q4. We will actually want to reverse that thing called territorial adjustment in Q1. So

we're actually going to make imports stronger and the net export contribution slightly more negative in Q1 as a result.

MR. STOCKTON. That's basically half of our GDP miss. The other half is on the inventory investment side. Just like with Karen, about half of our miss on inventory investment has to do with a difference of opinion about what the December book value figures will turn out to be. So it's just a difference between the BEA's estimate for December and our estimate for December. I don't think we'd be inclined to alter our December estimate, so we'd write off roughly half of that miss on nonfarm inventory investment. We don't do that great a job of forecasting those book value inventory figures either. It is not as though we have lots of information or a good reason for staking ourselves to our forecast versus the BEA's, but I don't think they have any more information than we do. As for private domestic final purchases, which we have been emphasizing, even given some of the recent noise in net exports and government, there we were, in fact, almost exactly right; we were off by 4 basis points in terms of its contribution to overall GDP. In terms of the composition, consumption was a bit weaker, and equipment spending a bit stronger, probably because of BEA's estimate of the share of autos being sold to businesses versus households. So we don't really see very much information there. On net, government was a bit weaker: The federal side was weaker by more than the state and local side was stronger.

MS. MINEHAN. What was the number for domestic final purchases, Dave?

MR. STOCKTON. I actually don't know what the domestic final purchases were, but if you include the government, which they do, they were a little weaker than the number we had written down.

MS. MINEHAN. No, the overall number.

MR. STOCKTON. Yes, I don't know what the overall number is; I know only what the contributions are. We'll be able to get the overall number by break time. Taking on board our differences of opinion about the December figures, we'd probably be writing down, with the release in hand today, a GDP estimate for the fourth quarter of about 3 percent rather than the 3½ percent that is being currently published—and in contrast to the 2½ percent we wrote down in the Greenbook.

So then the question is, What does this imply about the overall momentum of activity going into the first quarter? My answer has to be "not much," and I don't think this is just blind stubbornness, although I'm glad my wife is not here to dispute that particular characterization. [Laughter] But about the two surprises—as Karen already indicated, they would be inclined to actually mark down their contribution of net exports to GDP growth in the first quarter on the basis of the net export side. We would probably be inclined to do the same thing with respect to the higher inventory investment, and so we're coming into the first quarter with somewhat higher inventory-sales ratios and maybe some indications that we're not as far along in working down inventories as we had thought. I'm glad that I don't actually have to write down that first-quarter number today because we will have an employment report on Friday and some first real readings on the pace of activity in the first quarter by the end of the week and in the next week or two. So basically I'd argue that there isn't a lot of signal in that 3½ percent figure that we're moving into the first quarter with much thrust. Another reason for not necessarily marking up activity as we move into the first half of this year, even though GDP came in 1 percentage point above our estimates, is that real disposable income actually came in 1 percentage point weaker than our Greenbook estimate. So it isn't as though, with the higher growth rate of activity, we have more underlying growth in labor income that is likely to be spent going forward. We have an even

lower saving rate now in the fourth quarter than we have written down. Thus I think there are several reasons for not necessarily reading this as a sign of greater strength moving into the first part of the year.

On the inflation side, things were actually spot on. Total PCE inflation was minus 0.8 percent. That's what we had written down in the Greenbook. Core PCE was 2.1—also exactly what we had written down in the Greenbook. Market-based core was 1.7; that was actually 0.1 percentage point better than what we had written down in the Greenbook. The other major release this morning was the employment cost index, which showed a year-over-year increase of 3.2 percent. That number also is exactly what we had written down in the Greenbook, so I don't think we really see any difference. Obviously, the number has continued to be very subdued. So in the totality, on the inflation side, things are looking very close to our expectations and I think still pretty good. Mr. Chairman, that's all I have to say.

CHAIRMAN BERNANKE. Thank you. Are there any questions? If not, Vincent.

MR. REINHART.[3] Thank you, Mr. Chairman. I'll be referring to the handout "Material for FOMC Briefing on Monetary Policy Alternatives." As noted in the top left panel of your first exhibit, the path of policy expectations rotated up over the intermeeting period, and investors now apparently anticipate the federal funds rate to move down only about ½ percentage point over the next couple of years. As related in the panel at the top right, primary dealers are unanimous in expecting no change in the policy rate at this meeting. Indeed, nearly all the dealers believe that you will hold the funds rate steady through the May meeting. As to the wording of the statement, some dealers are calling for a more upbeat assessment of the economic outlook, but almost all expect no change in the Committee's assessment of risks. In the Treasury market, as shown in the bottom left panel, this shift in policy expectations was associated with a rise of about ⅜ percentage point in nominal yields—the movement from the dotted to the solid black lines—and a smaller increase in their real counterparts—the dotted to the solid red lines. Thus, inflation compensation, the vertical difference between the lines, edged higher across maturities. According to the Desk survey, as in the table at the bottom right, dealers marked up their outlook for real GDP growth and lowered their assessment of inflation for this year, although the changes were small. If you examine the high-frequency movements of the ten-year nominal yield, about 20 basis points of the

[3] Material used by Mr. Reinhart is appended to this transcript (appendix 3).

increase was registered in windows around economic data releases—that's the red bar in the middle right panel—suggesting that the revisions to the growth outlook apparently predominated in shaping investors' thinking about your near-term behavior. Federal Reserve communications—the statement, the minutes, and speeches—had no net effect on yields. But as the gray bar shows, a sizable portion of the rise in yields cannot be linked to data or other identifiable news releases. A similar measure of our ignorance in explaining yields comes from the arbitrage-free models of the term structure that we regularly follow. Those models (not shown) suggest that about ¼ percentage point of the rise in the ten-year yield was due to an increase in the term premium.

The same combination of a modestly higher track for activity and a lower one for inflation was a highlight of the simulations of the FRB/US model reported in the Bluebook and repeated in exhibit 2. The trajectory of the nominal federal funds rate that best achieves your aims—subject to the many assumptions necessary to make this exercise work—has shifted up over much of the projection period, whether you have an inflation goal of 1½ percent or 2 percent. One consideration for the policy choice at this meeting is which charts in those two columns entice you. With a 2 percent inflation goal, you can keep the funds rate unchanged for some time because you can very nearly declare victory at the prevailing level of inflation. In contrast, to make progress toward a 1½ percent inflation goal, you've got a bit of work to do, as the sluggishness of inflation expectations and the flatness of the Phillips curve in the FRB/US model make it costly to disinflate. Indeed, this simulation puts the nominal federal funds rate around 6 percent by year-end.

This observation on the inflation goal is mapped into two monetary policy alternatives at the top of exhibit 3. The quarter-point firming of alternative C would be particularly attractive if, besides having an inflation goal below the prevailing rate of inflation, you harbored significant concerns about the underlying strength of aggregate demand and potential cost pressures. For instance, you might view the recent string of favorable data on spending as suggesting upside prospects for aggregate demand, perhaps along the lines of the "buoyant consumer spending" alternative simulation shown in the Greenbook. The results of that exercise are plotted as the green lines in the middle panels for the federal funds rate, the unemployment rate, and core PCE inflation, respectively, along with the baseline outcomes as black lines. With more pressure on resources and inflation running higher, an estimated policy rule predicts a federal funds rate heading to 7 percent. Another source of concern may be inflation expectations. Inflation compensation derived from the Treasury market, plotted as the solid line in the bottom left panel for the next five years and the red line for the five-year, five-year-forward rate, moved in a fairly wide range and rose a touch on net over the intermeeting period, perhaps undercutting some of the claim that inflation expectations are well anchored.

The case for holding the funds rate at 5¼ percent, as under alternative B, would be strengthened if you have an inflation goal of 2 percent. In addition, the central tendencies of your forecasts for the unemployment rate and core PCE inflation

reported in yesterday's chart show suggest that some of you believe that there is a more favorable tradeoff between the two than does the staff, perhaps along the lines of the "lower NAIRU" alternative simulation in the Greenbook (the red lines in the middle panels). Even if you viewed inflation running at or above 2 percent as uncomfortable, downside risks to employment and growth, especially given the uncertainties surrounding the ongoing housing market correction and possible spillovers to other components of spending, may tip the balance toward keeping the funds rate unchanged for now. If those risks do not materialize, the same process in financial markets that operated over the recent intermeeting period will likely operate in the future, as President Poole and Chairman Bernanke noted yesterday. That is, with market expectations of the funds rate still tilted down, as plotted by the dashed line in the bottom right panel, yields will back up further as investors come to realize that policy easing will not be forthcoming, adding to financial restraint. Also note that market-based confidence bands surrounding investors' expectations, derived from interest-rate caps and shown by the blue fan chart, are narrow in the near term but then widen markedly. Thus, market participants see ample scope for policy action—in either direction—in coming quarters.

The last exhibit gives the latest version of table 1, which circulated Monday. It trims the wording of alternative B to be a little more upbeat about firmer economic growth in section 2, which feels right this morning. I also hope that you might reflect on the risk assessment offered in section 4 of alternative C. The language about policy firming that you've repeated for the past few meetings seems a little stale and potentially misleading if you are not confident that your next policy action will be to tighten. Talking about the relative odds of action might be a more durable structure. But this might be a discussion for a later day out of concern about an inappropriate reaction in financial markets today.

CHAIRMAN BERNANKE. Thank you. Are there questions for Vincent? Vice Chairman Geithner.

VICE CHAIRMAN GEITHNER. This is more an observation than it is a question. I guess I'm a little uncomfortable the way you framed, just in the paper, exhibit 3, in the sense that I don't think it would be great if we came to view alternative B in the statement as, in a sense, validating a higher implicit inflation objective than members of the Committee heretofore talked about. It is true that, with the stance of policy implied in markets today, under reasonable assumptions you may not get below 2 percent any time soon. But if you have different assumptions about the structure of the economy, about the way inflation works in this economy,

or different views about the period that's optimal for bringing inflation down, it's plausible that you could have a forecast that gets inflation below 2 percent with the stance of policy not dramatically different from what's in the Greenbook. I know that you didn't mean to imply that, but I don't think it would be good for us to create a sense of validating the monetary policy expectations that are in the markets or in the Greenbook. We would be accepting that we have allowed our implicit objective to drift up.

MR. REINHART. You probably won't have that trouble in public because among the things that will be released is your central tendency forecast and it does have a steeper decline in core PCE inflation than the staff's forecast does. So keeping policy unchanged at this meeting does not validate a 2 percent inflation goal; it just means you might have a different view.

CHAIRMAN BERNANKE. We're ready to begin our policy go-round. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. I'll start off by saying that today I favor maintaining the federal funds rate at 5¼ percent. As we discussed yesterday and we learned this morning, the picture that seems to be emerging from the latest economic information is one of reasonably strong underlying growth, which has been temporarily weakened by housing and autos. Given that temporary weakness, I think it would be premature to raise rates today; but I am not confident that core inflation will continue to decelerate in the coming quarters, and that could risk our credibility. The level of inflation continues to be higher than I'd like to see, and in my forecast we may not see a return to price stability unless monetary conditions are tightened further. Although I don't think today is the day to do it, I do want us to consider tightening if we see growth accelerating back to trend more quickly than in the Greenbook. I say this not because I think that growth will put upward pressure on inflation but because the associated equilibrium

real rates that are implied by that higher growth, which we are beginning to see in the marketplace, will eventually force our hand. As I mentioned in my remarks on the economy at the past two meetings, I have been of the mind that a somewhat slower economy, combined with a constant funds rate, might be sufficient to ensure a decline in core inflation. As the economy strengthens, that scenario becomes a little less likely. If the economy continues to strengthen, a failure to act not only puts our price stability goal at risk but also risks our credibility with the public.

Thus it would be ill-advised to suggest in our statement that we are finished acting for a while, and therefore I would not favor the language that Bill Poole circulated last week. My preference is for the language describing the rationale given in alternative C in table 1 of the Bluebook. The rationale in alternative C, including both sections 2 and 3, is really not more hawkish than the language of alternative B, yet it's more concise and comes closer to my views on the current state of the economy. Indeed, since under alternative B, section 3, or alternative C, section 3, we would be making sizable changes in the language from our last statement, I also think that it's appropriate at this time to purge the language about the high level of resource utilization having the potential to sustain inflation pressures or lower oil prices to mitigate core inflation. All the recent work on the forecasting of medium-term and longer-term inflation that I have seen says that these Phillips-type models don't help us forecast core inflation very well. The FRB/US model of the Greenbook looks as though it has very flat tradeoffs, certainly in the near term anyway; so I think it would be useful to change our language at this point. I have not been a fan of that language, but in the past I was persuaded that we should leave it so as to avoid unnecessary changes that might confuse the public. But since we are considering changes at this time, I would favor going with alternative C, which gets rid of this language. I'm happy to

continue with the risk assessment that we had last time, eliminating the word "nonetheless," although frankly I would not greatly resist actually going with the assessment of risk in alternative C. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. President Plosser, just so I'm clear, which sections from C?

MR. PLOSSER. I advocate leaving the federal funds rate section as is but using sections 2 and 3 from alternative C as our rationale.

CHAIRMAN BERNANKE. Thank you. President Minehan.

MS. MINEHAN. Thank you very much, Mr. Chairman. I, too, am in favor of maintaining policy at its current level. I find myself somewhere between policy alternatives C and B as described in exhibit 3, leaving out, as Vice Chairman Geithner suggested, any commitment to either of those goals. I am concerned about housing and the possible spillovers. However, the underlying pace of growth and activity within the economy does risk taking inflation up from where we think it's going to go, changing the path of it slightly. The Chairman and a couple of other people mentioned yesterday the uptick in medium-term to long-term bonds. A good point to be made here is that most of the action in the markets has resulted from the release of economic data. Given at least the surface gloss of the GDP report, I imagine that the markets will be firmer rather than softer, will expect less movement on our part, and could move up at the long end and create some lessening of financial accommodation, in effect making financial terms a bit more restrictive. So I think we will get some help from the market reaction to the current economic data. Those things together—my continuing concern about the housing situation, though I think it is stabilizing, and a bit tighter markets than perhaps we expected—tend to weigh in my mind against my concern that the inflation path in our forecast will not be realized. So I am content for the time being with alternative B. As I said in my comments

yesterday, if we continue to see the same pattern of things, sooner rather than later we may have to contemplate, to manage the risks in the economy, an upward movement in monetary policy; but I would not suggest that for today.

Turning to the language, I suggested a couple of days ago that we use section 2 from alternative C. There have been some modifications to section 2 in alternative B. I am okay with those, but I continue to believe, as does President Plosser, that section 2 in alternative C is a bit cleaner, a bit shorter, and a bit more reflective overall as to the way I see things. But I could go with either B or C at this point. Vince mentioned that we might want to think about section 4, the assessment of risks. I had made a recommendation there as well—one somewhat similar to what he was implying we might want to think about in terms of the Committee's judging that inflation remains a predominant concern. I think that's a little stronger than "the Committee judges that some inflation risks remain." I would take the remaining phrase of that sentence out—about near-term policy firming being more likely than policy easing—as I think that might be a big shock. But changing the language to "inflation remains the predominant concern" and then picking up with "future policy adjustments" would make a small change to the inflation risk section, would focus people a bit more firmly on that, and would be a step in the right direction of cautioning the markets about the possibility, though perhaps not very high yet, that our next move might be up rather than flat for a long period or down.

So just to sum up, I am okay with alternative B, section 2. I'd prefer section 2 from alternative C, but I'm okay with B. I would make a change in the assessment of risks. I can live with it the way it is, but I think the alternative C change that I have recommended is a little cleaner and moves in the direction that Vince was talking about.

CHAIRMAN BERNANKE. President Minehan, for the risk assessment, in alternative C, are you proposing also the second sentence?

MS. MINEHAN. Yes, just taking out the phrase from "and" to "easing": "The Committee judges that inflation remains a predominant concern. Future policy adjustments will depend on the evolution of the outlook for both inflation and economic growth, as implied by incoming information."

CHAIRMAN BERNANKE. Thank you. First Vice President Barron.

MR. BARRON. Thank you, Mr. Chairman. Let me say at the outset that I was truly impressed with your summary of everyone's comments yesterday. If I had known that you were listening so intently, I might have scrutinized my own comments a little more. [Laughter] Many participants, as you summarized, reported an improved outlook in housing and, perhaps to a lesser extent, an improved outlook for inflation. To play off our immediate past Chairman's phrase, I think it might be appropriate to guard against what I might call "premature exuberance" on both fronts with regard to the bottoming out of housing and the improvement in inflation. I don't think we gain much at this point in the business cycle by declaring victory on the housing front, and I didn't hear anyone say that. But I think we have to be cautious in our comments as it could well prove to be a drag going forward.

For the overall economy, my own take is that we have more upside potential than perhaps we have seen so far, putting aside this morning's report. Corporate balance sheets remain extremely strong. Although I do not anticipate that profits in 2007 will match the levels that we saw in 2006, I see no reason that they would drop below trend, and perhaps they will even come in above trend. With that as a backdrop, the job outlook might even be brighter than we've discussed. If the job market remains firm, I would have every reason to believe that the level of

participation outlined in the Greenbook might be understated, and so we could well have more positive income effect from the consumer going forward than we've witnessed or that we are thinking of for the future. A final point relates to exports. Yesterday evening I looked back over the information we had with regard to the consistency of a high level of performance of all the economies of the world. I couldn't find a time in which we had all the economies of the world performing at the level they are today. If you take that into consideration and put aside, as Dave so eloquently noted, the special factors that we had in the fourth quarter in exports, we could well see a more positive effect going forward in net exports.

On balance, though, I still have a concern that the effect of housing going forward will be a drag. However, I fully anticipate that, at the national level at least, we will be able to bounce back in the second half. If we do bounce back in the second half in housing, then GDP growth could well exceed what we are forecasting now. All of that said, I'm very comfortable with the current stance of policy. I'm not going to try to wordsmith on the fly. My own bias is to be somewhat supportive of alternative B as presented this morning. Thank you.

CHAIRMAN BERNANKE. Thank you. President Hoenig.

MR. HOENIG. Mr. Chairman, I'm very comfortable with alternative B as far as the rate goes. Given what we don't know today, I think that's exactly where we ought to be. We will know more over the next six months about how that should be adjusted as we move forward. On the language, I feel that we would be better served with sections 2 and 3 of alternative C. That language describes my own views and much of what I heard yesterday, especially as it says "seems to be rebounding" and "some tentative signs of stabilization." "Going forward the economy seems likely to expand at a moderate pace" is good language. Then, more important, I would like to see in section 3 that "readings on core inflation have improved modestly in recent

months but remain elevated." Going forward, that is the essential issue I think we have to watch besides the economy. That's why I believe that language is preferable. The risk assessment as described in alternative B is fine. Thank you.

CHAIRMAN BERNANKE. Thank you.

VICE CHAIRMAN GEITHNER. Mr. Chairman?

CHAIRMAN BERNANKE. Vice Chairman Geithner.

VICE CHAIRMAN GEITHNER. May I ask a clarifying question? It's not actually clear to me, really, that alternative C, section 3—the inflation section—is more hawkish than alternative B.

MR. HOENIG. It's not.

VICE CHAIRMAN GEITHNER. So you were speaking in its favor not because it is more hawkish but for what reason?

MR. HOENIG. Because it describes what is, and that is that inflation is elevated.

VICE CHAIRMAN GEITHNER. My concern is that, as the Chairman has said, if you look at the three-month annualized rate for a whole bunch of measures of core, "elevated" might be overstating it a bit.

MR. HOENIG. It isn't to me, because 2.6 year over year is elevated.

CHAIRMAN BERNANKE. The original intention was to capture the last relatively few monthly readings, so there is a bit of ambiguity there.

MR. HOENIG. My point is that what you're describing is the systematic move down, and the margin is bringing the average down, and that's what you say: "Readings on core inflation have improved modestly in recent months but remain elevated." So long as we can convey that, I think the markets will read us more properly because, even though the three-month

may be coming down, it's still 2.6 percent year over year rather than where I thought last June it would be, which was 2.4. So it has improved, but we're not to where we need to be, and that's my point.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Mr. Chairman, I was a bit loquacious yesterday and apparently, for some, too anecdotally explicit, if not excessive. [Laughter] So I'll be less frisky this morning, shorter, and more to the point. I support alternative B. I don't want to wordsmith it. The only word I would want to add, which I won't get, is "worldwide," which I would insert after "resource utilization." That's a reality, and that's my recommendation, Mr. Chairman. Thank you. I'm sorry if I took too much time.

CHAIRMAN BERNANKE. No problem, President Fisher. Thank you. President Yellen.

MS. YELLEN. Thank you, Mr. Chairman. I support Bluebook alternative B. I think we should maintain the current stance of policy because it is likely to foster an economy that gradually moves toward a soft landing. At the same time, the upward bias in the risk assessment is consistent with my view that upside risks do predominate for both growth and inflation. My best guess still is that this year's growth will be slightly below trend with the current stance of policy. But as I indicated yesterday, for me the risks have shifted more to the upside given recent news. Housing remains a concern, but I think the prospects for a really serious housing collapse that spreads to consumer spending have diminished substantially. I am focused, as I said yesterday, on upside risks to activity, possibly coming from consumer spending. On the inflation front, the news has been good, and I continue to think for a variety of reasons, including my views on persistence, that core inflation will edge down over the year; but clearly it is too

soon to conclude that a new trend has set in. To me, the upside risk to inflation seems palpable, especially because labor markets have tightened. Although I agree with President Plosser that the Phillips curve has certainly appeared to flatten in recent years, most estimates that I have seen of Phillips curves suggest that the relationship between changes in unemployment and changes in inflation, even though it may have become smaller, is still significant. The lags may be long so that its effect might not show up very much over the next couple of years, but it is a significant source of long-term risk.

I'm pleased with the language suggested for alternative B. I think it effectively updates developments since our last meeting, and I favor keeping the same wording on the risk assessment that we used last time. That wording still conveys a sense of upside bias. I don't see a compelling reason to change, and I think it still works.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. I support no change in the federal funds rate today. From our comments yesterday, it appears that not much has changed in terms of our outlook for growth and inflation. So I'd prefer to make only the changes to our statement that are necessary to keep us current with the intermeeting data reports. I'm comfortable with the language in alternative B. It updates what we've heard in terms of the current reports. However, I also agree with Vincent's comment that our language in our assessment of risk has become stale. I felt that way in December. But we're not operating with a clean slate, and any significant changes to the language today are probably going to be interpreted as an attempt to signal some significant change in our outlook or risks to that outlook. So I agree that today is not the day to do that, but I hope that we'll have some further discussion about how to use some language in our statements that is more durable. For now, alternative B looks right to me. I have

one final comment. For the record, I agree with Vice Chairman Geithner's comment about not interpreting our actions today or our thought about the path for the fed funds rate as a suggestion that we have a different objective on inflation. I think that Vice Chairman Geithner made a good point, and I want to support it. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Minehan.

MS. MINEHAN. Just an interjection—I would also like to be on record as not assuming that the Committee has an explicit objective. Individuals around the table have indicated comfort zones of one range or another, but as far as I know the Committee has no explicit objective. We all want to have the best policy we can for inflation and growth in a given period.

VICE CHAIRMAN GEITHNER. I tried to qualify my comment with as many qualifiers as I could: I didn't mean to imply that the Committee had an implicit objective.

MS. MINEHAN. Thank you.

CHAIRMAN BERNANKE. President Pianalto.

