

**Meeting of the Federal Open Market Committee on  
February 1-2, 2005**

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., at 1:30 p.m. on Tuesday, February 1, 2005, and continued at 9:00 a.m. on Wednesday, February 2, 2005. Those present were the following:

Mr. Greenspan, Chairman  
Mr. Geithner, Vice Chairman  
Mr. Bernanke  
Ms. Bies  
Mr. Ferguson  
Mr. Gramlich  
Mr. Kohn  
Mr. Moskow  
Mr. Olson  
Mr. Santomero  
Mr. Stern

Messrs. Guynn, Lacker, Mses. Pianalto and Yellen, Alternate Members of the Federal Open Market Committee

Mr. Hoenig, Ms. Minehan, and Mr. Poole, Presidents of the Federal Reserve Banks of Kansas City, Boston, and St. Louis, respectively

Ms. Holcomb, First Vice President, Federal Reserve Bank of Dallas

Mr. Reinhart, Secretary and Economist  
Ms. Danker, Deputy Secretary  
Ms. Smith, Assistant Secretary  
Mr. Alvarez, General Counsel  
Mr. Baxter,<sup>1</sup> Deputy General Counsel  
Ms. Johnson, Economist  
Mr. Stockton, Economist

Messrs. Connors, Evans, Howard, Madigan, Oliner, Rolnick, Tracy, and Wilcox, Associate Economists

Mr. Kos, Manager, System Open Market Account

Mr. Ettin, Deputy Director, Division of Research and Statistics, Board of Governors

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

Messrs. Slifman and Struckmeyer, Associate Directors, Division of Research and Statistics, Board of Governors

Messrs. Clouse, Reifschneider,<sup>2</sup> and Whitesell, Deputy Associate Directors, Divisions of Monetary Affairs, Research and Statistics, and Monetary Affairs, respectively, Board of Governors

Messrs. Elmendorf,<sup>2</sup> English, Faust,<sup>2</sup> and Leahy,<sup>2</sup> Assistant Directors, Divisions of Research and Statistics, Monetary Affairs, International Finance, and International Finance, respectively, Board of Governors

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

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

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

Messrs. Bassett, Lebow,<sup>3</sup> Ms. Lindner,<sup>2</sup> Messrs. Rudd,<sup>2</sup> Tetlow,<sup>2</sup> and Wood,<sup>3</sup> Senior Economists, Divisions of Monetary Affairs, Research and Statistics, Research and Statistics, Research and Statistics, Research and Statistics, and International Finance, respectively, Board of Governors

Mr. Durham,<sup>3</sup> Economist, Division of Monetary Affairs, Board of Governors

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

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

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

Mr. Judd, Executive Vice President, Federal Reserve Bank of San Francisco

Messrs. Eisenbeis, Fuhrer, Goodfriend, Hakkio, and Rasche, Senior Vice Presidents, Federal Reserve Banks of Atlanta, Boston, Richmond, Kansas City, and St. Louis, respectively

Messrs. Altig, Dotsey, Ms. Hargraves, and Mr. Wynne, Vice Presidents, Federal Reserve Banks of Cleveland, Philadelphia, New York, and Dallas, respectively

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<sup>2</sup> Attended portion of meeting relating to special topic of a numerical definition of the price-stability objective for monetary policy.

<sup>3</sup> Attended portion of meeting related to the economic outlook.

**Transcript of Federal Open Market Committee Meeting on  
February 1-2, 2005**

**February 1—Afternoon Session**

CHAIRMAN GREENSPAN. Today is our regular annual organizational meeting and, as is customary, I will turn the floor over to Governor Ferguson.

MR. FERGUSON. Thank you very much, Mr. Chairman. At the first regularly scheduled Committee meeting of every year, our first obligation is to elect a Chairman and a Vice Chairman to serve until the election of their successors at the first regularly scheduled meeting of the next year. So let me now open the floor for nominations from among our members for Chairman and Vice Chairman.

MR. GRAMLICH. I nominate Alan Greenspan to be Chairman.

MR. FERGUSON. And do you have a nomination for Vice Chairman?

MR. GRAMLICH. I nominate Timothy Geithner as Vice Chairman.

MR. FERGUSON. Is there a second to those nominations?

SEVERAL. Second.

MR. FERGUSON. Any other nominations? Any objections? Any comments? Well, we're not in an era of great democracy. [Laughter] Let the record show a unanimous vote for Messrs. Greenspan and Geithner to be Chairman and Vice Chairman of the FOMC until its first regularly scheduled meeting of 2006. Congratulations.

CHAIRMAN GREENSPAN. Thank you very much. I wish to note that there was no voter fraud that I could perceive. [Laughter]

MR. FERGUSON. And we have a turnout of 100 percent!

CHAIRMAN GREENSPAN. The next item on the agenda is the selection of staff officers. Would you kindly read the list for us, please?

MS. DANKER. Yes.

For Secretary and Economist, Vincent Reinhart;  
Deputy Secretary, Deborah Danker;  
Assistant Secretary, Michelle Smith;  
General Counsel, Scott Alvarez;  
Deputy General Counsel, Thomas Baxter;  
Economists, Karen Johnson and David Stockton;  
Associate Economists, Thomas Connors, David Howard, Brian Madigan, Steven Oliner, David Wilcox, Charles Evans, Loretta Mester, Arthur Rolnick, Harvey Rosenblum, and Joseph Tracy.

CHAIRMAN GREENSPAN. I'll entertain a motion for the proposed slate.

SEVERAL. So moved.

CHAIRMAN GREENSPAN. Without objection, that is approved. The next item on the agenda is the selection of a Federal Reserve Bank to execute transactions for the System Open Market Account. My notes indicate to me, and I quote, "New York is the odds-on favorite." [Laughter] In that event, not wishing to go against the odds, I will entertain any motion which is restricted to nominating the Federal Reserve Bank of New York!