MS. PIANALTO. I agree. I was commenting on my own outlook. Because of some of the differing assumptions that we talked about yesterday, I just didn't want to be in the camp of a 2 percent objective.

CHAIRMAN BERNANKE. Thank you. President Moskow.

MR. MOSKOW. Thank you, Mr. Chairman. I agree with the sense of the Committee that we should not be raising rates today. However, I do think that, as we've all said, the inflation risks still dominate and that we're approaching some very important decision points in the next couple of meetings. If we look back, of course, the primary risk to our growth forecast has been housing. We have seen an incredibly sharp decline, and many of us have the sense that housing is stabilizing now. There's still some uncertainty about that, but it seems to be

stabilizing. Once it stabilizes, our attention will shift to the other part of our dual mandate—to price stability. As I think we have all said, we're uncomfortable with the current rate of inflation. There has been some improvement; we'll take that to the bank. We're happy with that. But there is still a lot of uncertainty about the future course of inflation, and the projections in the Greenbook and the Bluebook are not encouraging to me. My comfort zone is 1 to 2 percent, so I'm in the 1½ percent category. In view of that range, as Vince said, we have work to do. I agree with Tim and Sandy that we shouldn't interpret alternative B as saying that each individual has a target of 2 percent. Our projection for inflation is 2¼ percent in both years, and that is clearly above that target. We have said we're concerned about inflation—we said that last time, and I think it was well put. But we should make even stronger statements in the minutes about the costs of inflation running above forecast and about the damage it can do to the economy on a long-term basis. As I said, I don't think we have the luxury of waiting until inflation rises before we act. We have to be forward-looking. The next couple of meetings are going to be important because we'll know a lot more about whether housing really has stabilized further and what the inflation numbers will look like. In terms of the language, I'm comfortable with alternative B as it's stated. I like the reference to the high level of resource utilization in section 3, so I would not change the language at this time.

CHAIRMAN BERNANKE. Thank you. President Stern.

MR. STERN. Thank you, Mr. Chairman. As I commented yesterday, it seems to me that developments, in terms of both real growth and core inflation, have been positive recently, and I would say the same thing about the outlook. Against that background, I think that maintaining the federal funds rate as in alternative B is the appropriate policy decision. I'm willing to be patient to see how much disinflation we get from here. But I guess my patience isn't infinite,

and so at some point, if we don't get any more than is anticipated in the Greenbook, we're going to have to consider further action. But at the moment, that's not a principal concern of mine. So that's my judgment about the stance of policy for now.

As far as the language is concerned, I have a preference for sections 2 and 3 from alternative C. I find those more appropriate than the expressions under alternative B. As far as section 4 is concerned, there could be a case for some abbreviated version along the lines that President Minehan suggested. Alternative B, section 4, has really served us well overall, and so my judgment is that at this point it's not worth trying to change that language. So I would recommend marrying sections 2 and 3 from alternative C with section 4 from B as being about as good as we can do at the moment.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. By way of preface—I didn't mention this yesterday, but my semiannual forecast projects core PCE inflation falling to 1.6 for '08, and growth rising from 2.6 to 2.9 in '08. This represents both a more-rapid return to price stability and a higher rate of trend growth than provided in the Greenbook. My forecast takes seriously the instruction to assume appropriate monetary policy, perhaps more seriously than I have taken it in the past. I think it is likely to require that the policy be more aggressive than assumed in the Greenbook and that communications be forceful about our intentions to bring inflation down. I think the forecast that I have submitted is both feasible and desirable because I think we don't need to use the output gap as our sole means of hammering inflation expectations and we don't need to wait nearly a decade, as in the Bluebook simulations.

Although I believe that the appropriate policy is likely to require a higher funds rate path at some point this year, I'm not too uncomfortable leaving it unchanged today. I welcome the

recent good news on core inflation, and like President Stern, I'm willing to wait and see whether the good news continues. However, I have been disturbed over the past year and a half, as I have told you, about the extent to which short-run core inflation and longer-run inflation expectations appear to be sensitive to energy price movements. We appear to have conditioned people to expect core inflation to rise whenever energy prices surge. This will pose a problem for us if energy prices rise substantially or if the current lull in core inflation proves to be only the transitory effect from the recent fall in energy prices. Both hypotheses seem reasonably plausible to me for the coming year or two. So I believe, as President Moskow and others have said, that we're likely to face another inflation challenge later this year. I think it would help our cause if our policy moves were coupled with better communications, but that is a discussion for later today. For now, I'm prepared to support standing pat.

I agree with President Plosser and others around the table who prefer the language in alternative C for sections 2 and 3. I also agree with President Minehan about the language in alternative C for section 4. I think that I read "predominant concern" as a little stronger and better calibrated to our views—or at least my views—than the language in B. I also agree strongly with Vice Chairman Geithner that standing pat today doesn't imply a 2 percent target.

CHAIRMAN BERNANKE. Vice Chairman Geithner.

VICE CHAIRMAN GEITHNER I'm not sure I understand, Jeff. With regard to section 4, what is your preference?

MR. LACKER. President Minehan's suggestion.

CHAIRMAN BERNANKE. Yes. President Minehan.

MS. MINEHAN. This is the problem with editing on the fly. I had recommended that you go directly from "the Committee judges that inflation remains the predominant concern" to

the next sentence—"Future policy adjustments will depend on the evolution of the outlook for both inflation and economic growth"—and so on. However, leaving out the phrase that is in alternative B now in section 4—"the extent and timing of additional firming that may be needed to address those risks"—actually does make that sentence of section 4 of alternative C somewhat weaker than alternative B. I'm getting ready to take my suggestion off the table [laughter] because I think that you may be on to something with alternative B, and it may be better to leave it that way because it does suggest additional firming as opposed to leaving it open.

MR. LACKER. It's a fair point. I'd agree with that.

MS. MINEHAN. I take my suggestion off the table.

MR. LACKER. I withdraw my support for your previous suggestion. [Laughter]

CHAIRMAN BERNANKE. You can't withdraw it; she's not making it. [Laughter] President Lacker, please just say a word about how we are linking energy prices and core. In our public remarks—for example, my speeches on energy—I have talked about the importance of unlinking those two.

MR. LACKER. Yes, indeed. But if you just plot the two for the past year and a half, you see a kind of two-month or three-month echo into the core. You calculate the cross correlations. They were pretty high before 1984; they were low from 1984 to 2001. They've been high again since. My reading of the financial press coverage of macroeconomic conditions following the hurricanes in late '05 is that we saw a sudden burst of references to the macroeconomic conditions of the 1970s. I suspect—it is hard to disprove this one way or another—that rhetoric harkening back to slowing growth and energy prices causing higher inflation induced, in the public's mind, a sense that, when energy prices surge, growth is going to be lower. You saw the policy path come down in September of '05, and you're going to see higher core inflation, and

that's what we saw that fall. To some extent, we tried to speak strongly of our desire to hold inflation down, but in hindsight we left that association in the public's mind. So I just think this is a conditionality that appears now to have been built into expectations.

CHAIRMAN BERNANKE. Governor Kroszner has a two-hander.

MR. KROSZNER. A two-hander on the now-disgraced proposal on section 4. [Laughter] I think the way to raise it back is just take the phrase "the Committee judges that inflation remains the predominant concern" and then move on to the sentence in alternative B that starts with "the extent and timing of any additional firming."

MS. MINEHAN. We could definitely do that.

MR. KROSZNER. If you want to keep it, I think that's the way to bring it back to grace.

CHAIRMAN BERNANKE. President Moskow has an intervention.

MR. MOSKOW. I was going to make exactly the same suggestion—to put it on the table for consideration by President Minehan. [Laughter]

MR. KROSZNER. It also has the virtue of minimizing the number of word changes and just substituting a phrase from the minutes from last time, for those of you who think that's the best way to go.

CHAIRMAN BERNANKE. But I just raise a question, for those who are making the suggestion, because I'd like to hear your response. In saying that inflation is the predominant concern, we are acknowledging more explicitly than we have before that we have other concerns. That is, we're in some sense bringing into the assessment the presumption that there are concerns other than inflation, but we are perhaps more concerned about housing than we were before. This is simply a semantic issue. In alternative B, we don't acknowledge other concerns. Neither

of these things is quite accurate, I agree. I just wanted to point that out and ask for your response. President Lacker.

MR. LACKER. I think several of us have used the “predominant concern” language, so I don’t see it as likely to induce a dramatic change in assessment about our views.

CHAIRMAN BERNANKE. President Minehan.

MS. MINEHAN. The language that we have had for some time has shown concern about cooling as a result of the housing market. Whether we have explicitly referred to it as a concern or not, clearly it has been a concern. I think that “predominant concern” is a bit stronger than “some inflationary risks remain” and that such language correctly reflects the sense of the people around the table. Now, it may be too much. I don’t want to speak for Tim, but at one point he thought it was too much.

VICE CHAIRMAN GEITHNER. Well, no, I’d just make the observation that we debated this before and we debated several times the question about whether the best introductory phrase to that balance of risk assessment was exactly that language. The problem in doing it now—this is just one man’s view—is that I think it will be read as a significant alteration of our signal, and on the strength of what we’ve discussed about changes to the outlook in December, we can’t justify a significant change in the signal. The second reason not to do it is the one that the Chairman raised. It introduces a slightly infelicitous framing when there is some risk that people will read everything we say through the prism of whether we’re in the midst of altering implicitly the hierarchy of objectives that we have as a Committee in some broad sense. That’s not the way you framed it, Mr. Chairman.

CHAIRMAN BERNANKE. I couldn’t have framed it that way. [Laughter]

VICE CHAIRMAN GEITHNER. But I think we haven't changed our view of the outlook enough to justify that significant a change in the signal.

CHAIRMAN BERNANKE. Intervention, President Fisher.

MR. FISHER. Mr. Chairman, I think we have to do this against the background of what we said the last time. If you go back to section 2 from December, we were cautious about growth. In section 2 under alternative B now, we're basically saying that we are seeing firmer economic growth. I don't want to overdo this, and I think Vice Chairman Geithner's point is absolutely correct here. Let's think of where we're coming from and indicate the reality of what we've talked about. We are concerned about inflation. Using the word "predominant" excessively emphasizes our concern. At some point we may need to tighten, but let's think of this as the migration from where we were in December. I think the migration is adequately captured in the language that we have in alternative B.

CHAIRMAN BERNANKE. Governor Mishkin.

MR. MISHKIN. Let me also support Tim on this. I have a slightly different slant here, which is that the inflation numbers have actually come in better. The concern here is that the economy is coming in stronger and that it may necessitate tightening. But we don't want to give the impression that we think the inflation numbers are worse and that's the big problem. It's really a perspective about going forward, and that's an additional reason for not changing the language in this case.

CHAIRMAN BERNANKE. Vincent.

MR. REINHART. May I just make one observation, Mr. Chairman? When you move from B(4) to C(4), you make another change as well. B(4) talks about inflation risks, whereas C(4) talks about inflation. So you are changing. You're actually indicating distaste for the current level of

inflation, whereas the previous one could be read as "oh, there could be outcomes that are on the high side."

MR. LACKER. Alternative C, section 3 does the same thing.

MS. MINEHAN. That's a good point.

CHAIRMAN BERNANKE. Any other interventions?

MR. HOENIG. Mr. Chairman.

CHAIRMAN BERNANKE. President Hoenig.

MR. HOENIG. Just to clarify, I'm assuming then we're floating back toward alternative B, leaving the fourth section as is.

CHAIRMAN BERNANKE. Oh, you can speak for yourself. [Laughter]

MR. HOENIG. Oh, I like that, but I'm not sure that's where we landed. [Laughter]

CHAIRMAN BERNANKE. Okay. I think we're going to have to assert order here. Any other interventions? President Moskow.

MR. MOSKOW. I would just say that I'm comfortable with going back to alternative B, section 4, but one way to help move this forward would be just to strengthen our concern in the minutes about inflation and stick with B(4).

CHAIRMAN BERNANKE. Thank you. President Poole.

MR. POOLE. Thank you, Mr. Chairman. First of all, I do favor an unchanged fed funds rate target. I prefer sections 2 and 3 from alternative C. As I read the conversation around the table, I don't hear anyone saying that we need to prime the markets for a probable increase in the fed funds rate in March. Possibly in June is my sense; probably later if we get bad news on inflation and a stronger economy than anticipated.

I went back in the statements to when we started working on this language. This language really dates from March or pretty close to it. In March we said, "Some further policy firming may be needed." Then in May we said, "Some further policy firming may yet be needed." In June we said, "The extent and timing of any additional firming . . . that may be needed." I think that, when we started this language, we had the sense that we were on the edge of needing additional tightening. Certainly the pause in August was not, as I recall it, viewed as necessarily permanent. We called it a pause; we didn't call it a stop. I had the sense in August and September that, if we had had continuing escalation of inflation, we were ready to move higher. We were saying that our best guess was that we were going to hang where we were but that we might be on the edge of tightening. That was my sense at the time, and I think that's the way the market read it. Over the succeeding months, conditions changed a lot. The economy came in for a while softer than anticipated. Housing was in a deeper decline than we thought. Inflation numbers came in on the favorable side—not dramatically better, but certainly it was a favorable development. So the policy meaning of the language has changed as a consequence of the evolution from the time we first adopted it.

We need to view the language in terms of how, let's say, a graduate student five years from now, looking at the transcript, will read the discussion around the table. He or she will say that in December, probably October but certainly in December and at this meeting, the Committee was not on the edge of signaling an increase to the market. That's the problem with section 4 in alternative C. It's a fairly clear indication that we seriously want to signal the market that we're on the edge of raising the rates in March, and I just don't think that's where we are. So I think that we need to view the language in terms not only of the current situation but also of its evolution, and several people have commented that, of course, we are where we are. This is an ideal time to move away

from that language because the market commentary is very much in the direction of expecting that the Committee is going to hold the rate constant for some time. That's in the market commentary. That's in the futures markets. There won't be an easier time to move away from this language than right now, and that was the purpose of the memo that I distributed. I would really like to see us get back toward the English language meaning of the words rather than the inherited policy meaning that this has come to have as a consequence of its repetition.

CHAIRMAN BERNANKE. Thank you. Governor Bies.

MS. BIES. Thank you, Mr. Chairman. I favor keeping rates unchanged today, and I favor the language in alternative B in all the sections. Trying to be cautious, looking at the numbers that just came out, and reflecting back to yesterday's discussion about the NAIRU, last night I looked some more at the exhibit 5 that the staff presented yesterday. I looked at the bottom right panel, which shows the labor force participation rate of those over 62. There are a lot of us baby boomers, and we're generally healthy folks, and it really is unclear what we're going to do. The baby boomers have changed participation in the labor force throughout our generation. We were the generation that brought women into the labor force. We now are going to live twenty years after age 65, and we're not going to sit idle because we're going to be healthier and we have a lot of skills. The additional skill set that we have could actually mitigate the shortage of some skilled workers. Folks probably want more flexibility. They don't want to be on a payroll, but they may want to take a job now and then or work on a contract. Whatever historical NAIRU patterns we have, they are going to be tested by the changing labor force participation due to the baby boomers. That's a big unknown, but it clearly affects potential growth, the output gap, and inflation pressures. So I really don't want to signal anything. This will play out over a long period, but it is the reason, when I look at the "Lower NAIRU" alternative scenario in the Greenbook, that I read it as "higher

participation rate," and I want to be cautious. That's why I can't go to alternative C. I don't want to signal as much worry about inflation. I also want to be careful that we don't go as strong as calling something "rebounding" because I don't want people to think we're going to go back to mid-3 percent growth rates with housing still as soft as it is on a sustained basis. We do still need to watch housing. The strong job market will put legs under the growth side of this, and I like the changes that were made in section 2. I think firmer growth is exactly what we want to talk about, so I like the tone that we've set in the changes in B.

CHAIRMAN BERNANKE. Thank you. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. Like the others, I favor maintaining the federal funds rate at its current level today. As President Plosser pointed out, the strength of the data on employment and spending does imply a higher natural real rate. At the same time, the inflation data have come in really more favorable than we expected and have pointed to the moderation that we've all been hoping for. Today's information confirmed that the PCE was as low as the staff had thought it was going to be in the fourth quarter and that, at least by the most comprehensive compensation measure we have, the pickup in compensation remains very, very damped and might even be consistent with a lower NAIRU than is built into the staff forecast. So balancing these two, I think we're right where we are. Vice Chairman Geithner said something yesterday about being patient, and I think we can be patient at least for a little while longer. At the same time I agree with everyone else, as I said yesterday, that the strength in demand, the low unemployment rate, and the sluggish rise in productivity suggest that there are upside risks to the further moderate decline in inflation that we're all seeking.

On the language, I'd prefer alternative B up and down, and let me give some reactions to the others. I have the same issue with section 2 that Governor Bies just mentioned. It seems to me that

the word "rebounding," particularly after we just published a 3½ percent Q4, might imply that this is a process that is continuing. The staff's projection is that, if anything, they would write Q1 down a bit. I don't know how people would read the word "rebounding"; it might have more of a sense of continuing strength than we see. That's why I like the changes that were made to alternative B. It is now a little more backward-looking: "Recent indicators have suggested somewhat firmer economic growth." That's kind of what we know. We are also projecting in a general way moderate growth going forward. The word "rebounding" in section 2 has a little more momentum than I am comfortable with.

On section 3, if we went to alternative C, we would need to be clear that we are talking about twelve-month inflation that remains elevated, and that's 2.3 percent on the core PCE. If we used that first sentence, we would need to get a little more technical than we usually get in the announcement and say "improved modestly in recent months but remained elevated on a twelve-month basis" so as not to confuse people about the recent months. That consideration makes me favor sticking with alternative B. I do think the high level of resource utilization is at the foundation of my concerns about the inflation risk. It means that labor and product markets are fairly tight, and if there are increases in cost, businesses will more easily pass them through. So I like keeping that reference to resource utilization in section 3. It gives a little flavor—a rationale—for why we're worried about the inflation process, and I would prefer to keep that rationale in there.

On the risk assessment, I'd stick with where we are. I don't think anyone misunderstands what we're doing. It is less stale in some sense than it was in December—[laughter] in December I had my doubts because we really were more worried about the downside risk to output. It's more indicative of where we are today than it was in December. With regard to President Poole's point, it does say "the extent and timing of any additional firming that may be needed," so it leaves open the

possibility that it isn't the next meeting, that it might be another meeting. I disagree with Vincent's point that somehow it gives us a sense that we're more certain that we're going to need to tighten than we really are. It just says "any additional firming that may be needed," so I don't think it says we're definitely going to firm. The market understands what we mean. The market's reaction to incoming data over the intermeeting period has been very constructive. We're not saying anything that's getting in the way of the stabilizing properties of the markets, and on section 4 I'd leave well enough alone. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Warsh.

MR. WARSH. Thank you, Mr. Chairman. Let me spend a minute talking about a market issue before turning to the language. We've talked a bit and Vincent talked a bit about option-implied measures of uncertainty about the policy path, which are near historical lows. That's certainly the case now, and it was the case when we last met. Even though the expected path of policy and market prices have moved much closer to our own in the past two months, it's as though the markets are saying—to be a touch glib—"always certain, rarely right." I would have thought that we would have seen market uncertainty about the policy path change along with their view that we were going to take less-dramatic action over the past six weeks. That tells me that market measures of uncertainty may not be altogether accurate here, and that's a troubling sign as we try to figure out whether they are really telling us about uncertainty or whether they are a separate bet unrelated to our future policy actions.

Today I, too, favor maintaining the federal funds rate target, and I generally share the views expressed in alternative B. As Governor Kohn suggests, the jump from "mixed" to "rebounding" as the operative word suggests a reaction to the data that strikes me as somewhat more positive, at the same time that my own sense hasn't changed dramatically over the past six weeks. While the

markets seem to have moved dramatically, we have really been a rock in this process. The markets have come closer to us, and so I'd rather not appear overly reactive to some very recent data.

With respect to section 4, I was concerned at one point that the words "the Committee judges that some inflation risks remain" seemed a little too dovish. Through the minutes and the speeches of our colleagues, that wording has come to mean exactly that inflation is more of a concern than anything else. So in some ways it has become ossified but true, and so I don't see the benefit of going to alternative C. With that, I generally support alternative B and suspect that we shouldn't be making many more dramatic changes than that.

CHAIRMAN BERNANKE. Thank you. Governor Kroszner.

MR. KROSZNER. Thank you. I, too, support alternative B and maintaining the federal funds rate at 5.25 percent. I agree with many of the arguments that were made before, and so I won't repeat them. I'll go to the language. On section 2, I think it would be an overreaction or appear to be an overreaction to the current data if we suddenly went from where we were to "rebounding." Governor Kohn suggested that "rebounding" has problematic implications for going forward. That is particularly true if we think that at least 0.5 percentage point of the 3.5 percent will be taken away in revisions. Alternative B very nicely encompasses that, even if we didn't know that the number would be a bit firmer than we expected. I also think that in section 3 it's problematic to use the words "in recent months but remain elevated" because in recent months core inflation hasn't been elevated; it looks as though the numbers have been fairly consistently below 2 and so fairly consistently below where they had been six or twelve months ago on average. That wording gives a misleading impression. In section 4, even though I had suggested that alternative, I did so really to clarify the discussion because I thought some of the discussion was not focusing on the issue but on some of the wording, though we had a very good discussion. I have been and remain in favor of not

changing the language, mainly because the markets seem to have learned to interpret it the way we think would be appropriate. Exactly as Governor Kohn said, the market is reacting to the data in a very sensible way, given our perspective on the likely evolution of the data. Since they seem to be kind of getting the data and the perspective on what we're likely to do right, it would seem to be an inopportune time to change the language. Thank you very much.

CHAIRMAN BERNANKE. Thank you. Governor Mishkin.

MR. MISHKIN. I have a slightly different take on where the economy is in that I think the inflation numbers we have seen recently are likely to be reflecting something that's actually happening. So I'm a little more sanguine on the inflation front than I was before and than the Greenbook is. I don't see inflation risks on the upside, which is the way many people describe the situation, partially because I think we're going to do our job properly; but I am a little concerned about giving that impression outside. However, I worry about the upside risk for output. In that context, the implication is that we should think about some upward bias to the future path of the federal funds rate. Clearly, a change in the federal funds rate is not needed today. That's no surprise, and I think we're all agreed on that. However, we have a situation in which the real interest rate that will be appropriate in terms of keeping inflation from rising has certainly gone up. In that sense, we are more likely to raise rates in the future as a result of what's happened recently.

In terms of the language, I am a bit mixed about section 2. I lean toward a little stronger language and, therefore, was leaning a little toward using alternative C for section 2. But I worry a bit about the word "rebounding," so I'm not sure. Section 2 in alternative B is fine with me as well—a little mix there. I feel strongly that we not move to section 3 in alternative C because it gives the impression that the inflation risks have gone up, whereas the real side is more of a concern to me. That concern relates as well to my view of section 4, for which I again strongly support

alternative B. The issue here is not so much that inflation risks right now are the problem but that output may be stronger than we expect, which means that to keep inflation under control we will have to raise rates in the future. Again, for that reason I strongly support alternative B for section 4. Thank you.

CHAIRMAN BERNANKE. Thank you. Mr. Vice Chairman.

VICE CHAIRMAN GEITHNER. Thank you, Mr. Chairman. The most important thing for us to do today, and it's really the only thing we need to do, is to convey a sense that, on the basis of recent data, we see somewhat less downside risk to growth and maybe somewhat less upside risk to inflation. But the principal issue we face is whether we're going to see inflation come down far enough with the current constellation of financial conditions, which we've helped induce. That's the issue that we will be debating for some time. It's possible, maybe probable, that we will have to tighten further, but we don't know that yet. I don't think we need to change our basic signal about the probability that we're going to have to tighten more, and I'm very comfortable with the language in alternative B. Of course, all the alternatives are flawed. Alternative B seems the least flawed among the alternatives. An interesting question is whether referring to current core inflation as elevated today is helpful. You could amend B(3) to say, "Although core inflation remains elevated, recent readings on core inflation have improved modestly in recent months." But you can't really do that without doing what Don suggested—that is, distinguishing more clearly between a twelve-month and a three-month rate—and it's hard to argue that doing so is really worthwhile. So I'm comfortable with alternative B as it is drafted now.

CHAIRMAN BERNANKE. Thank you. Thank you all for your insights. My recommendation also is to take no action and to maintain a bias toward further tightening. I have heard very clearly the Committee's concerns about inflation risk, and I recognize that we may have

to take further action in that direction later this year. I would counsel patience for the moment for several reasons. First, the level of the federal funds rate is probably not too far from where we need to be. I didn't hear anyone suggesting that we were 75 or 100 basis points away from where we need to be. Second, we have clearly conveyed the bias of our policy, and I don't think there would be a problem with our taking action. No one is going to accuse us of not having provided sufficient warning. Third, there's the confluence of data that we've seen since the last meeting, including some improvement in the inflation data, which gives us, if nothing else, a bit of breathing space to observe what I believe remain some relatively significant uncertainties about the evolution of the real economy. The housing market has looked a bit more solid, and the worst outcomes have been made less likely. But given that we have the breathing space to observe how that evolves, I think that waiting a bit more would be wise.

The other point that I'd like to make—I've made it before as have others, but I think it is quite important—is the endogeneity of financial conditions. The five-year and ten-year bond rates are 35 to 40 basis points below the fed funds rate. That has several implications. The first is that we don't want to completely ignore the information that may be in that. More important from a policy point of view, we could, depending on the inflow of data, see an increase of 30, 40, or 50 basis points in long-term rates—mortgage rates, in particular—without any overt action on our part but simply by maintaining our stance and our language. We are very well positioned in that respect in terms of the way markets are likely to respond to data that confirm our sense but not the market's current sense.

With respect to the language, I listened with interest to the discussion. My proposal is to take alternative B. But I'd like to discuss a bit some of the suggestions that have been made. On section 2, I share the concern that some have mentioned about using the word "rebounding." I think

that it implies that we are seeing the 3.5 percent continuing into the near term. I don't think that is the central tendency of our forecast. Alternative B, section 2 does, I believe, clearly signal that we have seen a change from December, when we noted that there was "substantial cooling of the housing market" and that "recent indicators have been mixed." There is clearly a movement toward a stronger assessment of the real economy.

Skipping to the risk assessment for a moment, I share people's concerns about the accuracy of the language. Like many of you, I am reluctant to change that assessment, given that there's not a sharp change in our policy view, simply because this has become recognized by the market. I think it's reasonably well interpreted. As I suggested with respect to the "inflation remains the predominant concern" language, it's not entirely clear how that would be interpreted. In any case, there's a risk that there would be a perception of a significant policy shift, which is not intended. We do need to think hard about this language. I note that we'll be discussing in March a number of issues. Perhaps we could ask for a bit of discussion about how going forward we assess the risks and what kind of language we use in describing the policy direction. I think that would be useful, and if we are going to do it, my recommendation would be to wait another meeting or two until we either see a significant change in the outlook or agree among us to a more systematic way of stating risk assessment.

On section 3 regarding inflation, I've been going back and forth listening to the discussion. We have dropped the word "elevated." We could, I think, take the first sentence of alternative C, section 3: "Readings on core inflation have improved modestly in recent months but remain elevated." The sense in which that is true is that the fourth-quarter core PCE was 2.1, which is above some people's target. So it's not grossly inconsistent. At the same time, the word "modestly" conveys the sense that we are not completely on board with the idea that inflation has

made a substantial move downward or that the magnitude is enormous. I remain open, if you have additional comments about my recommendation, to finding a way to incorporate the word "elevated." But at the moment, I think it is somewhat more accurate to use the word "modestly" to convey the sense that the improvement in inflation is still not that large. So having discussed these issues and having noted that our bias remains clearly to the upside and that we must certainly leave open the possibility of future tightening later this year, my recommendation is to take no action and to use alternative B as written. Anyone like to comment? President Poole.

MR. POOLE. I have one question here. Do we intend in the minutes to make clear our general—well, "expectation" is too strong—but tilt or bias in the direction of tightening later in the year, which I think matches what you just said.

CHAIRMAN BERNANKE. President Poole, I responded to something that you said in the go-round. I think the language of alternative B, section 4 is not saying that we're about to move at the next meeting. It says essentially that the next move is more likely to be up, but it's very clear that "extent and timing" could mean that it will be some meetings before we respond. I thought the tenor of the meeting in the discussion of the economic situation was quite clear that our concerns about inflation remain paramount, and I'm sure that will be reflected in the minutes.

MR. POOLE. My question had to do with the coordination between the statement and the minutes—whether we're going to indicate clearly in the minutes the sense around the table about that tightening. My sense was that we viewed tightening later in the year as more probable than we did certainly in December. That's all I'm asking about.

CHAIRMAN BERNANKE. Vice Chairman Geithner.

VICE CHAIRMAN GEITHNER. I'm not sure we've done this consciously, but the way the discussion in the minutes has evolved in the past several cycles is that we've made an effort not

to provide more nuance in the policy signal that is in that last paragraph. In fact, we've adopted the simplifying convention of pretty much repeating the part of the policy statement that is supposed to signal a judgment about what policy is likely to be going forward. The minutes provide—and this is valuable—a much more textured sense than the statement can about the central tendency of the Committee's view of the future. I don't think it makes sense for us to try to agree now to provide in the minutes more texture about what's, in effect, an elaboration of the risk assessment in section 4. It is hard to do while negotiating the minutes and there's not much virtue in trying to do it. All the emphasis should go toward making sure that we characterize the sense of the Committee about the rationale for our decision, which essentially concerns how our view of the outlook has changed and what the variance of views is around that.

CHAIRMAN BERNANKE. President Hoenig.

MR. HOENIG. First of all, I'm fine with your proposal. I would have gone with the other proposal, but neither set of language binds us, and that is the main thing that I agree with. That brings me to President Poole's point. I don't have a sense that we have a great increase coming later in the year, and I don't want to convey that such was the sense of the Committee. Now, if he does as an individual and would like that in the minutes, that's one thing. But I would not want to have the minutes read as something more than what I heard here today. Trying to define a Committee sense of this that wasn't in the language here would make the minutes more confusing. So I'm okay with this language, and I associate myself with Vice Chairman Geithner on the use of the minutes.

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. There are differences of views about this around the table. A couple of people have said that they think it's likely that sometime this year we will think hard about raising rates. I would trust that such views would be reflected in the minutes. Is it your understanding,

Vice Chairman Geithner, that our convention regarding the minutes is that we expunge from them any comments within the Committee conveying a sense of how we think policy is likely to evolve at longer horizons?

VICE CHAIRMAN GEITHNER. I don't think it's a problem regarding that penultimate paragraph of the minutes, in which the staff tries to capture the texture of what people say about their thoughts on what policy is likely to do. But in the basic framing paragraph at the end, which is designed to capture whatever we as a Committee are willing to say about what's likely, we've tried not to elaborate on or add nuance to the basic statement. So I guess I'm agreeing with you, Jeff. I would have thought that the penultimate paragraph might describe whatever the range of views is about that but not try to capture the consensus of the Committee.

CHAIRMAN BERNANKE. President Minehan.

MS. MINEHAN. The issue that President Poole raised was whether the minutes would likely be out of sync with the statement. What Vice Chairman Geithner mentioned and I know to be the case is that the last paragraph of the minutes is always the statement. So while the minutes might have a nuanced discussion and possibly tilt a bit to people's concern about resource utilization or inflation, however it gets stated, and suggest some possibility of upward movement rather than downward movement, the paragraph that relates back to what we actually said in the statement would tend to bring the discussion back and make the two harmonious, as they should be. When people read the minutes, they are likely to say there's a little more upside risk or a little less downside risk. That's what I heard around the table. I don't think that's inconsistent with what you suggested in terms of a statement.

CHAIRMAN BERNANKE. Thank you. Governor Kohn.

MR. KOHN. Thank you. President Minehan said much of what I was going to say. The minutes will indicate the tenor of the discussion, which was that, despite some good inflation news, we still see plenty of upside risk. That will convey the basic view here. I'd be very concerned about being explicit about an interest rate increase down the line. We will be discussing this topic in a few minutes, I hope, [laughter] about how explicit the Committee should be in its forecasts about the future path of interest rates. We haven't made that decision yet, so I'm a little nervous about making it really explicit or even implicit in the minutes. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. President Moskow.

MR. MOSKOW. I thought, Mr. Chairman, that you described a convention a number of meetings ago, and I thought you expressed it very well: The statement that comes out of the meeting is a consensus statement of the Committee; the minutes describe the range of views that are expressed. That's consistent with the way we've been operating, and I think it has served us well.

CHAIRMAN BERNANKE. I agree.

MR. MOSKOW. May I ask one other question?

CHAIRMAN BERNANKE. President Moskow.

MR. MOSKOW. I just was wondering, since we're focusing on alternative B, how the staff thinks the markets will react to the current version.

MR. REINHART. As we related in the Bluebook and as a number of you said, market participants understand the risk assessment, and they don't expect policy action or a change in the risk assessment. So it's hard to see that there would be any reaction at all. I wonder what our new Account Manager would say as well.

MR. DUDLEY. I would agree with that. You have somewhat firmer growth but better inflation news, and so the Committee is about in the same place on net that it was before. I would be very surprised to see much of a market reaction at all.

CHAIRMAN BERNANKE. Thank you. Ready to vote? Ms. Danker.

MS. DANKER. I'll read the directive from page 25 of the Bluebook.

"The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, the Committee in the immediate future seeks conditions in reserve markets consistent with maintaining the federal funds rate at an average of around 5¼ percent."

The risk assessment: "The Committee judges that some inflation risks remain. The extent and timing of any additional firming that may be needed to address these risks will depend on the evolution of the outlook for both inflation and economic growth, as implied by incoming information."

Chairman Bernanke	Yes
Vice Chairman Geithner	Yes
Governor Bies	Yes
President Hoenig	Yes
Governor Kohn	Yes
Governor Kroszner	Yes
President Minehan	Yes
Governor Mishkin	Yes
President Moskow	Yes
President Poole	Yes
Governor Warsh	Yes

CHAIRMAN BERNANKE. Thank you. This would be a good time to have a fifteen-minute coffee break.

[Coffee break]

CHAIRMAN BERNANKE. The second portion of our meeting is devoted to communications. President Plosser submitted a memo about external communication that suggested there might be some unease in the Committee. In the hope of somewhat reducing that unease, I thought I would try to state one more time what I was trying to get at when we discussed this issue before. Perhaps without taking too much time away from the important discussion we want to have today, if anyone would like to respond to that, I'd be certainly happy to hear.

I and a few other people had two concerns about talking in public about our communication issues. The first was that we would try to avoid interfering with the ongoing discussion and the development of consensus within the Committee. The second was to try to avoid creating any unnecessary political problems that might complicate the adoption of whatever we decide we'd like to do. So my recommendation would be to ask yourselves two questions. The first would be, "Would the remarks that I will give elicit opposition or significant disagreement from other members of the Committee?" If the answer is "yes," then by giving those remarks, you risk the possibility that other people might be in some sense compelled to respond, and then we are having the debate in public. My sense of that is that therefore it would probably not be a great idea to give a speech specifically on the pros and cons of inflation targeting, for example, even if you tried to take a somewhat neutral position because it's inevitably difficult to take a neutral position. However, I want to be clear. I think that it's perfectly okay for people to talk about broader themes—the importance of low and stable inflation, the importance of credibility, the importance of commitment, and the importance of clear communication. I see no problem there because those are broad, general issues that I think everyone around the table would agree with and that don't necessarily speak to the issues that we're still discussing within the Committee. The other question I'd suggest you ask is, "Would something that I say today be likely to end up being repeated to the

Chairman in congressional testimony." [Laughter] That is a particular concern of mine. The lesson I would take from it is that, if you do talk about the importance of low and stable inflation, which is certainly a good thing to do, you also make the point that we are, of course, committed to our dual mandate and that one of the principal reasons that we seek price stability is to strengthen the real economy.

So those are my thoughts. I want to reiterate that this is guidance, not regulation. I ask people just to use their judgment and not to feel constrained about talking about broad issues, particularly issues that would command wide agreement in the Committee, and you certainly don't have to disavow any previous positions. If you are pressed too far on an issue, you can certainly always say that the Committee is currently discussing these issues and that we'll be saying more about this in the future. Again, I certainly had no intention and have no intention of trying to censor people's words. I hope that you will continue to talk about the broad issues of price stability and communication, which are so critical to our function as a central bank. I don't want to take a great deal of time from our broader discussion, but if anyone would like to react, certainly this would be the time. President Lacker.

MR. LACKER. I think this is really clear, common sense, and very constructive.

CHAIRMAN BERNANKE. Thank you. If there are no other comments, I'll turn the meeting over to Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. I thought I would begin by saying a few words on process. I've had a number of questions from people about where we are in the process of considering communication issues and how we see the next couple of meetings. I hope that today we can come up with some sense of the central tendency or an expression of the Committee on where we want to go with the projection and the forecast process. I don't expect complete

agreement on where we want to go. I don't expect every question to be answered. But I think we can probably narrow down the range of things we're looking at and get a sense of where the modal Committee member would like to go with this. I also recognize that the decisions we make on other aspects of communication and monetary policy—for example, the numerical specification of price stability—would then come back and interact with how you might want to use the forecast.

In March, we will revisit the issue of the numerical specification of price stability, which we discussed in October. I've asked the staff to work on some material. Basically I've asked them to take the pieces of the memo from January '05 that talked about things such as range versus point; which index or modification of an index; the transformation of an index; price level versus inflation targeting; the horizon, if any, over which we ought to specify this—some of these more-specific issues that we need to think about if we're going to have a numerical specification for price stability. The sense coming out of the October meeting was that the vast majority of people on the Committee wanted to move in this direction, although exactly what they wanted wasn't clear. So I've told the staff to assume that the Committee is moving in this direction, and now the task is not to debate that whole thing again but rather to get a little more specific. By getting more specific we can test our own notions of how this would work out and just how much in favor we are. The March meeting will go two days, and we'll be discussing those things. The Chairman has put on the table another item for the March meeting, which is the issue concerning the announcement and the balance of risks. If we have time in March, it would be great to get to it. If not, shortly thereafter we need to think about the directions in which we seem to be moving on both the projection side and the numerical specification side and their interactions with the announcements, the minutes, and some of these other modalities we have for communicating with the public.

I would hope that after the March Committee meeting, the subcommittee—President Stern, President Yellen, and I—could take stock of where we have gotten to; how the issues have been narrowed; where the Committee seems to be heading; what the open issues are; and if we don't get to the announcement or the minutes in March, how these things might interact. Then we could come back to the Committee in June, the next two-day meeting, and ask for some more guidance and just keep pushing this process to a conclusion. We need both some dry runs on whatever we decide to do and a strategy for rolling that out to the public and the public's elected representatives. Once we get closer to a decision, then we can talk about how to proceed on those two issues. So that's the general process that I'm envisioning for the next couple of meetings, Mr. Chairman. I will turn the meeting back to you. Actually I'm supposed to call on Dave Reifschneider to start the staff briefings.

> MR. REIFSCHNEIDER.[4] Thank you, Governor Kohn. Brian Doyle, Vincent Reinhart, and I will be speaking this morning on the material labeled "Staff Presentation on Producing and Publishing Economic Forecasts." As the top panel of your first exhibit notes, the Federal Reserve regularly provides the public with information on the outlook in the Monetary Policy Report, congressional testimony, the FOMC minutes, and the statement. You presumably undertake this effort with an eye toward advancing the goals of economic performance, public discourse, your own internal discourse, and efficient operations. A key issue in your deliberations today is whether changing your practices in this area would advance these goals further or achieve a better tradeoff. As shown in the bottom panel, this morning Brian, Vincent, and I will address three questions related to this issue. I will start with the production and publication options that are open to the Committee. Brian will then discuss what we can learn from the international experience. Finally, Vincent will consider the governance issues that would arise under alternative arrangements.
>
> Many ways of changing your current practices are possible. Exhibit 2 focuses on one fundamental choice that you confront in this regard—namely, how to produce the forecast. As noted in the top panel, you have three main options. First, you could continue to produce independent forecasts, with each of you solely responsible for your own forecast. Second, you could choose to produce a single centralized forecast, working together as the whole Committee or delegating responsibility to a subcommittee. Finally, you could adopt an intermediate position and produce

[4] Material used by Mr. Reifschneider, Mr. Doyle, and Mr. Reinhart is appended to this transcript (appendix 4).

coordinated forecasts, with your individual projections conditioned on common assumptions for factors such as oil prices and fiscal policy.

As highlighted in the bottom panel, your choice among these three options has important implications for, among other things, your communications with the public and the operational cost of forecast-related activities. To see this, consider one important communication task, the telling of the central story of the outlook. As noted in the first row under the independent option, distilling an informative message from multiple forecasts is difficult, even if those forecasts provide a considerable amount of detail about the outlook. In fact, it is an open question as to whether it would always be possible to craft a central narrative that would command the consent of a majority of the Committee, given the diversity of your views. Moving to the right, the distillation task under the coordinated approach might be simplified a bit because your individual forecasts would share some common elements. Nevertheless, telling the central story would remain difficult if, after settling on, say, a common path for oil prices, you still disagreed markedly about its economic implications. In contrast, as the rightmost entry notes, the telling of the central story would be relatively easy under the centralized option because—abstracting from the difficulties of producing such a forecast—the single projection would provide a clear and coherent message.

Your production choice has important implications for another communication task—conveying the diversity of views on the Committee about the outlook. As noted in the second row of the table, the independent option naturally reveals this diversity through your individual forecasts. To a large degree, the same is true under the coordinated option, although conditioning on common assumptions would obscure some of the possible sources of diversity. Finally, the centralized option would not reveal the diversity of your thinking unless the published outlook summary included additional comments about alternative views.

Your production choice also has important implications for the operational costs of both producing and publishing the forecast. Forecast production is a relatively low-cost task under the independent option because you incur no expense in coordinating your forecasting efforts. Still, you could find yourselves devoting more resources to forecasting if you chose to publish your individual projections. Moving to the coordinated option, here preparing the forecast would be more costly because you would need to spend time choosing a common set of assumptions, but you could limit these costs if you settled on a standard process for this task. Finally, producing a centralized forecast would be very costly, especially at first, because of the wide range of economic issues on which you would need to reach consensus. Given the practical difficulties of achieving such agreement with a group as large as the FOMC, making this option feasible might require delegating the preparation of the unified projection to a subcommittee.

Finally, there are the operational costs of forecast publication. This task may be burdensome under the independent option, especially if all of you wish to participate

actively in the preparation of the text as you now do with the minutes. In fact, given the inherent difficulty of crafting an accurate and informative central message from multiple forecasts, negotiating the language of an outlook summary as a group would likely be even more time-consuming than preparing the minutes if the summary is to be anything more than a bare-bones listing of numbers. Publishing the forecast under the coordinated option also may be burdensome, for the same reasons. However, choosing the centralized option could make forecast publication less costly, partly because you would already have reached agreement on the economic factors influencing the outlook. You could reduce costs further if you delegated responsibility for both producing and summarizing the forecast to a subcommittee.

The top panel of your next exhibit considers some of your many publication choices. If you choose to continue producing individual forecasts, you could release more information about those projections—for example, by publishing the forecasts themselves. Such a step would reveal more about the diversity of your thinking, although it might risk diverting attention from any consensus about the outlook. Another option available under all three production choices would be to provide more forecast details, either numerically or in qualitative form. Such a step would facilitate telling a more informative story about the outlook, although it would also create additional dimensions for disagreement. A third possibility would be to lengthen the forecast period. This step could reveal more fully how you expect any economic shocks and imbalances to play out and thus might enhance public understanding of the basis for your policy actions; it could also provide more information about your policy objectives and expectations for the long run. A fourth possibility would be to publish information about the outlook more frequently than you now do. Such a change might help to clarify how you see the forecast and monetary policy responding to incoming data, but it would also increase operational costs proportionately. Finally, you have the option of publishing fan charts and confidence intervals for your projections. This information could help to emphasize the inherent uncertainty of the outlook and the conditionality of monetary policy. Before you could take this step, however, you would have to settle some issues involving the empirical basis of this material.

The bottom panel of the exhibit addresses two options that you have for setting the projected federal funds rate. The first option is to condition the outlook on what you see as "appropriate" monetary policy. If you produce independent forecasts, each of you would continue to make this determination on your own, but under the centralized approach and perhaps the coordinated one, you would need to do this as a group. As noted in the first bullet point, publishing details on what you see as the appropriate path of the fed funds rate could facilitate telling a more informative story about the role played by monetary policy in the outlook. Describing your policy assumptions qualitatively might achieve this objective; alternatively, you could release, say, the central tendency of your specific fed funds rate projections. One possible drawback to publishing an "appropriate" policy path is that the public might misinterpret it as a promise, especially at first; for this reason, you might wish to pair any published fed funds rate path with information on forecast uncertainty. Releasing

information on the fed funds rate might also generate public criticism and political pressures.

A second option for setting monetary policy is to condition the outlook on a flat fed funds rate or on the path consistent with market expectations. This approach might mitigate some of the misinterpretation and political problems associated with the release of an appropriate policy path. However, conditioning the outlook on such a path would alter the nature of the forecast and so create communication challenges. In particular, your forecasts would no longer represent your best guess for the likely evolution of the economy, to the extent that a flat fed funds rate or a market-based path differs from what you, individually or as a group, think will be necessary. For this reason, the forecast summary would require some statement about the desirability of the projected outcome to avoid misunderstanding. You might even find it necessary to provide guidance about how the policy path would have to change to bring about a more "appropriate" outcome—a step that would likely generate its own controversies. I will now turn the floor over to Brian.

MR. DOYLE. As Dave has explained, policy committees at central banks may choose to produce and publish one of several different types of forecasts—centralized, coordinated, or independent—or they may choose to release a staff forecast. In the table at the top of exhibit 4, columns A, B, and C show some of the forecast publication choices of the central banks discussed in the International Finance Division background paper. Seven central banks publish a centralized forecast; one, a coordinated forecast; and one, a staff forecast. In my portion of the presentation, I will first address some factors (shown in the last four columns) that appear to be associated with these choices.

By our reckoning, the first central bank shown, the Reserve Bank of New Zealand, possesses the characteristics that would most likely lead to a centralized forecast without dissent: [laughter] It has a small policy committee, composed of only the governor (which does tend to limit dissent); hence its committee is located in the same place, and its head bears sole responsibility for monetary policy. The other central banks that produce a centralized forecast without dissents (shown in rows 2 to 5 of the table) share many of these characteristics. In Canada (row 3), as in New Zealand, the central bank head has primary responsibility for monetary policy. In other cases, such as Australia and Norway (rows 4 and 5), external members, who have no executive functions, mainly participate at the monetary policy meeting, leaving the remaining members a larger role in producing the forecast.

The Swedish Riksbank and the Bank of England have members who all play a more equal role in shaping monetary policy. These banks also publish a centralized forecast, but they recognize members' dissents from the central forecast in their published minutes. The Bank of England has a larger committee than the first six banks shown. The entire committee is involved in the production of each forecast, and with the larger committee size, the process takes about four weeks, including many meetings to decide on the details of the projection.

All seven central banks that publish a centralized forecast also release a single narrative of the forecast to the public. However, their choices vary about the features of the forecast, such as the presentation of uncertainty and the treatment of policy rates. Three of these central banks—the Norges Bank, the Riksbank, and the Bank of England—publish "fan" charts that convey the policymakers' collective view on the distribution of possible outcomes. Others describe uncertainty around their central forecast through their discussion of risks or through alternative scenarios. As shown in column C, some central banks choose to publish their own forecast for the appropriate path of interest rates rather than conditioning their forecast on a specified path, such as a flat path for the policy rate or one based on market expectations.

In contrast to the Bank of England, the two other central banks with relatively large committees—the Bank of Japan and the European Central Bank—do not publish centralized forecasts. To reflect the diversity of its nine policy board members' views, the Bank of Japan publishes the range and the central tendency of their forecasts, along with the median. These forecasts are coordinated because the board members base their forecasts on a path of interest rates consistent with market quotes. These forecast statistics are published with a description of the outlook, which is drafted by the staff with board input and then voted on by the board. Board members may register (with attribution) their dissent from the description of the forecast in the minutes of the policy meeting. The ECB's policy committee—which includes twelve members from the national central banks, who are located throughout the euro area—does not publish any forecast of its own but releases its staff forecast instead. The staff forecast is not voted on by the governing council, and its standing with respect to policy decisions is not clear.

As outlined in the bullets in the bottom panel, despite the different choices of these central banks, their publication of economic forecasts is generally regarded as useful. The central banks say that publication has eased communication. Many central banks have started publishing forecasts, none of these has stopped, and most have increased the extent of detail reported. Most observers agree that published forecasts have improved communication and facilitated accountability. Many have commented favorably on the quality of forecast publications. Overall, commentary on the publication of forecasts by both producers and consumers is quite positive.

However, we have found very little econometric work that specifically evaluates whether publishing forecasts has improved monetary policy communication or economic outcomes. The publication of forecasts has nearly always been part of a package. Attempts to detect major positive or negative effects of adopting such packages have met with little success. Limited evidence suggests that their adoption may have helped anchor inflation expectations, but whether the publication of forecasts has made an independent contribution is unknown. A few event studies have found that the release of forecasts has some effect on interest rates and other financial variables. On balance, existing econometric evidence does not provide a

firm basis for assessing the cost and benefits of publishing forecasts. Vincent will now complete our presentation.

MR. REINHART. Exhibit 5 presents a decision tree outlining the possible paths you might take in incorporating an economic forecast in the policymaking process. I am including this schematic because, among other reasons, it is just what you would expect from me. [Laughter] Before we trace out some of those limbs, I want to remind you why the economic forecast is on today's agenda. Discussion of monetary policy, both here and abroad, has increasingly focused on the forward-looking nature of setting policy. For the Federal Reserve, the structure of the current process of releasing an economic projection was set almost thirty years ago by improvisation in response to congressional prodding. Is it possible that the Committee could arrive at a more coherent way of producing and releasing a forecast that would enable policymakers to describe better what they do?

The possibilities for producing and releasing a forecast are laid out at the top of the exhibit. Note that a couple of the nodes correspond to questions from the subcommittee to you in a memo I distributed on Friday. In particular, as flagged by the "1" in the decision tree and repeated in the list below, "Does the Committee want to produce a joint forecast or conduct a survey of individual forecasts?" The answer to this question is both hard—because it has considerable implications for your time and resources in the System more generally—and easy to predict—at least based on conversations I've had with many of you and your staff. To make it even easier to answer, let me paraphrase those conversations: "Do you want to change the basic nature of the Committee process by adding multiple rounds of meetings so as to enforce a more uniform view of the outlook than has ever existed before, or do you want to modify the status quo?" [Laughter] If you prefer to continue the practice of providing individual forecasts, you might want to reexamine the extent of coordination in that process. That is item 2 at the top and bottom, "If the forecasts are done individually, should they be based on common assumptions about some key conditioning factors?" Chief among those factors is the path of monetary policy. Do you want to continue with each taking your own view of monetary policy, settle on some joint assumption, or use market-based quotes?

The individual entries in a numerical forecast have only limited usefulness in describing the economic outlook and the backdrop for setting policy. Rather, the narrative thread explaining the forecast is the most useful because it allows the reader to assess the credibility of the projection, to position his or her own view when there is a difference of opinion, and to gauge potential risks to the outlook. As posed in question 3, do you want to accompany a forecast with a minutes-style narrative description? As with the minutes—and noted in question 4—this document could be circulated for comments from meeting participants and ultimately be approved by the Committee through a notation vote. Such a procedure, however, will extend the interval between the making of the forecast and its release, raising the number of times that inconvenient data releases will render the projection moot. If you want a

more timely release, drafting and releasing such a minutes-style document could be delegated to either the Chairman or the staff.

The last four questions cover technical attributes of a forecast. In particular, as noted in question 5, how frequently should forecasts be made? The current semiannual reporting cycle was set by the Congress, but it means that the published forecasts become stale. Another inconvenience with the current setup is that an annual forecast made in June incorporates an implicit forecast of the second half. Would you rather be explicit and forecast half years? More generally, as in item 6, how many years should the forecast cover? Seventh, how many variables should be forecast, and which should they be? Nominal income, for example, remains on the survey by historical accident—from the days when the velocity of money was thought to be predictable and knowing your expectation about income growth would help in setting a monetary range. Are there other variables that would be more helpful? Finally, should there be some attempt to convey numerically the uncertainty surrounding the forecasts? Relaying such information would more accurately convey the balancing of risks that is an integral part in your deliberations and would remind your readers that it is a projection, not a promise.

By now, we probably have your heads spinning with all the possible permutations of the many decisions that could be made. With this many moving parts, the problem is complicated. But not all the issues to be resolved are hard. First, you have the force of precedent, which is a powerful attractor within the Federal Reserve System. That is why I wouldn't worry for a minute about whether the forecast and its description should reflect the views of the Committee or all meeting participants. The precedents of the outlook portion of the minutes and the semiannual survey of forecasts establish that any release should reflect everyone's views. Second, for the sake of consistency, some of the decisions about the format of the forecast will be driven by other decisions you may make later. For instance, if in your deliberations about quantifying the price objective in March you indicate a preference for measuring inflation in terms of CPI or PCE, whether headline or core, the variable sampled in your survey should be a good indicator of that goal.

If you can answer the hard questions today—eight of which the subcommittee sent to you—then it would be possible to frame out a rough structure of a specific proposal. Detail could be filled in by surveying you later on technical matters, and sometime thereafter you could get a formal proposal for consideration as part of the general package of work on communication. That concludes our prepared remarks.

CHAIRMAN BERNANKE. Thank you. Are there questions for the staff? President Fisher.

MR. FISHER. May I ask one question of Brian?

CHAIRMAN BERNANKE. Yes.

MR. FISHER. Brian, on your exhibit 4, you point out that there's no econometric evidence that publishing forecasts—these improved methodologies—has actually had an effect from an econometric standpoint. But you make the statement that observers agree that forecasts have improved communications and accountability, which is a more subjective statement. Who are the observers?

MR. DOYLE. They would be a combination of market participants, academics, and anyone with an interest in what central banks do or say.

MR. FISHER. How do we measure "improved communications and accountability"? It seems to be very subjective.

MR. DOYLE. Unfortunately it is.

MR. FISHER. Finally, I am just not as familiar as the rest of the FOMC is, but do any of these banks have a dual mandate stated like our dual mandate?

MR. DOYLE. Certainly. Other central banks have multiple objectives. Some that are specifically stated are the ones that the Federal Reserve has stated: maximum employment and stable prices. I'm not sure, but some are quite close in terms of keeping inflation low and watching output as well.

MR. MISHKIN. May I help answer this?

CHAIRMAN BERNANKE. Governor Mishkin.

MR. MISHKIN. The Norges Bank is actually the clearest on something close to a dual objective. In their inflation report, they have several statements of their objectives, and they explicitly say that they have a flexible inflation target regime. That's the first statement. What that means is that they actually are going to try to minimize both inflation fluctuations and output-employment fluctuations. Most central banks don't have anything as explicit as that when they do

talk in terms of hierarchical mandates in some cases, a country does talk about output fluctuations in an inflation-targeting regime and is more explicit. I think the Riksbank is going to be moving in that direction; it was part of our recommendations to them.

MR. FISHER. But currently it's the Norges Bank.

MR. MISHKIN. Currently the Norges Bank is the clearest.

MR. FISHER. Thank you.

CHAIRMAN BERNANKE. President Fisher, I think almost all central banks, even the so-called "formal inflation targeters," have in their mandate that they are to support economic activity insofar as it is consistent with price stability. President Lacker.

MR. LACKER. This isn't a question.

CHAIRMAN BERNANKE. I'm sorry. Is this for a go-round, or do you have a question?

MR. LACKER. I don't have any questions. [Laughter]

VICE CHAIRMAN GEITHNER. Just answers. [Laughter]

CHAIRMAN BERNANKE. Then please start.

MR. LACKER. I thought the documentation distributed by the staff did a good job of identifying the purposes that publishing forecasts ought to serve. They're consistent with what I described in past meetings as guiding principles—namely, that communication is useful to the extent that it helps the public form better expectations about future policy and inflation and that it will help in that regard to the extent that it provides benchmarks against which people can assess their future actions. For me the purposes of communicating a forecast are, first, to reduce uncertainty in the public's mind about future macroeconomic outcomes; second, to enhance our credibility and accountability; third, to improve the coherence and internal consistency of our discussions. It's useful to stack up different questions and approaches against these purposes and to

see how they do. In any case—and this is a theme to which I will return—in achieving these objectives, I think it's really important that published forecasts be clear and understandable to the public. Now, the cardinal rule of communication is to understand your audience. It's one thing to explain our forecast and procedure to Larry Meyer or Goldman Sachs economists; it's another to explain it to President Plosser's $2 million business head, the Helena Rotary Club, or wherever we find ourselves from time to time.

Before addressing Vince's questions, I just want to note that I think the value of publishing a forecast would be greatest if it were paired with an internal agreement about our long-run objective for inflation. I think having a prior consensus on that would simplify the process of obtaining a consensus on the outlook and about policy. My own preference is that we state that publicly. To the extent that an inflation objective represents a commitment regarding future policy, you can view it as representing an implied forecast of the long-run average value of inflation, and so publicizing that would help reduce the public's uncertainty along a very important dimension.

Regarding Vince's first question, I believe a single Committee forecast is most desirable. This relates to the accountability objective. We are jointly responsible for the outcomes of monetary policy, so I think we should strive for an outlook that we can fairly agree represents a collective sense of the Committee. The value of accountability is that it enhances credibility, and it's the credibility of the Committee rather than of individual members that's really important. I recognize that crafting a consensus on a forecast among nineteen or even twelve members, even as collegial a group as this is, could be a daunting task. One approach would be to allow the expression of dissenting views. This runs the risk, however, of making a Committee forecast nothing more than a compilation of members' forecasts, and I think it needs to be more than that. The message that the release of a Committee forecast should convey is that we came to a process

with diverse views, we talked things over, our views perhaps moved closer together, and we ultimately came to agreement on a single forecast that most of us saw as not too different from our own. That meaning would be watered down if there were a lot of dissenting views—if they were too frequent or too numerous. So I think there should be sort of a high threshold of disagreement before any of us insists on differences being separately articulated. I would envision a process—I think one of Vince's options sketched this—in which the staff produces an initial forecast along the lines of the Greenbook (they have a great forecasting record) and members would send in their own forecasts, commentaries, or disagreements. Then there would be some iterative communication process on the basis of which a new forecast would be developed for a Committee vote.

Regarding the question of conditioning assumptions, I strongly believe that what we publish should reflect our best sense of what is actually going to happen. My preference, accordingly, would be to condition forecasts on how we think we are actually going to set policy as events unfold. Conditioning on any other assumption—a market's policy path or an unchanged policy—means having to explain that our forecast may be counterfactual. It means that, in order to figure out our real forecast, people have to figure out how our policy choices are going to differ from our assumed policy and then guess how we think the differences in policy are going to affect the forecast. It means that the extent to which our published forecast reduces the public's uncertainty about future macroeconomic outcomes is going to be limited. It means that our accountability will be limited because we will be saying up front that this forecast might not be our actual one. It also means that we will be chewing up valuable staff and Committee time constructing a forecast we don't necessarily believe in. Here I think it's instructive to imagine explaining a counterfactual forecast to President Plosser's $2 million business head or to the Helena Rotary Club.

I realize that some members of the Committee may be uncomfortable articulating an expected path for the federal funds rate, but what we publish about the nature of future policy settings is a separate question from whether we condition on a cohesive view about them. Our discussion of the forecast is going to be much more coherent if we reach a consensus on future policy. Telling the public that our forecast assumes appropriate policy obviously makes more sense, I think, if we have stated what inflation rate that policy is designed to achieve. If, instead, we adopt some counterfactual policy assumption, then not stating an inflation objective makes a published forecast even less informative since people would have to know how the forecast differs from our desired outcomes before figuring out what to make of it.

As for Vince's other questions, on questions 3 and 4, I think the accompanying narrative should be handled pretty much the same way the minutes are—drafted by the staff and approved by the Committee. On questions 5 and 6, I see greater value in publishing forecasts at longer horizons. In the event that we adopt an explicit objective, we would want the period to be long enough to show the forecast path for inflation returning near to the objective. Again, if we condition it on market assumptions, the period needs to be long enough to determine whether the forecast appears to be moving toward our objective at an acceptable pace. Question 7 asks how many variables we should forecast. I think the optimal number is four. [Laughter] In case you want to know which ones I'd choose, I'd say real GDP, inflation, the unemployment rate, and the fed funds rate. On question 8, yes, we absolutely should convey the uncertainties surrounding the forecast. I think it's important for accountability that we articulate our sense of the range of likely future outcomes. This points to the importance of not simply assuming a path for the fed funds rate but allowing policy to vary across different draws of the shocks that are going to affect our future economic conditions. Otherwise our published fan charts for economic variables are not going to correspond to the

probability distribution that we believe will actually govern future outcomes, and again, we'll have to explain the difference to the public. Also, I think that agreeing on a fan chart around outcomes is likely to be conducive to achieving a consensus within the Committee on the outlook.

In closing, let me reiterate the importance that I place on clarity. Our communication goals of reducing the public's uncertainty about macroeconomic outcomes, particularly inflation, and enhancing our accountability strongly imply that we should adopt only a procedure that we can easily explain to the public, that the public will find useful, and that avoids the confusion of complex and subtle counterfactual assumptions.

CHAIRMAN BERNANKE. Vice Chairman Geithner.

VICE CHAIRMAN GEITHNER. You said one thing that surprised me, Jeff. You began by saying that the objective should be to help reduce the public's uncertainty about future macroeconomic outcomes generally. Now, I can see that we have some capacity to reduce the public's uncertainty about what inflation is going to be over time, but is it realistic for us to have as an objective to reduce broader uncertainty in the public about macroeconomic outcomes? Is that an achievable or desirable objective for communications? We can maybe reduce our uncertainty about what we think about what those outcomes are, but even we don't know much about the dimensions of the future.

MR. LACKER. I'm not suggesting that we reduce the public's uncertainty to less than our uncertainty about future outcomes. But the econometric evidence is that Greenbook forecasts are superior to the private sector's forecasts. So if the public knew them, their uncertainty would be lower. I think there's reason to suspect that more information, more communication, from us about our outlook is likely to reduce the public's uncertainty.

CHAIRMAN BERNANKE. President Minehan.

MS. MINEHAN. I didn't know I was going to go second, but that's all right.

MR. LACKER. You can ask a question if you'd like. [Laughter]

MS. MINEHAN. No, I've got plenty of questions here. Anyway, I, too, appreciated the range of staff material that went into the preparation for this discussion. An awful lot of alternatives are on the table, and I think it's good that we've been asked to focus on eight questions to try to clarify things. But from my view, the most important question was not posed, and Vince lightly passed over it. Yes, thirty years ago or so we fell into the process that we now use for both creating forecasts and communicating them, and yes, you could assume that anything you've done for thirty years probably could be improved. I think that's possible. But I'd like to have some sense of what is wrong about what we're doing before I seek major changes to improve it.

The staff paper suggests that in deciding whether or how to change the way we communicate our forecasts, we ought to be looking at goals of better economic performance and better public discourse and accountability, presumably not just in the short run but also in the long run. There's some marriage there with the potential for setting long-term, explicit price stability targets. A third goal would be better internal discourse and trying to do all of that in the context of having somewhat efficient operations. I think these are laudable goals. I continue to have concerns about whether explicit long-term targets for price stability are really helpful—whether they'll help or hinder our cause. But setting that aside, I think we need to think about our forecasts not just as forecasts but in light of the full range of communications in which the Committee now engages. We have two Monetary Policy Reports a year. We have the central tendency of member forecasts around GDP, inflation, and unemployment. They don't get a lot of attention right now. Maybe that's good in some perspectives, given the way we do them. Maybe that's not so good. We have eight meeting statements. We have eight sets of minutes, and we have copious speeches and

testimony. So there is a lot of communication, whether it's in numerical form or qualitative form, about how we see the future. Each set of minutes has implicit in it a qualitative discussion and some quantitative information from the Greenbook forecast and an indication of where the members of the Committee are in terms of how they see the future unwinding. We certainly, of course, express that a lot in our speeches and testimony.

In my almost thirteen-year tenure on the Committee the transparency of policy deliberation has increased enormously. There's a healthy public discourse about what we've done, what we've said about it, and what the likely future course of monetary policy is. In the end, I think accountability really depends on actions, not so much on words, and I believe our actions and our words have shown us to be accountable. So I'm questioning whether some of this moves us to be more accountable. In fact, if you look over the past twenty-five years at the range of our current forecasts, albeit they have potential problems and they receive little attention, that range hasn't been at all bad in predicting what has actually happened over the period for which the projections are made, particularly when you look at inflation and unemployment. So despite our lack of common assumptions and with the wide variety of differences, particularly over the years, in how we view the mechanics of the economy, we have published a central tendency that's been fairly narrow and reasonably accurate, at least for the things over which we have the most control—in particular, inflation. Will more communication of forecasts result in better economic performance? I think that's hard to prove. The staff has said it's hard to prove. Maybe yes; maybe no.

Turning to the objective of better internal discourse, more communication has already improved the internal discourse of the Committee. I have some qualms about referring to our nineteen-person editing sessions as an improvement, but setting that aside, we have moved over the years from saying nothing to formulaic statements to more-flexible language combined with earlier

release of the minutes. So I think that has all improved our internal discourse. Vice Chairman Geithner circulated something that implied we might further improve by sharing among ourselves more detail about our internal forecasts and the attendant uncertainties. I like that as an improvement on the internal discourse part of it. I think it has some merits for further discussion as long as the intent is strictly internal consumption and there's no intention to force us to a common view. So I am a bit at odds with President Lacker, and you'll see more of that.

Can we do more than we're currently doing? That's the question here. Of course, it's always possible to improve. But I think there are downside risks, and I don't think they were well discussed or articulated, or articulated in a way I would like, in some of the material. First of all, the Committee is intended to be just that—a gathering of independent perspectives on policy. That's why we have our own staffs. Our economic frameworks have converged over time, but there are differences in focus and in emphasis. If in the end we produce a single view rather than a range, what does that say about the need for a Committee, particularly with nineteen members? If there is a single, consolidated forecast that is, for efficiency's sake, delegated to a small group, does that not over time tend to disenfranchise those who are not part of that group? Second, Committee members in my view should be chosen for their judgment, not their forecasting ability. Forecasts are useful tools, but they're not the only things involved in policy. If they were, we could rely solely on a model to set policy, and we know we can't do that. At some point, the effort involved in creating and refining forecasts over and over precludes the work necessary to form judgments about the current and the future stance of policy. Third, attempts to convey to the public the underlying elements of a forecast, including the policy path, run the real risk, as the staff has pointed out, of committing the Committee to a particular action. At the tails of the distribution of economic scenarios—that is, if things are particularly lopsided from either a growth or an inflation perspective

or if there's a bout of financial instability—some form of path commitment can be useful, and we have used that in the recent past. Normally policy is more reactive to incoming data than proactive, and appropriately so, in my view. The staff papers say pre-commitment is not a problem elsewhere or can be explained away. But the process of conveying such explanations in the context of U.S. financial markets may take more time and be bumpier than anyone expects. Again, I ask myself what greater good would be served by risking that market reaction. Finally, if we did decide to move to more-frequent forecasts, whether centralized or not, would the result be cacophony? We've got statements and minutes eight times a year, the usual plethora of speeches and testimony. If we added to that more monetary policy type reports with forecasts, is there a chance that we could have too much information out there, too many things that are potentially giving rise to commentary that's not necessarily helping understanding but rather confusing it?

So I come back to my answer to the first question that Vince should have asked, I think. I have serious misgivings about whether changing what we now do in the Monetary Policy Reports and the related forecasts might be beneficial enough to offset the downside risks. I think there is, however, some value in talking about something along the lines that Vice Chairman Geithner has implicitly proposed.

Now, let me just quickly answer the eight questions that Vince did raise. First of all, I think a joint forecast should be avoided. A survey of individual member forecasts is my preference. I would aggregate them and present a central tendency either using existing procedures or some modification that seems useful. I would not require that Committee members use common assumptions either for the fed funds path or for other elements. In my experience, I've taken some comfort that different Committee members with different assumptions and policy preferences most often develop semiannual forecasts for the next year and a half or so that are not much different

from my own. I don't believe that we in Boston have the best take on how the economy works or how near-term risks will play out, but the fact that the way we see the near-term outcome with "appropriate policy" is in the mainstream of the way most others see it gives me some confidence that we're on the right track. As I noted before, the range of our forecasts hasn't been a bad predictor of key economic outcomes.

The third question has to do with whether the forecast should be accompanied by a minutes-style description. The release of our forecast is now accompanied by the Monetary Policy Report, which by definition is the Chairman's view of things. As a result, of necessity perhaps, the forecasts we develop get little attention in the report. If we were to release forecasts more often, we would need some verbal text like the Monetary Policy Report. But perhaps we could take a first step by just changing the way the Monetary Policy Report is formulated right now to give a little bit more attention to the forecasts that the Committee is making. Whether that means that the Monetary Policy Report is a Committee report, not the Chairman's report, is an obvious next question, and I don't have the answer to that. But maybe a small step to take would be to highlight more that the report has forecasts in there.

The fourth question was whether the Committee should jointly agree on the minutes-style description. Frankly, I'm wondering when we would do all this stuff. We've got a meeting in January and February that comes out with minutes and a forecast and a Monetary Policy Report. We've got a meeting in March. We've got one in May. We've got June, which is similar to January, a meeting in August, one in September, one in November and December for which we're writing minutes—all of which, as I noted before, have implicit in them either qualitative or quantitative senses of both the Greenbook forecast and the Committee members' forecast. That implies that April and October are the only months in which we could probably do this. I think

trying to create—and someone referred to this earlier—a minutes-like description of a set of forecasts without a meeting around that set of forecasts would be really hard. There may be some way of rearranging our meeting dates to get the dates to work out better. However, it seems as though we'd be working on a lot of stuff, some of it simultaneously if we were to keep the same range of things that we do now. So my answer to question 5 is that I'm not convinced that the two times a year we do it right now isn't about the right frequency.

On question 6, I understand the argument for a longer-term forecast period. I understand that it reveals future policy preferences and tradeoffs, but I don't think long-term forecasts provide a whole lot else. A long-term forecast isn't going to be realized. It's more a goal than anything else. It's hard to make forecasts six months out that are right on the mark, let alone several years out, and they could imply that we know more or control more than we actually do over a longer period of time. So if we were going to extend the horizon, I would extend it only a little—to go, for example, from a year and a half to two or three years perhaps. I would stay with the number of variables we currently forecast—nominal and real GDP, unemployment, and some measure of inflation.

Finally, I think that conveying that we're not certain about our forecast is obviously desirable. I know other central banks have used fan charts. They've proven useful. I know they've been accepted. I don't know how well they're understood. But I do find myself wondering in the U.S. context what the average person or the average congressman would actually take out of them. Even over rather short periods of time, the range of outcomes about which we're certain even at the 70 percent level really is kind of wide. So my view is that a qualitative discussion of the sources of risk is preferable to a quantitative one. Over time anything can be well understood, I suppose, but I have a feeling that the range of uncertainty without an academic understanding of what you're trying to do is more confusing rather than less.

So to pull it all together, I'm intrigued by Vice Chairman Geithner's implicit proposal of improving internal discussion with more detail about our own forecasts and what the constraining factors are and where we see policy going. I would not try to pull them together into a consensus view. If we had a consensus view, we would have to tell people about it, and I'd be a little concerned about that in terms of commitment. I also think that we could work on how our current forecasts are actually handled in the Monetary Policy Report. I do not think a central forecast is useful: It has problems in terms of what it says about the Committee and the Committee members. I'm not convinced that common forecast variables or a path of forecasts is useful. I'm not convinced that you can actually handle a more frequent release of forecasts to the public, and I think an explicit numerical discussion of uncertainty is difficult. So that's where I am, for what it's worth.

CHAIRMAN BERNANKE. Thank you. A two-hander from President Moskow.

MR. MOSKOW. I have just a factual question. On the existing Monetary Policy Report, you described it as the Chairman's view. I looked at the existing report. It has a table with the forecast and then a few paragraphs describing that forecast.

MR. REINHART. It's the Board's.

MR. MOSKOW. The Board staff's?

MR. REINHART. No. Ultimately, the Board discusses it in a meeting, and it's transmitted on behalf of the Board of Governors to the Congress to fulfill its legislative requirement. So the Board is directed in the law to provide it.

MR. LACKER. Not the Committee?

MR. REINHART. No. The Board is explaining Committee policymaking, but it's the Board's responsibility.

MS. MINEHAN. So you wouldn't characterize it as the Chairman's?

MR. REINHART. No. The Chairman may choose to talk about the forecast in his testimony. So in some sense you really have two opportunities to talk about the Committee's forecast.

CHAIRMAN BERNANKE. Governor Kohn.

MR. KOHN. When the act was being rewritten, after the Humphrey-Hawkins report was sunsetted, we raised the question of whether it should be a Committee report rather than a Board report. But the congressional staffs are very focused on making it a Board report, in part because they feel that's where the accountability is in the appointments process.

CHAIRMAN BERNANKE. President Yellen.

MS. YELLEN. Thank you, Mr. Chairman. I also want to begin by complimenting the staff for a very thorough and thoughtful set of background materials. In recent years we have made notable strides toward increasing transparency, and that has served to enhance public accountability and to improve the efficacy of policymaking. At this point, further enhancements to our communications are both possible and desirable, and I think our economic projections may be an area with low-hanging fruit. Surveys suggest that market participants attach a very high priority to improved information concerning the Committee's outlook for the economy and monetary policy. In fact, 83 percent of the respondents to the Macroeconomic Advisers' survey accorded higher priority to this objective than to the adoption of a numerical inflation objective. So the provision of more-detailed and more-timely information concerning the outlook would help market participants form sensible expectations and possibly improve internal discourse. We have been publishing forecasts for almost thirty years, so we're a pioneer in this area. But I think we have fallen behind

state-of-the-art practice, and I think it would be useful now to make incremental improvements to the governance structure, the content, and the procedures of this program.

So now let me address each of the questions that Vince sent out in the memo. The first is whether we should provide one forecast or many. My answer is many. We are too large and too geographically dispersed to make a unified option practical. The Bank of England has a committee a little less than half of our size. They seem to be the largest to produce a unified forecast, but the process is reportedly time-consuming and contentious, and I fear that the attempt to arrive at a single forecast could end up undermining our collegiality, not to mention our effectiveness. More important than the practical side is that a unified forecast is not desirable. I think we hold a diversity of views, and I believe that diversity should be respectfully represented in all aspects of our communication. That diversity goes beyond conditioning assumptions, like the price of oil. Some of us have divergent conceptions about the structure of the economy and the monetary policy transmission mechanism. Given the diversity of views, it’s fair to say that in most meetings, no unified forecast or forecast story even exists, and I don’t see how participants who fundamentally disagree could, if we tried to produce a unified forecast, speak in public about the economy without revealing those differences. The differences, on balance, are a source of strength. They reduce the odds that we will become trapped in “group think” mentality, conforming for conformity’s sake, and reduce the risk that we will miss important insights that could help us avoid errors. The problem is that this divergence makes it challenging to articulate the type of unified Committee views that I think markets really crave.

The first question goes on to ask whether individual forecasts should be released in a disaggregated format or presented in an aggregated way. I prefer the aggregated approach that we use now with a range and central tendency. Most of the time we’ll end up with the center of gravity

for the forecasts that can be described in a useful way, even though there are divergent views. Also, conveying how we interpret the body of forecasts will be more useful to the public than simply releasing nineteen separate projection documents. In principle, the drawback of a central tendency is that the results may not be entirely coherent because different forecasters get excluded for different variables. Based on our past experience, this seems to me more a theoretical possibility than an actual problem, but I was intrigued by the discussion in the R&S Division's memo on how it could be possible to identify an entire set of variables for an individual participant as an outlier and exclude them. I think that's worth thinking more about. Finally, besides distributing a central tendency and range, providing a histogram showing the full frequency distribution of forecasts could be useful.

The second question asks whether we should base our forecasts on common assumptions concerning the stance of policy and other factors or, alternatively, appropriate policy and opinions about other factors. I'm certainly in the "appropriate policy" camp. I think the alternative is problematic. Several times in the past we've discussed the possibility of adopting a common assumption of a constant interest rate, but that approach could lead to forecasts that would not be seen as desirable by Committee members. For example, since a constant interest rate may not be the appropriate policy, it could produce a forecast with inflation that's high and rising, and I think that would be confusing to the public and not convey our sense of what would happen. The problem can be especially pronounced as the forecast period is lengthened. A second issue is, as I said, that participants differ on the structure of the economy, and any common policy assumption may make sense in one model but not another. The same comment applies to all the conditions and variables—even things like the value of the dollar and house prices are endogenous variables that

should be determined within the model being used. So imposing common assumptions with a variety of models could lead to incoherent results.

Now, the third and fourth questions concern whether a narrative description of the forecast should be released and how it should be prepared. I think we should provide a minutes-style narrative description of the forecasts. Experience suggests that there is commonly considerable overlap among the FOMC participants regarding the factors that are critical in assessing economic trends. For example, right now a majority of us are focusing on developments affecting housing and motor vehicles, as well as the implications of tight labor markets for inflation over time, and that was reflected in the Chairman's summary yesterday. These factors are usually emphasized in the portion of the minutes that describes participants' assessment of economic conditions. The minutes do a good job of describing the state of opinion and also briefly describe divergent views concerning the economy, and the narrative should also describe the divergent views.

Vincent's background memo emphasizes the need for speed in releasing this information because new data can make forecasts stale. In addition, the Chairman's monetary policy testimony and the issuance of the Monetary Policy Report typically occur before the release of the minutes from the January and June meetings. So it may be desirable to devise a procedure that would allow the forecasts and the forecast narrative to be released before the minutes themselves. We could delegate the preparation and release of the narrative to the Chairman. It seems to me that he has over the past several meetings provided an excellent summary of our discussions as soon as they concluded, and that's the type of thing that I would expect in the narrative. My preference, however, would be for the Committee to agree on and approve the narrative. A Committee vote on the forecast narrative would avoid the possible disagreement that might arise after the release of the narrative but before the approval of the minutes. One way to expedite the preparation of the

narrative is for all of us before the meeting to share our individual forecasts along with a brief written story explaining them. I thought Vice Chairman Geithner's summary really is an excellent template of the form that such a submission could take. Most of the time we would find that there is an emerging majority view and a few alternative views. We could allow time toward the conclusion of an FOMC meeting to discuss longer-run forecasts, and this would provide the staff with some additional information concerning the Committee's views. I would hope it would be feasible for the staff then to prepare a minutes-style summary of views rapidly after the meeting, circulate it, and allow a very limited time and very few iterations for comments and revisions so that the narrative could be approved and released before the full minutes were approved.

Now, I just want to turn to the technical questions that Vince posed. With regard to the frequency of forecasts, the shelf life of projections generally is long enough to support a quarterly production frequency. However, given that we want to provide forecasts for the Monetary Policy Reports in January and June, it's difficult to see how we could evenly distribute four forecasts over the year. The problem is that we have only two meetings between January and June. It would be possible to spread three forecasts evenly over the year in January, June, and October, and eight might also work well, but I fear that there could be a staff insurrection. [Laughter] In any event, on the question of the forecast horizon, I'm fine with maintaining our current practice, but I would not object to a small increase in the forecast period. All we really know about the more distant future is what our ultimate goals are, and I would prefer that we provide that information in a more direct way. The next question is which variables should be included. I'd prefer to continue to include forecasts for real GDP growth, the unemployment rate, and some measure of consumer inflation, depending on the interaction with what we may later decide about the inflation objective. I don't think any of the other central banks forecast nominal GDP. I would drop that, and I think

consideration should be given to providing information on the fed funds rate, perhaps the fourth-quarter level for each year of the forecast or, alternatively, a qualitative statement about direction. The policy path is necessary for understanding and interpreting any forecast, and it was at the top of Macroeconomic Advisers' list for what the private sector wants to see. Large and widening error bands around the central tendency would help stifle the potential for markets to interpret these forecasts as commitments. Moreover, narrative comments on the forecasts could emphasize the conditionality and data dependence of policy. We will obviously need to do at least one trial run in producing forecasts before going public with the new system, and I would propose that we include a numerical forecast and a discussion of the fed funds rate path in that trial just to see how it works.

Of course, all these variables will be forecast with considerable uncertainty, and I think it would be helpful to convey this fact clearly. One way to do it would be to put confidence bands around the forecast numbers, and they could be derived by looking at the track records of the FOMC, the CBO, the Blue Chip survey, the Survey of Professional Forecasters, and so forth. One could imagine adjusting them a bit based on Committee discussions—for example, when participants note that they see the risks as abnormally large or asymmetric. Information on forecast accuracy could be presented in a table attached to the FOMC forecasts to justify our choice of uncertainty bands. My staff has developed a mock-up of a graphical approach to representing the forecast and forecast uncertainty bands, and I brought some copies of what that might look like for you to take a look at. I thought I would just pass it around the table here.[5]

So in summary, I'm in favor of enhancing the forecast information that we release. The key point for me is that we should provide information on the diversity of opinion in the Committee about the numbers and the stories, and I think procedures like the one I described to produce a

[5] Material distributed by President Yellen is appended to this transcript (appendix 5).

minutes-style discussion of our stories would be effective and permit this information to be released in a sufficiently timely manner.

CHAIRMAN BERNANKE. Thank you.

MS. MINEHAN. May I just ask one question?

CHAIRMAN BERNANKE. President Minehan.

MS. MINEHAN. Thank you. That was really interesting, Janet. Your recommendation would be not to condition on a common policy path but have "appropriate policy." So in the end when we publish the forecasts, would it be a range of federal funds rates?

MS. YELLEN. Has this sheet come around to you?

MS. MINEHAN. All right, so it's a range then.

MS. YELLEN. If you look at this sheet—we might do this for all the variables—the bottom right panel shows the federal funds rate. These are obviously made-up numbers. But we have the history, and people would just add their own forecast for Q4 for the federal funds rate. We'd report a central tendency, and we would develop error bands around it resulting in the type of display you would see. So obviously it would be a range of opinions based on appropriate policies reported by the individual members.

MS. MINEHAN. So the background in there is the range of federal funds rates, of appropriate policies that people submitted with their reports.

MS. YELLEN. Yes, the dark band in the center would be the central tendency of our reports, and the thinner, longer lines would be bands generated by numbers we use for forecast uncertainty.

MS. MINEHAN. Thank you.

CHAIRMAN BERNANKE. Thank you. I'm embarrassed about time planning here. These comments have been extremely interesting, but I'm worried about flights and things of that sort. Everyone should feel free to give their full views. Be mindful, if you can, of time, and if we don't have enough time, we'll have to think about how we might reconvene or otherwise extend the discussion. Was there a comment?

MR. LACKER. Yes. I just wanted to ask about the 70 percent interval. Does that reflect everyone's uncertainty?

MS. YELLEN. We would have to discuss how to produce that, but it might be based on, for example, our FRB/US forecast errors that we would apply to the central tendency range.

VICE CHAIRMAN GEITHNER. Sorry, Mr. Chairman. May I just try this again? I interpret you as saying that you infer a central tendency from this process you outlined.

MS. YELLEN. With respect to the story?

VICE CHAIRMAN GEITHNER. You discern a central tendency of the Committee about our view about GDP or unemployment.

MS. YELLEN. Well, we're submitting numbers.

VICE CHAIRMAN GEITHNER. Then you attach some other method for framing uncertainty based on past forecast errors—for example, of FRB/US, Greenbook, Blue Chip, or somebody else.

MS. YELLEN. Yes, exactly.

MR. KOHN. Or our own forecasts.

MS. YELLEN. Or our own forecasts.

VICE CHAIRMAN GEITHNER. But, no, it can't be that either. That's a little different, isn't it?

MS. YELLEN. We don’t forecast the federal funds rate, but we do have data on our own errors with respect to the other variables.

VICE CHAIRMAN GEITHNER. But you’re not suggesting that we try to aggregate or ask the staff to aggregate our own uncertainties that we convey with our own individual forecasts, right?

MS. YELLEN. No, I think that would not be a very useful procedure.

CHAIRMAN BERNANKE. There’s research at the St. Louis Bank that says that the FOMC forecasts are actually pretty good. Was there another two-hander? President Poole?

MR. POOLE. I have a couple of fairly quick points to make. First, in terms of the audience we’re talking to, you really have to talk to the Congress first. We operate under the Federal Reserve Act, and we’re reporting to the Congress. That’s a very important part of the audience. I would put the markets second and then the general public. So whatever we do has to be coherent to all three audiences.

I started with a question, and I think it’s exactly where Cathy was coming from. Do we need to solve a problem? Is there something that is really creating a problem with what we now do? My answer to that is “no.” Do we have an opportunity to move forward? My answer to that is “maybe.” I don’t think we’re really solving a problem. My view is that we are not in deep water in what we do now. Take the fan chart as an example: If you do this six months earlier or six months later, the fans go in different places. Let me use an analogy. If you look at the CBO budget outlook, the CBO tracks changes in the deficit forecast and partitions the change in the deficit forecast into three pieces. One piece comes from changes in economic assumptions; one piece is changes in tax and spending legislation; and the third piece is changes in what they call technical estimates—how much revenue you get for a given tax law. I think that’s a very convenient way of explaining the evolution. There is an opportunity not so much focusing on the forecasts—the wide

range of uncertainty makes it problematic as to how much guidance you're really giving to the market—but to explain why the forecast has evolved the way it has. My guess is that most of our individual forecasts, although they're not all the same, sort of move together. If something happens, we all move, although we're not all moving to exactly the same degree. With the analysis of why the forecast has moved we could provide some insight into how our thinking has evolved as a consequence of new information. We don't do that much right now. It could be incorporated in the Monetary Policy Report. I think some of it is already in there, but why the Committee's central tendency has moved could be made much more explicit. We would probably be able to come to pretty good agreement on that if we were to look at a draft because we're all responding to the same fundamental surprises in the information section.

CHAIRMAN BERNANKE. Thank you. Governor Mishkin.

MR. MISHKIN. First of all, I want to deal with the general question that Cathy alluded to at the outset. I am strongly supportive of more-effective reporting of a forecast for several reasons. One is that it helps the market to understand our actions better, and I think that has a high value. It can be part of the process of anchoring inflation expectations, which I think is a key to successful monetary policy. Very important also is that it indicates a degree of openness and allows public discourse about our views; that has political benefits in terms of showing that we're accountable to the political system. So I answered this question very much in the affirmative.

One issue is what the research has said about this. President Fisher is absolutely right: These issues are subjective. The research staff said that there is no strong evidence, and the reason is that it's almost impossible to get and, in terms of econometrics, it's very difficult. The literature in the area of transparency is, in fact, somewhat unsatisfying because it's very hard to quantify anything. In terms of research strategy, it frequently draws people to do case studies, and I am one

of the criminals involved in that activity. The Chairman has also been involved in doing some work on case studies that we did together. Part of the reason is that you can look at the details and deal with this. If you get involved in evaluating monetary policy, which I did for Sweden recently, you get to talk to wide elements of the society. In the Swedish case, there was tremendous support for this degree of openness, and it was felt to be politically very valuable by some surprising groups. The labor unions were extremely supportive, for example, of this kind of openness and, believe it or not, of inflation targeting—which was somewhat of a surprise.

So let me turn now to the issues that we have to discuss. I want to provide an analytic framework in which to think about this, at least for myself. I think about seven basic principles that are key in terms of how we might go about providing more information about forecasts. So here are the seven principles, and I'll discuss them each in turn. First, we need to allow for the diversity of views. Second, this process needs to be efficient. Third, it needs to be timely. Fourth, it needs to be relatively frequent. Fifth, it needs to explain the forecast—that is, we need to tell a story, a good narrative, about it. Sixth, it needs to emphasize uncertainty. Seventh, we need to stress that the forecast period is longer than the policy period. Let me go into each of these one at a time, and then you'll see that it leads to particular answers to the questions, at least from my perspective.

The first principle is the need to allow for the diversity of views. I strongly believe, particularly now that I'm involved in this process, that the diversity of views is the strength of our monetary policy process. In fact, I take the view that people have very different jobs here. I've been on both sides of the fence—maybe, Janet, you have been more so because you are a president. I was just an executive vice president of a Bank. But Bank presidents bring different information to bear than the governors, and this difference helps us make better decisions. So I believe in this kind of diversity. Another very positive aspect of diversity is that we have a set of staffs. We have the

Board's staff, and then we have twelve other staffs that actually act as a check and balance on each other. Again, that has value. Finally, I believe that committees can make better decisions than individuals. Alan Blinder has a study on this topic that I thought was really quite interesting.

The second issue is efficiency. Any forecast process has to be workable in finite time, and that's really critical. I sometimes get nervous when Dave starts twitching at me, but you don't want the forecast process to overwhelm the staffs. I'm very sympathetic. Having been in research at a Federal Reserve Bank, I have been on the other side of the fence, and so I really understand their pain.

As for timeliness, there are important advantages to getting out the forecast quickly. When I said "forecast," I didn't mean just the forecast; I include the narrative, too, because you'll see that I think the narrative is important. The key reason for timeliness is to give the forecast and the narrative more impact. The quicker you come out with them, the more impact they have. In particular, the environment for getting this information out is much more controlled than that for speeches or even testimony, and I think that's the value. So quicker is much better. Timeliness also makes the forecast and the narrative less likely to be stale. The longer the interval between the policy meeting in which you make a decision and the release of the forecast and the narrative, the more likely they are to be obsolete. One danger is that data could come in and make the forecast look silly. So there's an issue about our looking good. The faster we come out with a forecast, the better off we are.

The fourth issue is frequency. The key here is that the forecast and the release need to be done often enough so that markets get the information they think they need to understand what's going on. Fifth, a narrative is important so that markets, the Congress, and the public not only see our forecasts but also understand them. To be understood, the forecasts need a story behind them. I

strongly believe that we need to write up a good story and that a good narrative can help us obtain public support for our policy actions—which is, again, a critical factor.

Sixth, it's really important to make sure the public and the markets understand the high degree of uncertainty that we face. Forecasts are tough—not just long-term forecasts but also short-term forecasts. David is, of course, nodding his head on this. The key reason that emphasizing uncertainty is important is that it can lessen public criticism when we miss—which we surely are going to do at times. We've actually been very good relative to others, but we're going to make mistakes. At least, if people understand the degree of uncertainty, that will help. When you make clear the uncertainty, you make it easier for people to understand why there's a diversity of views in this Committee. It's not because the participants don't like each other, and it's not because we frequently fundamentally disagree. It is because we have different uncertainty in views of the economy, and that's actually exactly what is indicated by the fact that forecasts are very uncertain. Also, information uncertainty is important information for the markets. We want to help the markets figure out what we're doing and what's going on, and we don't care just about the first moment but also the second moment and even sometimes the third moment.

Finally, the issue of the horizon—I think we need a long horizon. When you look at the literature on optimal policymaking, what comes out very clearly is that the horizon that you have to think about in terms of the paths of the variables we care about is further out than the policy horizon, which I would say would be about two years. Any sensible way of thinking about how we think about policy will typically involve periods that are longer than the two years it takes to affect output or inflation. We need to express the recognition of that because doing so will clarify that, when we have paths in our forecasts, we can then talk about how they are consistent with our ultimate objectives. To give you an example: If inflation is substantially above our comfort zone,

getting inflation down in a two-year period may be too costly. As a result, we may have to talk about a longer period to assure the public, the Congress, and the markets that, in fact, we're doing something sensible. So we need to go to a longer period than we have now. We see this clearly in the Bluebook's optimal paths. I have some issues about their taking as long as they do to get to the inflation objective—ten years—and about how we build expectations, but they do indicate that a period longer than two years is absolutely necessary for thinking about policy.

Let me now use these principles to talk about the eight questions that were posed to us by the subcommittee. First, should the forecast be a joint forecast? I answer very strongly "no." The process for doing that would be way too cumbersome and inefficient. No matter how charming or colorful it would be, it would be a nightmare.

MR. FISHER. Always charming.

MR. MISHKIN. It's hard enough for the Bank of England to do it with a committee of nine people. We have nineteen. Furthermore, at the Bank of England they're all living in the same house and talking to each other all the time. We have people all over the country with very different jobs, and so it's just infeasible to do it. I think Dave would quit. [Laughter] It would eat up a huge amount of staff resources, and we might have some of our research directors quitting or going to the research staffs at the Reserve Banks. It would be very hard to get a timely agreement on it—and, again, I think timeliness is important. It would also be hard to get the diversity of views clearly expressed. So I end up where Janet ends up—I think that we need to keep something like the current procedure in which all nineteen participants give their views. It is very important that there be no attributions and that we amalgamate the views in some way. The procedure we have now may not be perfect—maybe there's something better—but it should be something similar.

Question 2: Should we have common conditioning factors? Here, again, I believe that the diversity of views is a good thing, and so again I agree with Janet that each participant has his or her own conditioning factors. The most important conditioning factor is clearly the path of the federal funds rate, but I have mixed feelings about it. We may want to provide some information about what individual participants think about this. The concern I have here is that the details really matter. There is some danger if people seem to be making a commitment, because we know that any path one specifies is surely not going to be the path that actually transpires because new data are going to come in. I've been very concerned about this issue, and in fact I wrote a paper on it that is cited in the R&S document. Sometimes transparency may go too far. In particular, I was not a fan of the "moderate pace" language that the Federal Reserve used in the past—I was not here at the time, but I think that language did not express the issue of conditionality enough. If the Committee then had to change the path, which it surely might at some point, it could be accused of flip-flopping, which would create severe problems for the Committee. However, maybe we can do it appropriately through fan charts to derive the degree of uncertainty, but we really need to discuss this possibility. The details matter. If we even think about going in this direction, the trial runs are going to be critical, so I want to have a bit more of an open mind on that.

On question 3, obviously for reasons that I outlined earlier, I strongly support a narrative to accompany the forecast. On question 4, I feel that the narrative and the forecast need to be very timely. If we could do this, it would be a great advantage to do it very quickly, possibly even at the beginning of the week after the FOMC meeting. That would require a much more expedited process. We'd have to use some delegation—to the Chairman or the staff—for writing up this process. That would require moving up the Greenbook a bit. For us to produce our forecasts and a narrative, we need to see the Greenbook—I certainly needed to see the Greenbook to come up with

my forecast—but then people could provide information very much along the lines that Vice Chairman Geithner provided. Some might do it verbally. Some might do it the way you did it, which was very nice. That could then go to the staff a little earlier than now—let's say, by Wednesday. Then a narrative could be written up that would go to people before the FOMC meeting and then could be discussed at the FOMC meeting. I don't know how this would work. It would require that we not go through as much of an iterative process as we sometimes do—that is critical for the timeliness issue. One thing that we might think about is that we have the "Recent Developments" part of the Greenbook, and releasing that might have some value. That would be from the staff; it would not be from the Committee. It gives some flesh to the discussion that would be in the summary, so we might think about doing something with that as well.

As to question 5, on frequency, I don't think that twice a year is enough to give markets the information they need. As for eight times a year, again, I worry about losing our top people from the staffs; they might come after us with pitchforks. I tend to lean to four, but there is the interesting issue about the timing of our meetings, so we'd have to work that out. So quarterly seems about right to me. On question 6, because I believe the forecast period needs to be longer than the policy period, for the reasons I discussed earlier, it clearly has to be longer than two years. However, too long a period might put too much of a burden on us. A period of three years, which is common in central banks, would give the flavor of the direction of the path that we're thinking about and would be adequate.

On question 7, to keep things from being too burdensome, I want to use the KISS principle—the fewer variables the better. At a minimum, the three variables that I think are the right ones are the ones that I think are obvious—an inflation measure, an output measure, and an employment measure. I think we should kill nominal GDP; it's a vestige of the past. There is an

issue about the federal funds rate, but, again, that should be discussed. It hasn't been mentioned yet, but I would be uncomfortable providing projections of potential GDP. I think we do need it for our own purposes, but it raises really huge political economy problems because people can think of it as a speed limit or a target for growth, which could be dangerous. So although I welcome it in the Federal Reserve Bank of New York's document that we received, I do not think it would be particularly wise to release it.

On question 8, for the reasons I outlined earlier, I think it's extremely important for us to provide information about uncertainty. Fan charts are the right way to do this. I really like what I see here, but there might be technical details that we'd have to decide on: Should we give only one 70 percent confidence interval? Should we give more shadings? There's an issue about how this chart would be produced. The reality is that it would have to be produced in the same way that the narrative is, in the following sense: It would have to be delegated. The information from the nineteen participants would help in producing it in terms of their views. The staff would have to come up with some measures. Then there would be some iteration along the same lines as the narrative in order to produce it. But it then would have to be timely; it would have to be released with both the narrative and the forecasts themselves. So with that, let me stop. I don't think I've been quite as charming here. Thank you.

CHAIRMAN BERNANKE. Thank you. Intervention, President Moskow.

MR. MOSKOW. I have just a quick question about the narrative. Would you see a narrative significantly different from the narrative that's now in the Monetary Policy Report, other than the fan charts or anything else that would be added? Would you see the same type of thing—a few paragraphs describing the forecast?

MR. MISHKIN. This is why we need trial runs. The narrative needs to be a little more detailed than that and actually a little more reflective of the different views. I think it's a question of writing a good story. One thing I have learned is that, even as a scholar, I learn particularly from writing. In this case I think the Committee will learn from doing these trial runs. Then we might say, gee, this is too short; it doesn't give the flavor, or it is too long and too involved, or it's too difficult to come to a decision about it. So my answer here is let's do it and discuss it, and then we'll have a much better feel for it.

CHAIRMAN BERNANKE. President Fisher.

MR. FISHER. Mr. Chairman, we talked briefly about the Norges Bank and Norway, which is a country of 4.6 million people, a constitutional monarchy, and my mother's homeland. My mother taught me a wonderful phrase, which I want to repeat here as an antecedent to this discussion. It's actually a quote from Santayana: Skepticism, like chastity, should not be relinquished too readily. [Laughter] I admit to being quite skeptical about this exercise, and I will reveal my cards up front in terms of being sensitive to the arguments that President Minehan and President Poole have made as to the predicate question, which is, Is there a compelling reason to do this? Not only is the discussion charming, but I am almost overwhelmed by the encyclopedic knowledge of some of my colleagues. I don't possess that knowledge, and I listen to it very, very carefully. But I have not yet heard a satisfactory answer. Yes, we have had an evolutionary process over thirty years, but is there a compelling reason to change the way we do our business?

If you go back to David's exhibit 1, it says that we presumably would undertake this effort with an eye toward "advancing the goals of economic performance, public discourse, internal discourse, and efficient operations." I think of this in a broader context, which is maintaining and building or, using President Lacker's word, enhancing the public's faith and confidence in the

Federal Reserve, and I think the faith and confidence in the Federal Reserve right now is pretty high. Now, two words are being thrown around constantly in this discussion. One is the "public," and the other is the "markets." By the way, I'm not going to get to the eight questions—I want you to be relieved right up front. [Laughter] I can't get there yet because I haven't answered the predicate question. But I would ask the Committee to consider what "the public" is and what "the markets" are. Governor Kohn said something during our discussion of policy with regard to the market operators—I actually spent three-quarters of my life being one of them—that I thought was quite complimentary and summarized the current state. He said that nothing we have been saying is getting in the way of the stabilizing properties of the market. I really like that. So my question is, What is wrong with the way we're doing things if we're not getting in the way of the stabilizing properties of the market? I agree with Cathy's point that, with regard to the market, our actions speak louder than our words. Day to day there may be variance, but in the long term that's what counts. I believe that the markets may have had a difference of view, they may have been testing us, but they've come around, and our actions have spoken much louder than our words.

If the definition of "public" is the academic community, I understand their insatiable appetites in the pursuit of knowledge. I respect that, but I think there may be other ways of assisting that pursuit of knowledge than by increasing the frequency of our forecasts or the complexity of our forecasts. I want to apologize to my friend from Philadelphia in advance, but are we talking about those who operate the economy—the women and men who run the businesses that create the microeconomy (and many micros make the macro), whether they are $2 million businesses or big businesses? I went back and counted. Since I had the good fortune of coming on this Committee, I have spoken on 236 occasions to managers of big and small operations—CEOs mostly, some CFOs. Not once have I been asked by them for more-frequent forecasts or for all the variables that

we consider or anything that projects the kind of complexity that we've been talking about today at this table. I'm a former Rotarian. I may be one of the few here. I speak to Rotary Clubs all the time. The only question they want to know is where rates are going to go. [Laughter] I don't think they care one whit about the complexity of our forecast models.

But that's not the group I'm worried about in terms of the public. President Poole raised an excellent point, which is that we do have to be mindful of the elected representatives of the people who created our charter and who in the end we all serve, and that's the politicians. I would just ask you to consider the argument that we're having against that background and the risks that it poses. This is a one-way street. We see this from the excellent work that the staff did. There's no going back once you go down this path. Vince mentioned our semiannual schedule set by the Congress. Need we do more? Have they asked us to do more? Should we do more before they ask us to do more? Shouldn't we think of this in terms of negotiating with the political class rather than giving them something for which they may not even be asking. If we give it to them, it may lead to still more questions that we cannot satisfactorily answer. So I would beg the Committee to consider what we're talking about when we're talking about the public and the markets and whether this is a compelling thing that needs to be done now.

I'd like to emphasize a second thing. Obviously, being a Bank president, I do not wish to be party to anything that emasculates the Banks. Indeed, whatever we do and however we do it, if we do it—and I'm not convinced that we should—we need to respect the Banks not only for their research capacity and the diversity of views and, what Governor Mishkin and President Yellen correctly mentioned, their geographic diversity but also as vital links to the public, whether the public is the elected leaders, the Rotarians, the economic operators, the financial markets, or even the academics.

A third point, and then I'll stop, is that I ask that we be practical in the way that we do this. President Minehan mentioned that we do a lot. I have no doubt that we could do more, but we have constraints on our time. In being practical, we also have to be wary of what other questions we raise by providing more information. Some elements may not be interested in our preserving our independence or may be a threat to our independence—I won't mention who those might be since I don't want that on the record. Mr. Chairman, those are my three concerns, and I'll spare you my answers to the eight questions, which I hope I'll have a chance to give at a later date.

CHAIRMAN BERNANKE. Thank you. President Hoenig.

MR. HOENIG. Thank you. I'll frame my remarks around two propositions. The first is the "yes." We should be receptive to changes in our practices and procedures to the extent that they make monetary policy more effective and provide clear public benefit. My general sense is that providing more information about our views on the economic outlook can be a good thing when it comes without impairing the effectiveness of the policy process. The second is the "but." Changes that we make in this regard need to be done in a way that respects the diversity of viewpoints that is central to the effectiveness and the effective functioning of this Committee. I believe that the strength of this Committee and the source of its ability to conduct sound monetary policy and facilitate confidence in our policy come in large part from the diverse backgrounds and views of the individual members. Although at each meeting we must arrive at a Committee decision, the decision and the way it is communicated to the public are shaped by the views of all participants.

In my experience, Mr. Chairman, as policy evolves, it is rarely the case that everyone suddenly sees the wisdom of a major change to the direction of policy. Rather, one or more members begin to articulate concerns with our current policy stance based on their experience and their assumptions about unfolding events. As data begin to provide support for this viewpoint, the

Committee begins to move in a new direction. Even when new positions are not subsequently supported by the data, our discussions benefit from considering alternative points of view and sets of assumptions. Consequently, as we consider options that we might pursue to increase the effectiveness of our communication, I am strongly opposed to changes that would limit the expression of alternative forecasts and viewpoints, either in the discussion within the room or in our communication with the public. I regard steps such as producing a joint forecast or requiring a common interest rate assumption as extremely detrimental to the Committee's deliberation and public communication. Such steps would lead inevitably in my mind to the delegation of decisionmaking to a small group of individuals, and I don't think that's helpful.

With that said, let me focus for a moment on some specific issues on the role of forecasts in policy communication, and I would begin with some comments on the proper vehicle for communicating forecast information to the public. If we decide to move forward with discussions of our forecasts and providing more forecasts, I would like to suggest an alternative—and like all the other alternatives today, it is superior [laughter]—and it is based on how we would choose to do this. If we want to convey this information in a way that is both timely and logistically manageable, we should use the minutes. This is an extension of what we now do. It takes us forward but, I think, in a proper step.

Specifically, I propose that we consider releasing a summary of numerical forecasts as part of the minutes. We all prepare forecasts beforehand. As I remarked earlier, it is important that the information be in the form of a survey of individual forecasts, not a joint forecast, and each forecast should be based on the individual's view of policy and not on a common interest rate path. The minutes would contain summary information in the form of tables or charts on a small set of key variables, such as real GDP, core inflation, and unemployment. This information would be

presented in the form of a central tendency and the range of Committee member views. I would not include specific information about the policy assumptions used for the individual forecast. Members would present their views in the meeting and then be permitted to revisit their forecast in light of the Committee discussion and decision. The forecast period would likely be four to eight quarters, as now, with the semiannual report focusing on the longer horizon beyond that, if we go there. An advantage of using the minutes, besides timeliness, is that a narrative is already prepared. There would be less chance of confusion about the ownership of the forecast. The numerical forecast information would supplement the qualitative discussion currently in the minutes, and I think it would enhance the public's understanding of policy. For example, the recent disconnect between our views and those of the financial markets might not have developed had the markets seen our forecasts of temporarily slower growth and persistent inflationary pressures.

A final issue is the use of common conditioning assumptions in the forecast. As I indicated earlier, I would not be in favor of requiring a common fed funds rate path. I think it might be helpful for the Board's staff to provide information on some of the conditioning assumptions they use in the Greenbook as a starting point for Committee members' forecasts. However, as with the fed funds rate path itself, I would not be in favor of requiring a common set of assumptions for individual forecasts. I think this helps inform the public but also keeps the diversity within the Committee and leaves the Committee more effective. Thank you, sir.

CHAIRMAN BERNANKE. Thank you. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. I want to join the others in thanking the staff for their very helpful memos. These issues are complicated, and some of them are even hard, as has been said, and I found all the memos helpful to me in framing my ideas on this subject.

I find myself, importantly, in agreement with President Yellen and Governor Mishkin—not in every respect, but in some respects. So I'll try to be a little more concise than I was going to be. But I do think it's important to confront the issues that Presidents Fisher, Poole, and Minehan have raised. I agree that there is nothing fundamentally broken about what we're doing now. The markets do a good job, and the public does a good job, in anticipating what we do and understanding how we're going about our business, and they even do a pretty good job in anticipating where we want to go eventually. There is no compelling reason to change right now, but that doesn't mean we're in the best possible place. I do think we could improve what we're doing. To the extent that we can improve the way we explain our policy, particularly as a Committee, it will help the markets anticipate. It will help on the accountability issues. I don't think we need major surgery, but there are some things we can do that might help around the edges on these things. I also agree that markets are insatiable. Whatever we give them, they'll want more; and mostly what they'll want, as President Fisher pointed out, is to know exactly what we're going to do with the federal funds rate three and six months from now, and we can't tell them that. So they will always want more.

One thing that we can accomplish here is to shift attention a bit from the speeches of individuals to the Committee's documents. I have told Larry Meyer and Brian Sack that my goal is to be at the bottom of their league list on who influences interest rates. [Laughter] They don't like that, but I'm getting there. [Laughter] I don't want to influence interest rates when I'm giving speeches. I think it's much better if the Committee speaks and if the Chairman speaks, particularly when he is speaking on behalf of the Committee, in his speeches and his testimony. So drawing attention away from individual speeches to the Committee's views is a very positive thing.

Understanding our actions involves understanding how much we don't know as well as what we think we know. Obviously, we can't anticipate shocks. But as we've discussed around this table, we have very limited knowledge of the dynamics of the economy. We need to be very careful not to give a sense of false precision about what we know. We also need to be careful that we don't get invested in specific numerical projections and become less willing to change our policies and our projections when new information comes in. Partly for these reasons I agree that the story we tell, the narrative, is as important as, if not more important than, the particular numbers that we give out. It's really the story that people use to inform their own forecasts of the future, to judge how events are unfolding relative to our expectations, to understand which aspects of the economic environment we're really paying most attention to, and therefore to help predict. I also agree with the others that we need to recognize and respect the diversity of what is effectively a nineteen-person Committee, we need to avoid doing anything that would discourage alternative views, and we need to think about how to represent alternatives views in our communications.

So against those principles, here are my answers to the eight questions. Not surprisingly, on the first question, given the size of the Committee, the diversity, and so forth, I think that we have to stick with making individual forecasts. I would publish them in some kind of aggregated way, as we do now. I'm kind of attracted to the histogram—let the public see the whole distribution of the forecast—but that's a technicality. People worry about inconsistencies among the central tendencies when you're choosing different people for each central tendency. But in my experience of writing these things up—when the Chairman allowed us to—[laughter] those inconsistencies weren't a major problem most of the time. You could tell a coherent story around the central tendencies. Sometimes we had to use a little imagination, but it wasn't really

incoherent. [Laughter] I think that Chairman Bernanke demonstrated this in his last two testimonies—to take the central tendencies as we submit them and tell a pretty good story that's helpful to the public.

For many of the same reasons we ought to go with individual assumptions. When we use individual assumptions, such as "appropriate policy," rather than a common assumption, we're in effect telling people the combinations of outcomes for inflation and output that we think are possible, if policy is run just right, and that we would prefer. We're giving a lot of information about where we think the economy can end up and where we'd like it to end up. In effect, we're giving our read on where we'd like to be on a Taylor curve that links output and inflation variability. A common set of assumptions, as others have noted, might not coincide with appropriate policy for many participants. We wouldn't be telling people our sense of the best possible outcomes. We could, particularly if we used a market rate path, tell them a little something about where we expected interest rates to go because, if the outcomes didn't line up with where we thought things should be, the markets might sense that and adjust. But there are other ways of doing the same thing. So I think that individual assumptions, rather than coordinated assumptions, are the way to go.

Should we collect and publish the views of the members about appropriate policy in another histogram or central tendency, as President Yellen suggested? We may end up there, but I wouldn't start with that. I think it multiplies the odds for inconsistencies among the central tendencies. You've got interest rates and output now that could also be inconsistent and could create confusion. It risks shifting attention from the forecast to the rate path. I was somewhat drawn to somebody's suggestion that, if we had strong views, we could indicate that qualitatively in the narrative. But for now I'd stay away from the explicit interest rate forecast.

Because I think the story is important, I think the narrative is important, and a minutes-style narrative, which discusses significant differences as well as the common tendencies, is important. Such a process would be helped by our submitting notes with our forecasts that the staff could aggregate and modify after listening to the meeting. I hope that submitting forecasts and notes doesn't make it harder for people to change their minds at the meeting. I'm a little worried—and Governor Mishkin mentioned this—about shifting things forward to before the meeting. It makes the information we get a little staler at the meeting. Already we're getting something that was put together on Wednesday for a Tuesday meeting; it's already a week stale. I'm also concerned that, if everybody has a forecast and circulates it, having an exchange of views in which people change their minds might be a little more difficult because you have written down exactly what you want. So we need to be careful about that tendency, but I still think we could submit narratives and that would help.

I'd favor more-frequent updates. I was thinking about quarterly, but then there's President Yellen's point about three times a year. The long interval is between July and February. Maybe we ought to start by updating between that seven-month-or-so interval and then see whether we want to do it even more frequently. But I think we could update a little more frequently than we're doing. I'd keep my focus on just a few variables—output, unemployment, and inflation. Those are the key ones. I'd drop nominal income. We're not interested in velocity anymore. Other variables, like housing markets and energy prices, could be covered in the narrative. I would like to formally convey some measure of uncertainty. I'd be tempted to use past forecast errors to do that. I don't think I'd like to try to fine-tune a fan chart to begin with. If the Committee had a sense that uncertainties were particularly large or particularly small or were skewed to one side or another, we could cover that in the narrative.

Then, I have two thoughts on procedure. First, we need to allow for some dry runs to see how things work out wherever we end up. Second, as a former staff member, I can tell you that senior staff members are already stretched very thin around FOMC meetings, especially around the semiannual report meetings. So if we ask them to do more, we need to think about what else we're going to ask them not to do that they're currently doing. Thank you.

CHAIRMAN BERNANKE. Thank you. First Vice President Barron.

MR. BARRON. Thank you, Mr. Chairman. It may come as a surprise to some of my colleagues, given my expressed concerns over publication of numerical inflation targets, that I am very supportive of publication of forecasts by participants. The Committee has for some time now made routine references to the outlook in the statement, without an explicit Committee forecast. Explicit forecasts will, in my opinion, add to the already improved transparency and accountability of the actions of the Committee and will, over time, serve as a reference point for expressing the important differing views among the Committee members at this table and in public speeches. As cumbersome and as painful as the process might be, at least initially, the Committee also needs to develop a consensus forecast that would embrace a central tendency outlook. However, this forecast should embrace, not truncate, outliers and use those as a signal of dispersion of views around the forecast.

As for the basis of the forecast, it seems logical that some agreement on assumptions would lead to fewer outliers in the forecasting process. While I can appreciate the benefits of the "common assumption" approach, I would suggest that the Committee follow the "appropriate policy" approach as it relates to the federal funds rate, at least at the outset. That said, one alternative might be for the staff to suggest a set of common assumptions that would be used in

the development of alternative forecasts by the participants. However, it would be understood that each participant's baseline forecast would be free from imposed assumptions.

I believe it is imperative that any forecast be accompanied by a story to support the outlook. This is consistent with my own recommendation as it relates to question 7 that we should minimize the number of variables that we use in the forecast for the public. With just a few key variables put forward, we should be able to agree on a narrative for the forecast, much as we agree on a narrative for our current policy statement. I recognize that this will be cumbersome and time-consuming, but numbers without the story would be analogous to asking a doctor to treat a patient by seeing only the skeleton. The story could be developed in a minutes-style description, but I would suggest that the forecast and description be an addendum to the minutes. This would enable participants to share their forecast and opinions at the meeting. In the discussion process, participants would be given the opportunity to absorb the discussion of the meeting and the various forecasts and then go back and visit with their staff to consider if any changes are warranted in their own forecast and outlook.

I hope that, after the resolution of the start-up problem that would no doubt be encountered in this process, the current publication schedule of the minutes for those meetings where we do set forecasts would be restored. That said, I hope also that the debate over the story would be limited to substantive issues somewhat like a dissent on the current policy decision and not a vehicle to capture every nuance in everyone's forecast.

I suggest that the forecast frequency be limited to two per year to start out but that we would eventually move to a quarterly forecast, much as has been said earlier. Listening to my staff talk about the planning period and the policy action requirement so far as time is concerned, I am struck that a three-year planning period would be ideal from a forecast standpoint. The

process would be more effective, at least at the outset, with fewer rather than more variables, and I suggest that those variables be some inflation measure, real GDP, and unemployment. My preference is to exclude a fed funds rate forecast because it could be interpreted, as mentioned earlier, as a commitment. As for the uncertainty, clearly our story must address uncertainty and potential changes that might come in the future. I would choose not to use fan charts, at least at the outset, as I could almost bet that a fan chart on unemployment would be on some congressional committee member's desk at an upcoming hearing, illustrating the point that, if we miss our target, millions of people will be unemployed. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. I also want to start by saying that the memos that we received from the staff before this meeting were helpful, and I think that Vincent provided the right set of questions to guide our discussions. The goals that were laid out in the memo that Dave distributed seem appropriate to me. From that memo and the comments from David and Brian this morning, assessing whether releasing more forecast-related information will improve economic performance appears difficult. However, I am persuaded that, by making some modest changes to our current practice of preparing and releasing forecast-related information, we could readily and inexpensively facilitate a richer internal discussion and at the margin better inform the public about our thinking. So I want to say at the outset that I'm interested primarily in using the forecast to help us better understand each other's thinking about longer-term objectives, policy risks, tradeoffs, and the workings of the economy, along the lines laid out in Vice Chairman Geithner's memo. From my assessment of our current practices and the experience of foreign central banks laid out in Karen's memo, I find no compelling case for releasing additional forecast-related information to the public, with one exception related to the

forecast period that I'll comment on later. So using Vincent's language, I'm in the "modify the status quo" camp, and I'd like to answer Vincent's questions from that perspective.

I support the "independent" option regarding forecasts. I think there is great value in the diversity of opinions that individual Committee members bring to both the internal and the public discussion about monetary policy, and I would like to use it as constructively as possible. Right now, I am not in favor of pursuing a single official forecast to be published by the Committee as an element in our policy communication process. Although I am not opposed to publishing information about individual forecast submissions, I think it would be fine just to pursue the central tendency approach that we're using and the forecast range summaries that appear in the Monetary Policy Report today. Regarding the conditioning assumptions, I think it would be counterproductive to impose a common definition of appropriate monetary policy or a common set of conditioning variables. My hope would be that the assumptions and the conditions that are important to each individual's outlook would be revealed as part of the dialogue that we have among ourselves about our forecasts. I suggest that we incorporate a summary of our views in the semiannual Monetary Policy Report. For now, it would be enough for me to simply reflect the general sense of the conversation in the Monetary Policy Report and in our minutes, in the same way that we regularly summarize our views about the outlook and the policy situations today.

I have no objection to delegating the release of a minutes-style description of the Committee's forecast discussion to the Chairman, subject to some consultation with meeting participants in the drafting process. The process that we're currently using to review the minutes after each meeting could be used for drafting and publishing such a description. The narrative then could be included in the release of the Monetary Policy Report, much as the central

tendency forecasts are included today. My suggestion is that our forecasts continue to be shared in our semiannual format. I don't see the need for a more-frequent release of forecasts, although listening to some of the comments today I wouldn't be opposed to going to quarterly once we get some experience with the process.

One important change that I would make is that I would supplement our current semiannual projections with a medium-term forecast for the relevant variables. Governor Mishkin mentioned three years. My personal preference is to go out to a fifth year, so I would continue to do the one and two years and then go out to the fifth year. My guess is that in most cases providing something like a five-year period is long enough to assume that the fifth year would obviously be made under the assumption of appropriate monetary policy, and that would generally align with individual members' views of our longer-term policy objectives. Even if a five-year period is not long enough to reveal our long-run objectives perfectly, the longer period will help us to clarify the pace that the Committee members view as appropriate in terms of moving toward a more desirable inflation rate. It would also provide a description of any tradeoffs that we perceive in meeting our objectives.

I am comfortable with publishing a small set of essential outcome variables, much as we do today. At some point we might want to discuss further whether it's still useful to include nominal GDP, as others have mentioned, and what price index or indexes we should include. For now, I am not proposing that the forecast discussions be extended to include any formal measures of uncertainty.

In summary, my preference is to stay much closer to the status quo than many of the other options that were presented by the staff. We have a lot to gain from shifting the focus of our internal policy discussions to include a medium term, and we can share that information

qualitatively with the public at a very low cost. These modest steps would not preclude us from making more-ambitious changes that the Committee might wish further down the line. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you very much. It is a little after 1:00. Why don't we take a break for lunch? If people could be flexible, we can start somewhere around 1:30, maybe a few minutes before, depending on how efficiently lunch is served. If anyone has concerns about flights or anything like that, could you please let me know during the break? Mr. Vice Chairman.

VICE CHAIRMAN GEITHNER. Do you have a sense, a reasonable expectation, of when you think we'll try to stop? It's very important, but we could do this for days.

CHAIRMAN BERNANKE. It should be somewhere between 2:30 and 3:00, if we take a half an hour for lunch now, unless I hear concerns about flights and the like. It's lunch time. Thank you.

[Recess]

CHAIRMAN BERNANKE. Let's resume. Thank you. Let me start by saying that we've had an enormous amount of discussion. If anyone is inclined to submit a memo to the Committee or to the subcommittee elaborating on your views or responding to some things that you've heard, please feel free. It will be very helpful to receive any information like that. Let's continue with our go-round. President Stern.

MR. STERN. Thank you, Mr. Chairman. In the interest of time, I'd like to be able to say that I agree with Governor X or President Y and just let it go at that, but there are some nuances that I feel compelled to cover, so I will. Let me just start out by saying that, while I certainly favor some changes to the production and publication of the forecast, I do think we need to

proceed, at least in some areas, cautiously and conservatively. After all, we are the central bank. [Laughter] Beyond that, once we make these changes, we probably won't be able to retract them; so we'd better make sure that we want to do them before we proceed.

In that spirit, let me address the questions. Questions 1 and 2 fall into that category. I think that we ought just to continue what we're doing now in terms of conducting a survey of individual forecasts and aggregating them. I have reservations about trying to come to common assumptions, for lots of reasons. Practically it would be very difficult, and I'm not sure at the end of the day that there is a big payoff. So I favor the status quo so far as those first two questions are concerned.

Question 3 pertains to the narrative description, and there my answer is "yes"—the forecasts should be accompanied by a narrative description. That step is very important, and it feeds into question 4: Should the Committee jointly agree on the minutes-style description or delegate the release? We have a number of options there. As some people suggested, you could tie this in with the minutes in one way or another. That runs the risk of the forecast's becoming stale by the time the public sees it. I'm perhaps a little less concerned about that than some others because the public will know when the meeting occurred. They know what information we didn't have, and they presumably know we're not clairvoyant. [Laughter] Let me put it this way: I am not clairvoyant. Some of you perhaps are, but if so, it escaped my notice. [Laughter] Another way of handling this would be to submit the forecasts with brief narratives in advance; then, of course, we'd have a pretty good jump on preparing the material at the end of the meeting. So if we're concerned about timing and about forecasts becoming stale, we would have the advantage of having materials before the discussion at the meeting. We can find ways to get out the forecast and the commentary associated with it in a more timely way to the extent that we

think doing so is important. Now, here a dry run or two might be very helpful, and I think it will turn out to be essential to changes that we might make.

Question 5 is how frequently the forecast should be made. Here again, I'm not sure the current schedule is too bad. Adding a third forecast each year to fill in the hole in the fall and maybe to address a bit the issue that Bill Poole articulated about providing more information about how our views are evolving—that might work out. But this is another place in which I would be relatively cautious about being very ambitious right off the bat. Similarly, with how many years the forecast should cover: I think there are arguments for extending it beyond the current period, but again, I would want to do some dry runs and look very carefully at what we gain before we committed ourselves to going out three years or five years or whatever the period might be. As for the number of variables forecast, I think we need an inflation variable, a growth variable, and some sort of labor market variable, and I'd let it go at that. Putting out more things would only add to the confusion. We could always decide at some future time to put out a federal funds rate number, a year-end number or something like that, but I wouldn't start with adding it right up front.

Finally, should there be some attempt to convey formally the uncertainty surrounding the forecast? There my answer is "yes." Whether we do it with fan charts or with some other approach is something that we can work out, but I think it is very important to do. I don't think right now that market participants or the public more generally think that there is little uncertainty associated with our forecast, but it's important to underscore the high degree of uncertainty associated with policymaking. Those are my views.

CHAIRMAN BERNANKE. Thank you. Governor Bies.

MS. BIES. Thank you, Mr. Chairman. Let me just make an introductory remark, and then I'm going to go through these questions fairly quickly. First, I've heard different reasons here for our looking at change. One issue is to improve the credibility of the Fed. The point about credibility that I'd like to make is that it is a trust issue. You earn trust by demonstrating that you can achieve the objectives of your organization. I think we have credibility. Whether or not we put out a forecast, our credibility is precious. If we don't demonstrate our ability to control the inflationary pace, we're going to lose that credibility whether or not we have a forecast. Accountability, too, is important. We are a central bank in a democracy, and whatever we can do to enhance transparency—to let folks understand how we come about our policy choices—is important. I use the word "enhance"—President Lacker or someone else used it earlier, but I like the word—because it says that things are going well. We always have ways in which we can improve, and we should be looking at change on the margin, not major changes.

I also agree with Government Mishkin and a few others that the strength of the way the central bank is set up in this country is the diversity of viewpoints. We not only get different regional inputs, we also have people from different backgrounds sitting around this table, whether they are Ph.D. economists and experts in monetary policy, experts in Reserve Bank operations, or folks from the private sector. We all come at monetary policy from a different perspective. For that reason, if we go forward in this vein, I support individual forecasts and retaining that diversity of viewpoints. Therefore, I don't support any common assumptions. Each of us should be free to choose the framework in which we produce our forecasts. I worry that forcing common assumptions sort of forces convergence, and I would not be likely to support that.

I feel strongly that the most important part of issuing a forecast is the narrative. If we just put numbers out, I don't know what value added we have. The numbers in the Greenbook don't vary a whole lot in most of the scenarios, but the narratives give a different flavor. As you read through the scenarios, you can say, "Well, I feel strongly this way," but the model doesn't produce a whole lot of difference. So I think it's essential that we talk more about it in a narrative form. That qualitative aspect really adds value to a forecast, particularly with the diversity of views that may occur from time to time. In terms of how we do the narrative, the proposal that Vice Chairman Geithner circulated is a good framework that we could use to start. Again, if we do that before the meeting, it may help the timeliness of the communication. It should come out at the same time as the numbers, whether it's tied to the minutes or tied to the Monetary Policy Report. It is part of the overall process.

As for technical aspects of the forecast—again, based on the comments about staff work, I agree that we need to keep things simple. Twice a year is sufficient, at least initially, partly because we shouldn't overcommunicate the ability of monetary policy to fine-tune short-term variations in inflation and monetary policy. I think about my life as a corporate CFO and the frustration of being held quarter to quarter to the results of a company when so much is going on and you are managing the long term successfully. For that reason, and because the lags in monetary policy are so long, I think we're overcommitting—whether to the Congress, the general public, or the markets—about our ability to implement and affect markets by doing too short a forecast period or too frequent a forecast. However, going forward I would lean toward what we have now in the forecast and not go out longer. I understand that people want to go out further because they think that doing so signals what our long-run real objectives are. But if we want to set an objective, let's just set the objective rather than having a longer-term forecast

because out in the long run we're more prone to volatility and because timing, too, will be more of an issue. I also would favor just the three variables that are related to our mandate from the Congress—inflation, real GDP, and the unemployment rate—varieties of which are to be determined, but they should be tied to the mandate. Down the road we could add more, but for now let's keep it to those three.

I think it's important to communicate uncertainty surrounding the forecast, and I would do that with regard to two dimensions. First, whatever the consensus, in the five years that I've been here, there have been periods when we did not know how far policy was going to have to go. One instance was when we started down the path of raising interest rates, we knew we were going to go at a measured pace and we clearly signaled for a long period that this was where we were going and that we felt confident that a 1 percent funds rate was too low. We were not sure of the stopping point, but we knew we had a long way to go. Second, regarding the central tendency, it is important to signal a rise in uncertainty around turning points—that our forecasts about them depend a lot on incoming data. If in the Committee we have an outlier or really different viewpoints, we need to spend a bit more time in a narrative explaining why we have a difference of views.

The only other comment I would make is that, in thinking about the alternatives and the variability around them, it will be a challenge to communicate that effectively. So we should, as some suggested, do a few dry runs. I've been spending a lot of time recently on Basel II, Pillar III, disclosures regarding uncertainty and risk. Looking at what we really can control through monetary policy and differentiating that from other things going on, the style that we choose in talking about uncertainty and risk regarding the forecast will be very important. So I think it would be good if we practice that communication a little first. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. I will try to be brief. I was impressed with President Yellen's excellent presentation and the thoughtfulness and scope of what she talked about, and I agree almost 100 percent with everything she said. But I want to mention a few things that I think are important. There's an old forecasting adage, if you've ever been in the forecasting business: If you can't forecast well, forecast often. [Laughter] Now, that suggests to me that, if this exercise were only about the forecast, it might not be so important to do frequently. But the purpose of publishing this information on a more regular basis is not so much about the forecast as it is about communicating policy and the views of the Committee to a broader audience. Our forecast is almost a byproduct, but it provides, in my view, both the foundation and the context for our current thinking about current policy and future policy. That's really the value of it to me. Providing a forecast and a narrative would provide a richer context. It would allow us to be perhaps a little more expansive about things in the narrative. I'll come back to that in a second. We spend so much time around this table parsing words in our statements each time, and having a richer description of the context in which policy is being made and the views that are being expressed would allow us to get away somewhat from our focus on the language in the statement itself. It would provide us with some more flexibility, and we wouldn't have to worry quite as much about every word being parsed for some new meaning. The purposes go beyond just the forecast and its part in this communication. Indeed, a broader principle is the transparency of the policymaking process. So let me go through the questions and provide for each of them a quick answer and perhaps a little nuance.

I certainly agree with most people around this table that we need to have individual forecasts. I strongly believe in the "independent" approach. There is huge value to the diversity

sitting around this table. I don’t think we want to put that at risk, so I’m very supportive of that. In terms of common assumptions, in particular on the conditioning variables, I don’t think there ought to be common assumptions. We ought to use appropriate policy. I have a little uncertainty in my own mind about whether that ought to be an explicit part of the forecast in terms of what we publish. I am of two minds on that issue. On the one hand, I’m sympathetic to the notion that you want to be very careful about imprinting in the minds of the public that the forecast is some kind of guarantee or commitment. I think that’s not a big problem; it can be overcome with some discussion and fan charts and other things. On the other hand, publishing it has some value. I think about the times this fall when we were sitting around this table talking about the weakness in the economy and housing and what we thought our outlook was. At the time, the markets were projecting that we were going to drop the fed funds rate to something like 4¼ by this spring, but I didn’t sense at the time that this group would have put as much probability on that occurring as perhaps the market was. If we were in the business of generating these forecasts, that disconnect wouldn’t have happened, or it would have been much milder, I suspect. There would not have been as much uncertainty nor as much movement in those interest rates had we been more forthright about what our thinking was going forward. So I think there are some benefits to reporting out the range of what people think is appropriate policy going forward, but I acknowledge it also has some risk.

The narrative is terribly important for making this work. Indeed, that is where you are providing the richness. I think it ought to be a minutes-style narrative. I’m a bit torn as to whether or not individual Committee participants should have the opportunity to write a side bar if they are really uncomfortable with something. Certainly, if we allowed that, it should be done without attribution. But I believe that the issue here is more about timeliness and whether we

can do this in a timely way to make it work, which is speaking to Rick's concern. We just have to struggle with that a little and figure out what might work best.

How frequently should the forecast be made? I lean toward four times a year. I think that's a good frequency and puts the forecast roughly at every other meeting. At first, this will be very difficult to do, but if we get into a production cycle, I think it is certainly feasible. As to the issue of how many years the forecast should cover, I think that it should go a little longer than what we currently have. I lean toward three years. As we go out, all we have to do is just say something about what we believe the long-term trends are or, in some cases perhaps, what our objectives may be. Perhaps we want to get far enough out so that the long-term trend is revealed.

This gets back to what issues and what variables we report. I never have liked the phrase "potential GDP" because I have never really understood what it meant or how to measure it. But I do use the word "trend" a lot. I'm not sure it's a bad idea when you're collecting the forecasts from the members, much as Vice Chairman Geithner did, to report what your view of trend is. We may or may not choose to publish that for some of the reasons that Rick perhaps suggested—although I'm less concerned about his concerns, I certainly understand them. But it would be terribly useful to gather that information and to share it—maybe only internally so that we have an idea of where people think the economy is in a long-run sense. The variables we ought to publish would obviously be real GDP, unemployment, and a measure of inflation (whichever one we decide seems most appropriate). I'd be okay with a trend estimate, although I don't feel strongly one way or another. Producing a fan chart or some information about the range of what the Committee thinks is appropriate policy would be informative. In particular, I like Janet's pictures because, as you notice, it has no line in it. There is no point forecast. As we convey

uncertainty about the forecast, we want to do everything we can to steer people away from the notion of a point forecast on anything because they'll latch onto that point forecast and disabusing them of that will be very difficult. Steering them away from a point forecast also helps stress the importance of uncertainty in our forecast going forward, and I think we need to convey uncertainty. I'd even be inclined to report, as these charts do, just central tendencies and not any medians or point estimates for any of the variables. I think that's a terrific idea.

Finally, I'd like to make a suggestion. It will be very difficult to design the details around this with the whole Committee. I think Governor Kohn alluded to this consideration in the beginning. So I would strongly support a motion that either the communications subcommittee or a subcommittee that they delegate to would come back to this group rather quickly with one or two well-thought-out, concrete proposals that we can discuss in detail and begin thinking about how we might produce one or two dry runs to work out the kinks. I think we'll make much more and faster progress in getting an outcome that we are comfortable with if we have something concrete in terms of a proposal to talk about. That's all I have. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Warsh.

MR. WARSH. Thank you, Mr. Chairman. In my views, I associate most closely with President Stern. So I will avoid going through all eight questions and will provide perhaps three further thoughts on what President Stern talked about—first, on what our dominant goal is; second, on what the benefits of going forward are; and third, on how we might go to market with something along these lines.

First, with respect to the dominant goal, I think, as Governor Bies and many others have talked about, it is our credibility. Our credibility today is somewhat asymmetric, in the sense

that I think that we have a lot more credibility that we could lose in this exercise than we could gain. Not only is the credibility of this institution very high, but I would say it is even higher than it was six months ago. That suggests to me that we should go slowly, conservatively, and prudently through this process. How does that relate to forecasts? When I think about the forecasts that we considered yesterday for the fourth quarter, which has passed, I'd say that our staff does a better job than anyone on Wall Street or than many of us could have done alone, but we see the errors involved—which is not at all a criticism but a reality of the business we're in. I hesitate to think about making forecasts four times a year, including periods we were quite far into, and about how that affects our credibility. Instead of extending into a third or fourth year, I would think about making forecasts in a going-forward, rolling eight quarters way so that we would always have a full two years in front of us. We wouldn't be in some ways culpable for making an error of information that we really should know in the market's expectation. It does strike me as a little odd that our forecast period changes by virtue of our current calendar. I think about that from a credibility standpoint: I don't want to mess up in front of these markets so obviously.

I'd put the question of frequencies in the context of what benefits we are trying to achieve. It seems to me that the predominant benefit is strengthening the transmission mechanism of monetary policy between us and the capital markets and the reaction function of the capital markets back to us. If we provided forecasts four times a year, I fear that our numbers might replace the markets' own forecasts. That is, they might say, "Well, I'm a little bit more robust in my views than the Fed. So I'm going to take their numbers and add a couple of tenths, because I'm the chief economist at Morgan Stanley" or Merrill Lynch or Goldman Sachs. I worry that our numbers might end up polluting the quality of the information they go out with,

and then we would be reading back their numbers and saying, “Boy, our numbers look a lot like theirs. Aren’t we very good at this?” I worry about that transmission mechanism effect. In terms of the quantitative and qualitative information we put forward, the focus really should be on what Don described as the story, the narrative—one that Wall Street and the rest of our constituencies, like Capitol Hill, can think about, ask tough questions about, and try to interpret. What we get back then in terms of their quantitative and qualitative assessment could be better. All of that speaks to the focus on the narrative rather than on the numbers.

Finally, how would we go forward with whatever we conclude, and what would be the best means of ensuring that this incremental work that we’re doing has the beneficial effects that we hope for? To achieve this goal efficiently—I’ll use words that may be a bit more glib than I intend—we should use a “benevolent leader” model. I’m not saying a “benevolent dictator” model in which we all say, “Hey, Chairman, here are our best views; they are all yours.” Nor is the model a pure democracy, where all nineteen of us parade, “These are my numbers. This is my view of the world. These are my estimates.” In which case we provide more information, but I’m not sure we’ve really helped the cause of what the Fed is trying to achieve. The “benevolent leader” model probably falls somewhere between the two. With that model, we would use the opportunity or the timing of the monetary policy testimony, when everyone’s attention is on the Chairman and the Fed for those macro forecasts. The Chairman would report the work product, and the work product would have two pieces. The first—and I don’t mean to prioritize one over the other—would be the Chairman’s work product, which would incorporate the views of others as he sees fit, and he might well want to reference where his views coincide with the central tendency and where they differ. But in that we ought not to constrain the Chairman. In that way, I don’t view the Chairman, in his testimony or in his announcement of

projections, as the press spokesman for the FOMC. Those are his views. But second, and very much alongside his views, he would present our views. His presentation of our views is useful in making certain that a lot of attention is focused on them. In answer to one of the questions from the subcommittee, in some ways we might well be delegating to him the ability to draw a central tendency and make appropriate conclusions. I trust in his ability to do this. If a future Chairman doesn't think independently and honestly provide accurate views of what the Committee members have said, the Committee has plenty of checks and balances at its disposal to make sure that we have some discipline over that second half. So that's an appropriate way to think about getting the most bang for the buck of this incremental work with which we're proposing to go forward. One of the memos said that the public is likely to place the most weight on a forecast made by the entire Committee. I think that's true only if the Chairman's views happen to coincide with the Committee's. If the Chairman's views differ from the Committee's views—which I presume is not impossible—it is not obvious to me that the statement in the memo is correct. If the Chairman's views differed substantially, there would be, for better or for worse, different power centers and sources of information, and I think the markets would be looking at each. So that's perhaps another reason that I think this "benevolent leader" model might be the best way to go forward. Those are just some preliminary thoughts. Thank you.

CHAIRMAN BERNANKE. Thank you. President Moskow.

MR. MOSKOW. Thank you, Mr. Chairman. As I thought about the alternatives before us for making forecasts, I had an even greater appreciation for the way we've done this to date. I looked at the Monetary Policy Report, of course, and other things that we've done, and I think we've been well served by the approach we've taken to date—the twice-a-year forecast and the central tendency descriptions. Some of us were here when Chairman Greenspan told us that he

didn't really care for these forecasts very much. He said it was psychologically debilitating for him to discuss them in his testimony [laughter] three weeks later because they became stale. Well, Chairman Bernanke has done an excellent job, and I don't think he has been psychologically debilitated so far that I'm aware of. [Laughter] But you have woven them into your testimony, and I think it has been very effective. So if there are important improvements that can be made, I certainly would favor them. But I don't have a good sense at the moment, as some others have expressed, which communication issue we're trying to address here. The background memos were first class, and I should compliment the staff. They did an excellent job of describing how forecasts can play an important communication role for central banks that have adopted inflation guidelines in one form or another. Of course, we haven't adopted any yet. Maybe we will. I think that's still an open question. But depending on the specific mandates of the central bank, the forecast procedures may depend on those details. In an ideal world, I'd prefer to know more about how we're going to address the other communication issues first. Specifically, will we adopt a quantitative inflation guideline? Will we specify a timeframe for achieving that objective as well? How we answer those questions will give us a framework for deciding what types of forecasts we want to provide. I guess that will be the discussion in March.

In the meantime, we should go slowly in making changes in our current forecast process. Our approach to improving transparency has been incremental. We have taken a step, sometimes a small step, and then we assess that step before we take another step. Over time we make a series of steps that has significantly improved our transparency. This approach has served us well, because, as Gary said, it would be very difficult to reverse a step that provides more

transparency. It would be viewed as a takeaway. In that context, let me quickly go through the questions; then just for the record, I'll make some summary comments.

So, one, I would say that we want to have individual forecasts. That's what the sense of the Committee seems to be. Two, they should not have common assumptions. I think it's important that they should be based on appropriate policy. They should be what we actually think is going to happen. Otherwise, it would be very confusing. I think that a minutes-style narrative would be helpful. We actually do it already. It's a Board of Governors document, but we do it. I'll say a little bit more about that later. Should we jointly agree on the narrative? I think we should. We have to work out the timeframe, but I think we should. How frequently? I could see a case made for starting out doing one more a year in the fall. Doing it would be difficult, for reasons that Janet gave, given our meeting schedule. But it could be done, and I think it could be done without a lot of work. I'll get to that later as well. How many years? I would like to go more years, as you know, rather than fewer. I like Sandy's approach, going out five years, but I certainly think we should extend the timeframe. How many variables? I would drop nominal GDP, as others have said. Then, on the uncertainty question, my initial instinct is to communicate it in words rather than in fan charts, but that's something we could learn more about. I'm open to considering other ways if we find one that is simple and that people can understand.

Let me make a few overall comments. First, I thought that the document that Tim circulated before the meeting was useful. The major benefit to me in looking at it was to see what assumptions you're making, and I think that does help us in communication and in understanding where people are coming from as they make statements at the meeting. It's not something I would want to see made public, but I think it does help us in terms of

communicating with each other. Second, there was some discussion at one point about actually putting out a forecast of the fed funds rate. I'd be very cautious about that. I know this is probably at the top of the list of what private-sector people want; but for obvious reasons—as Don said, they'd like to know what it is going to be at our next meeting—I would just be very, very careful about that. Third, I thought Tom Hoenig had an intriguing idea about putting this in the minutes. From an efficiency standpoint, doing so has a lot of advantages. In the minutes we actually describe what we think the forecast is, and we all review that description and make changes, and the process has been fairly efficient so far. I could see doing that without producing another document, so it would still be a Committee document. Of course, the narrative would still be the Committee narrative, but we'd just do it as part of the process of reviewing the minutes. I don't think you need any side bar disagreements in there because we do that already. In some cases, we say "many members" or "some members." I think it is handled quite well. So I'm intrigued by and attracted to that suggestion from an efficiency standpoint, and if we were going to do a third forecast, say in October, it doesn't have to be a separate document at all. It could just be in the minutes. We could have a little table with the forecast, the central tendency, and the range, and then a description in the minutes.

That brings me to the point that a number of people have made about a dry run, which obviously is crucial, because we'll learn more about the process. This gets back to the point about who does the description. Is it the FOMC? Right now, the FOMC does the forecast, and the Board of Governors does the explanation of the forecast. If we put it in the minutes, it would be an FOMC description, and the narrative would be the FOMC's narrative. In terms of timing with the Chairman's testimony, this time the minutes come out just after you testify. So to fulfill the accountability issue that the Congress wants, we could have it in the minutes as an FOMC

narrative, but the Board of Governors could then adopt it if the Congress felt that was important from an accountability standpoint. But it could be the same document. That way to do it seems to me to be more efficient, and it would be the Committee's view.

That gets me to Kevin's point about whether we are constraining the Chairman when he is testifying or speaking about this forecast or about the economy. Certainly, we don't want to constrain the Chairman. His credibility is the Committee's credibility and the institution's credibility, and so it's crucial that we not constrain him in that way. But if he felt strongly about a difference between what the central tendency of the Committee forecast was and his own view, I have great confidence that he could handle that without detracting from his credibility but still enable us to have a Committee narrative on the forecast. As I said, I think a dry run would help us understand this better, but I do think we want to do this in as efficient a way as possible before producing additional documents because it does require a lot of effort, particularly from the staff here but also from all of us who are involved and our research staffs.

CHAIRMAN BERNANKE. Thank you. Governor Kroszner.

MR. KROSZNER. Thank you very much. The question that Presidents Poole, Minehan, Fisher, and others asked—Why are we doing this?—is always the important one. You always have to think about the objective and what you're trying to achieve, so that question has to be taken very seriously. As part of our general obligation to improve the monetary policy making process, we are doing this as part of the broader evolution in improving transparency. We need to be proactive. We don't have to wait for someone to ask us to give them this or that. We should be controlling that process, and we should always be thinking about ways to improve, and this discussion is very, very useful in thinking about how to move forward. I want to repeat the

kudos to the staff for the excellent memos that they put forward, giving us both substantive information about what others do and ways to think about any sorts of changes.

I'll go quickly through the questions. I think it's very valuable to have different points of view that are reflected in the forecast. Part of the value is that it is in the spirit of the Federal Reserve Act. A forecast that is seen as purely centralized would to some extent be contrary to the act and could raise some hackles. It is valuable to get those differences of views out there.

Whether there should be common assumptions, I guess I differ a bit from where everybody else is. I think it would be worthwhile to make some effort when we're going through the dry runs to see if there are areas of commonality because it would provide more information. As President Lacker said, the clearer, more centralized, and more consistent the forecast, the more potentially informative it is and the more accountable we can be. So it might be worthwhile at least to explore whether there are some aspects of commonality that wouldn't cause inconsistencies of models or other problems. I'm not sure that we could get there, but I think it is worthwhile to spend some time on that. Part of the motivation for doing so is that we already put out a central tendency forecast a couple of times a year. Although the market respondents to that survey had said they want more of this, when I talk to reporters or to market participants, they don't really seem to pay much attention to it, or it seems to decay very, very quickly. They may pay attention for a very short time, and that's why it might be worthwhile to see whether something a bit more consistent could be given out about it. Right now, except for a very small window around the two times a year that we put it out, I don't see much emphasis on it.

It's valuable to have a more-rapid release of information. However, the last thing I would want is to feel that we have to get it out faster and to have that feeling impeding our

decisionmaking process—either needing to put out the Greenbook earlier or constraining our discussions because we had already put a line in the sand. I think it's 4.2, and you think it's 3.2; my memo is out there, and my memo is better than your memo [laughter]—I think that would be a mistake. Also, particularly since we are thinking of frequency, if we release information three to four times a year, it is going to get stale. But trying to get it out a week sooner so that it's out there for three months and a week or four months and a week, rather than four months and two weeks or three months and two weeks, isn't that helpful. I don't want to undermine the excellent decisionmaking process that we have. So speed is valuable, but there is a cost to it, and I don't see the enormous benefit of getting it out a week or two sooner. As I said, three to four times a year seems reasonable.

I like the evolutionary approach of providing some narrative, because I think that's one of the key things in providing more transparency—it gives us greater ability to convey to the world how we're thinking about things. It also helps us because we would not be as constrained with the very few words that we put out as a Committee. It would be nice, in principle, to be able to use more words to convey our ideas rather than be so constrained. If we do put the information out as a separate document, I think that it will get much more attention. That may be valuable, but it also will get different reactions. Right now, it goes out as part of testimony that the Chairman gives. I could certainly see requests for more-frequent testimony if we start putting the information out more frequently. We have to think about that kind of feedback dynamic. When we report more information, what other demands might come? I'm not sure that would be the case, but I think the form and frequency with which we put it out may induce that kind of response.

With respect to the forecast horizon, I think the key will be whether we are more explicit on some sort of target or goal, and then horizon should be related to that. I don't want it to go too far out. At the Council of Economic Advisers, I chaired the so-called troika process, in which we would do the Administration forecast. Initially we had to do ten-year forecasts. What information do we have today that will tell us anything about ten years down the line? We would always revert to the mean, and we would do that over a five-year period. Basically, we didn't feel that we really had any more information after two to three years. So I would be reluctant to push the horizon beyond two to three years unless we wanted to tell people about what we sort of thought trend rate was. That could be valuable but only to tell people about trend, not to say that we really have any insight into what's going to happen four to five years from now. Generally our tendency will be to bring things back to trend. In terms of what to talk about, real GDP, unemployment, and some measure of core inflation make a lot of sense. I'd be very reluctant, certainly early on, to talk about interest rates or interest rate assumptions.

Uncertainty is another thing. When we were working on the forecasts at the CEA, one of the things that I and others had pushed for was trying to give some sense of the uncertainty when we were making these forecasts. We actually got far enough to have some of our people talk with people on Capitol Hill, and we had very strong negative pushback. They were saying, "Well, if you're not willing to stand by your number—we have asked you to make a forecast, and you're not standing by it if you're giving us this range." Also, people will pick out the high end or the low end of the range for their particular purposes, and so you have to be very careful about how you put that out. In principle, I really want to provide the uncertainty; I agree completely with Governor Mishkin on that. But the form in which you provide it is very important because we may think of it as uncertainty but others may think of it as either dodging

an obligation or making a particular commitment on the high side or the low side—this is as high as you can go and this is as low as you can go—and see it as a bargaining type of thing. Being an academic, I had never thought about it that way. But it is something that we should consider in making sure that providing it is improving transparency and the effectiveness of monetary policy. We don't want to get into side debates about exact numbers—that would be exactly the opposite of what we want to convey about uncertainty. Thank you.

CHAIRMAN BERNANKE. Thank you. Vice Chairman Geithner.

VICE CHAIRMAN GEITHNER. Thank you, Mr. Chairman. I want to say just a few things quickly about internal transparency, about the analytical framework that we use to make decisions about monetary policy, and then about the external dimension of the forecast process.

First, on internal transparency, I think that it makes sense for us to be a little more explicit with each other about assumptions underpinning the forecast that we bring to the table. That's why I circulated the note—just to lay it out there in a clear way. Without that information, it is very hard for us to know, when we are debating what to do, what we are really debating. Generally, being more explicit with each other in private—discreetly—about the conditioning assumptions that are important to our forecasts, about what we mean by "appropriate policy," about why and where we differ from the Greenbook, how we see the balance of risks, and maybe, if we can, at least a qualitative sense of uncertainty would be useful and would enrich the conversation.

On the analytical framework for monetary policy, I just have two suggestions, one I'm going to repeat from our last conversation. The first is that I think we need to broaden the set of analytical tools the staff gives us now at each meeting to think about the consequences of alternative views in the forecast of different monetary policy choices and so forth. You give us a

range of things now that are very helpful. The two things we don't get now fall in the following categories. One is that you don't give us a simple way to look at what it might mean for an inflation forecast and an optimal policy exercise if you have a very different view about structural inertia in inflation—not that there's any great way to do that now, given the state of the art—but it would be nice to have a way we could distinguish a little more clearly what a backward-looking, highly inertial view about inflation fundamentals means for the way we think about the forecast and monetary policy and what a more forward-looking view of inflation determination means. That's one area in which having something broader would be helpful, even if it's a set of highly simplified, highly imperfect analytical prisms, reference frameworks, or reference models. The other thing that we don't get now is a way to think through how we make more explicit choices about the appropriate period, for example, for bringing inflation down to a more comfortable level. That's, of course, an important way to tease out what people's different loss functions or reaction functions are. Right now we aren't really presented with, for example, a set of alternative horizons for bringing inflation back down to target and what that would mean for the rest of the things that are important to us. Those are two areas in which it would be helpful to have a broader set of reference frameworks to underpin our conversation of monetary policy. That's an important investment to make if we're going to do anything to change our current regime—whether in the direction of an explicit quantitative objective for the definition of price stability over the long run, even with no horizon, and certainly if we're going to evolve in how we publicly describe our forecast.

My second suggestion echoes a suggestion that Randy Kroszner made before. I think that we would benefit from spending a bit more time as a Committee on thinking through what we understand about inflation, both how it is captured in the model the staff uses and what are

the important distinctions between our views on these questions. We don't go very deeply into those distinctions—just a little. You can see this in both President Plosser's and President Lacker's descriptions of their views of the forecast because they have a lower inflation forecast than the staff has without a very different view about unemployment and with a modestly tighter monetary policy. The case for that view deserves some reflection, and we don't spend a lot of time talking through that. That's an important investment to make if we're going to be more explicit in public about choices concerning, for example, how fast we want to bring inflation down to our objective.

Two small things on that ground would be helpful when the staff comes back to prepare for the discussion in March about inflation objectives. First, a short treatment about the issue of what makes the United States different would be interesting. We have a lot of international experience to look at, but we're not Norway, and we're not New Zealand. I don't know how to think through that interesting issue. I'm not sure it's right, but I don't think we can dismiss it out of hand, and I'd like some help thinking it through. Another small thing, to elaborate on a discussion that Janet, Don, and I had on the margins: If you could tell us a bit about what the past forecast error is of the mean FOMC forecast and how that compares to the Greenbook forecast error, that information would be interesting to have. It's a small thing.

CHAIRMAN BERNANKE. There is research on that by the St. Louis Bank.

VICE CHAIRMAN GEITHNER. Good. And about forecast error?

CHAIRMAN BERNANKE. Yes.

VICE CHAIRMAN GEITHNER. Finally, I have just a few quick points about the external dimension of the discussion. I'm in favor of exploring a narrative that describes the story of the Committee's central tendency about the outlook. It's worth doing, and the range of

issues on the table today in that direction I feel really quite comfortable with. I'm in favor of doing it quarterly, but I wouldn't want to make that decision without thinking through very carefully whether it makes sense. I would want to explore different ways of expressing the variance across the Committee. I like the histogram approach. I'd even be open to the fan chart device, as Janet described it, for trying to capture different forms of uncertainty. I don't think we should try to agree as a Committee on a path for what appropriate policy means. Therefore, I would not be in favor of working toward disclosing an agreed-upon path, for many of the reasons that are familiar to all of us. I want to experiment with a minutes-like iterative process for coming to some level of comfort with how that central tendency is described, but I'd be willing to give the Chairman the role of final arbiter of what gets presented, to save the staff from endless negotiation.

I think the horizon question is very interesting. I was inclined to think that three years makes sense. A concern I have about three years—apart from the one that Janet raised, which is that it probably tells you only a little about your view of potential or your objective, and it may not have much information beyond that—is the following. If we're thinking about the merits of a regime in which we will not have a defined period that we commit to for bringing inflation back to target, we need to be comfortable with showing a forecast that maybe has inflation above target for possibly a significant period of time. If the period is two years, it will be easier not to get ourselves in a position in which we feel compelled to show a more acute decline in that path. If we're at three years, it will be harder to avoid that. We will be uncomfortable, I think, if we're in a three-year regime going for sustained periods with inflation staying outside that range. Therefore, I am a bit tentative about three years.

Whatever we do, we should experiment first. We should be careful not do any damage to a staff forecasting process that has worked very, very well and serves the Committee very, very well. Also, we should recognize the ignorance we all live with and should be careful not to start down a road that would give the markets false comfort, a false sense of precision, false confidence in our view of the world, and all those other things many people have spoken about.

Let me say something about skepticism. Skepticism is a very important virtue, but its virtue is not in the service of inertia. Its virtue is in the service of trying to figure out how we can improve what we do and how to save ourselves from mistakes along the way. So I don't want to be "outskepticked" by anybody. [Laughter] I think it's important to think about it that way.

As all this implies, I don't think it makes sense to have uniform conditioning assumptions imposed on our individual forecasts, certainly not uniform conditioning assumptions on the monetary policy path, but also not on any of the important dimensions that are the focus.

CHAIRMAN BERNANKE. Thank you. President Poole.

MR. POOLE. May I raise a very quick question? From time to time, the politics of budget deficits get all tangled up with differences between CBO and OMB forecasts of the economy. Do we know whether Fed forecasts have ever been dragged into that argument?

CHAIRMAN BERNANKE. Not to my knowledge.

MR. POOLE. I think that the longer the forecast period and the more that it is a Committee forecast, the more likely it is that the FOMC may get pulled into that argument—whether we're on this side or that side of the argument. I just raise the question because we ought to be sure we're clear about that before we make our own forecast period too specific and too long.

CHAIRMAN BERNANKE. First, let me thank both the staff and all members. People clearly took this assignment very seriously, and it has been extremely useful. I won't try to summarize. [Laughter] Fortunately, we have a tape recorder. I would like to make a few brief comments. I believe that we ought to increase our emphasis on the projections. I'll talk a bit about some of the parameters of that, but I believe that I owe an answer to President Fisher about why. I don't think the process is broken. I don't think we have a serious problem. But I do think we could do better. Specifically, to give some examples, I think, first, that our statement is too influential in the sense that we argued today about a couple of phrases, a couple of words, knowing that the markets would seize on them and that they would move markets. If we had more-informative, more-complete descriptions of our views, the statement would become less of an issue. Second, I don't want Governor Kohn moving the markets. [Laughter] I think that public comments are often overinterpreted. I know in my own case they have been. [Laughter] I recall the case in which a letter to a senator included the phrase "well-contained inflation expectations" rather than "contained inflation expectations." That was a letter drafted by the staff, and I perhaps didn't read it carefully enough. It was the subject of commentary in the markets for some weeks after that. We have a bit of space in which to improve our communication with the markets and the public. This way to do it would be fundamentally incremental. I'm not proposing, and I don't think that anyone is proposing, a radical change. We can build on something that has worked and that we understand how to do, and of course we would approach it very cautiously. But I do think that this is, as President Yellen called it, low-hanging fruit in the sense that it's something we could use to increase our communication and transparency in a fairly low risk way. Last spring there was a good bit of confusion in the markets about how quickly we wanted to bring inflation down. The forecasts essentially

addressed that issue because they implicitly incorporate our policy preferences. So I think we could improve our communication by increasing information about our outlook and our policy preferences.

Another issue is a bit hard to explain, but I will try. I think that our credibility is enhanced if we can depersonalize it and make the ownership of our policy more the Committee's and the institution's. It's the credibility of the Federal Reserve that matters, not Ben Bernanke's credibility. I assure you that we are better off with the Federal Reserve's credibility. Making the credibility of policy part of a broader process, with more input and clearer Committee analysis, does to some extent increase the sense in which the institution, rather than the Chairman or any other individual, is responsible for the outcomes and the policies.

Having said all of that, I don't advocate any radical changes. I think we ought to consider three or four additional projections depending on the schedule and other factors. Governor Bies mentioned fine-tuning. Perhaps the way I would look at it is that information that we have about the outlook changes over time, and six months is a long time. Our views do change within a period of three to four months, and I think it would be informative to let people know that. I'm open, but I think we should have individual forecasts. The solution to the problem of consistent assumptions is the one that President Lacker mentioned—to have people make their unconditional forecast the same way a Blue Chip forecaster would do. That essentially includes the forecast of what the Committee is going to do, which is not necessarily the same for everyone but it is based on each person's view about where they think the economy and policy are going. That's one approach. There are probably others, but I want to suggest that as a possible solution.

Many people have supported the narrative description. I think that's important. I think being more timely would be useful. I don't quite follow the idea of putting the narrative in the minutes. If we actually have this information, say, a week after the meeting, why would we want to wait until three weeks? It is more credible and more useful the sooner it comes out. The same is true for the minutes. When the minutes were released after the following meeting, it was a non-event. When they were brought out earlier, they became viewed as a very informative, useful piece of information. So, like Governor Kroszner, I don't think we should deform our decisionmaking process or be overhasty, but if we can make such communication more timely than the minutes, we should probably try to do that.

I agree with the many people who said that we should include some sense of uncertainty. There are ways to do that, for example, including historical numbers on the forecast errors of previous projections of the Greenbook, of the Blue Chip, or of somebody would give the public some sense of what the historical record is and perhaps lead them not to overvalue the individual forecasts. Again, I don't think this is particularly risky.

As I said, I hope we'll approach this incrementally. Indeed, the history of the Federal Reserve since 1994, when we first began to announce the federal funds rate target, has been one of incremental change. This is a little unfair, but, President Fisher, you should go back and read the discussion in the FOMC before the decision to begin releasing the federal funds rate target. There was a lot of catastrophizing about what was going to happen and why what we're doing now is the best possible approach, and so on. So I think this is really no more than a continuation of twelve or thirteen years of progress in terms of information. The other reason that this is not particularly risky, if it's done carefully and slowly, is that we have a great deal of international experience. Obviously, we're not Norway, but we've seen what works across a

whole variety of central banks, and financial markets have become more accustomed to this kind of information being released.

There are some important governance issues. Whether we have an approval process or a consultative process, I think we could get a forecast, together with some description, within a reasonable period—something on the order of a week or less after the meeting. Let me make just a suggestion along those lines. If we were to tie projections to two-day meetings and if we were to have, as we do now, projections submitted before the meeting, along with perhaps a paragraph of description about the major elements of the forecast and the major risks, I think the staff and I could present on the second day a draft of what we took both from the first day's discussion and from the submissions of the projections. At that point, we could get feedback, or there would be opportunities for people to change their forecasts or their views based on the discussions at the meeting. We'd have to allow for diversity and dissent, and I think that's perfectly fine. We've done that in many contexts, and I think we should continue to do that. I would just conclude by saying that many people have mentioned the importance of dry runs and a slow and careful process, and I think it would be very hard to disagree with that. We've done that in other cases, and I think we should do that here.

So, to summarize, I think there is some basis for trying to increase our use of the projections. It would be consistent with our previous incremental movements toward greater transparency. It would provide more information and reduce the sensitivity of the markets to other types of communication, such as the statements and public comments. But we have heard an awful lot of interesting viewpoints today, and I don't envy the subcommittee, which will have to go through all of this and come up with a set of proposals. Are there any further comments? President Minehan.

MS. MINEHAN. I know you don't want to prolong this meeting, and I don't either, but I'm interested in what you think it feels like to all of us and to the market to have a two-day meeting, to have a minutes-style summary of a range of forecasts come out, and then a week and a half to two weeks later have the minutes come out. How does that work? What is the incremental information that comes from those two things, since the minutes already have a range of information in them that, narratively anyway, goes through a forecast and people's sense of where things are likely to go with regard to the forecast, which I presume would be what you would put into a narrative around the range of forecasts. It is certainly possible to do, but how does that work?

CHAIRMAN BERNANKE. I think it's more informative to combine numerical estimates with a qualitative description.

MS. MINEHAN. Then a week and a half later have another qualitative description.

CHAIRMAN BERNANKE. Well, that's not a reason not to do this. I think that you could reproduce the information in the minutes; there would be further amplification and discussion in the minutes. I am just thinking out loud here. The description I have in mind would be a page or two, nothing substantial. The minutes would be an opportunity to provide more information and show more of the diversity of views.

VICE CHAIRMAN GEITHNER. As President Hoenig's suggestion, President Moskow's suggestion, and your suggestion implied, there is a range of variance around that, and that's one of the things we'll have to work through as well as how this fits within a set of existing processes and disclosures that we're going to preserve.

CHAIRMAN BERNANKE. There's also a question of how it relates to the statement. That's absolutely right. Are there other comments? President Fisher.

MR. FISHER. Mr. Chairman, I thank you, and my mother thanks you, for addressing the skepticism issue. May I just add one other thing? You were very polite at the beginning of this conversation, but I'd like to reinforce what I interpret you as having said. The article from the *New York Times* a couple of days ago really bothered me. Since we're talking about proceeding slowly and deliberately and several people have used the term "dry run"—which is very, very important and I fully endorse—I hope that no one forms or advances the discussion by having a public revelation of what took place at this table. May I suggest, since you constantly see certain people who are not on this Committee referred to, that we be very careful in what we share with those people because they are reference points. Some of them are friends of many people at this table, but it appears to me that this does nothing but truncate the discussion or risks doing so and has outsiders raising questions that we really don't want to answer right now. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. The next meeting will be a two-day meeting, March 20 and 21. Oh, David Stockton.

MR. STOCKTON. We'd like to get updates to forecasts by Friday.

CHAIRMAN BERNANKE. Okay—updates of forecasts are to be sent in by Friday. Thank you very much. The meeting is adjourned.

END OF MEETING