MR. FERGUSON. Well, consistent with the odds and tradition, I will nominate the Federal Reserve Bank of New York.

CHAIRMAN GREENSPAN. The nomination is approved without objection. Since we have done that, let's move to a decision that may be far more important, which is to select the Manager of the System Open Market Account. I understand that there's only one name on this ballot, and it's Dino Kos. Unless anyone has an objection, I will presume that there was a nomination, a second, and a unanimous vote in the affirmative. Hearing no objection to that, I presume that that selection is now approved.

Now I'd like to call on Dino in his renewed official position.

MR. KOS. Thank you, Mr. Chairman. I have two subjects on which I'll need a vote from the Committee. The first one is on the Foreign Currency Directive, the Authorization for Foreign Currency Operations, and the Procedural Instructions with Respect to Foreign Currency Operations. I recommend that they be approved with no amendments.

CHAIRMAN GREENSPAN. Questions? Objections? If not, they are approved.

MR. KOS. The second item is the Authorization for Domestic Open Market Operations, which I propose be approved with one amendment as described in the memo dated January 24, 2005. That amendment would eliminate the so-called leeway provisions—the limit on the amount by which holdings of securities in the System Open Market Account can change between meetings—given that the Committee has many other ways to oversee the activities of SOMA [System Open Market Account].

CHAIRMAN GREENSPAN. Any questions? Approved without objection.

We have received documents on proposed revisions to the Committee's rules, statements, and resolutions, and I presume you have read them. I need a vote to approve the proposed revisions, but, obviously, if there are comments, we will discuss them prior to that. Hearing none, they are approved without objection.

Incidentally, because of the timing, we need to determine officially as a Committee that public notice and comment on these amendments would be unnecessary or contrary to the public interest. I would accept a motion to that effect.

SPEAKER(?). So moved.

CHAIRMAN GREENSPAN. Approved without objection.

We have an annual review of the Committee's Program for the Security of FOMC Information. I'd like to emphasize a point covered on page 1, which is that individuals who have access to confidential information may provide it to or discuss it only with those Federal Reserve employees who are authorized to have access to such information.

I raise these issues every year. We all vote upon these rules and agree to bind ourselves to them, and invariably we slip periodically. I trust that at some point we'll do better than we have done, especially fairly recently. I understand that President Moskow would like to say a few words on this.

MR. MOSKOW. Mr. Chairman, I think the leak of the topic for today's discussion, which was the subject of an article that appeared in *The Wall Street Journal*, was very disappointing and

troubling. I've been with the Federal Reserve for 10 years, and we pride ourselves on being an organization with very high integrity. When we have a leak like that, I think it's really an embarrassment to the Federal Reserve and to each of us individually. Leaks such as this have happened on rare occasions in the period that I've been here. But I think it is important that we emphasize every year, in line with the integrity of this organization, how crucial it is to maintain the confidentiality of what we discuss.

CHAIRMAN GREENSPAN. I'm at a loss to understand the motives of communicating obviously confidential information that could compromise the nature of our deliberations here. What is to be gained? I don't get it. All I can do is to reiterate, as we vote on this, that we take it very seriously. I will assume everyone is in the affirmative on this.

We will now move on to a rather large topic, price objectives for monetary policy. I'd like to call on David Wilcox, Doug Elmendorf, and Vincent Reinhart to make their presentations.

MR. WILCOX.<sup>1</sup> Thank you, Mr. Chairman. We'll be referring to the package of material entitled "Considerations Pertaining to the Establishment of a Specific, Numerical, Price-Related Objective for Monetary Policy."

As a prelude to your discussion this afternoon, Doug Elmendorf and I will briefly summarize some of the main points made in the R&S [Research and Statistics] staff paper that was distributed to the Committee. Then Vincent will address the issues related to communications and governance that would arise were you to define a numerical objective.

As can be seen in the top panel of your first exhibit, inflation as measured by any of the major indexes has been both low and stable by historical standards for the last several years. With the economy now operating in the neighborhood of price stability, some analysts have pressed for more clarity and precision about your ultimate objectives with respect to the price-related piece of your dual mandate. Others, however, have expressed serious reservations about moving away from what they perceive to be a successful status quo. The background paper discusses the major issues the Committee would need to consider in determining whether to adopt a specific, numerical, price-related objective.

We view the key characteristics of such an objective, listed in the middle panel, as the following: First, it would be numerical rather than qualitative. Second,

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<sup>1</sup> The materials used by Messrs. Wilcox, Elmendorf, and Reinhart are appended to this transcript (appendix 1).

it would be stated in terms of a particular published index. And third, it would involve a commitment to either inflation control or price-level control. To give meaning to such an objective, the Committee would presumably aim to achieve it on average over some extended period of time.

As noted in the lower panel, a premise of the paper is that a price objective should be chosen to minimize the costs of deviations from price stability. If you share that premise, then you might conclude, as we did, that the objective should be defined with respect to the price index most closely related to such costs. Such an index need not be the best short-run indicator of underlying price trends. For example, an overall price index might be a better gauge of the costs incurred as a result of deviations from price stability—and therefore a better point of reference for a medium-term price objective—even though a core index might be a better real-time indicator of underlying inflation. One counterargument to this view is that a smoother measure of inflation would breach a band of any given width less frequently and so would present the Committee with fewer communications challenges. This is true enough; we would simply note that the width of any band would be a choice available to the Committee.

In the paper, we underscored that we see the question of whether the Committee should adopt a specific, numerical, price-related objective as distinct from the question of whether it should adopt an inflation targeting regime. However, even the more limited step of establishing an explicit price objective presumably would involve important changes in the Federal Reserve's relationships with the public and the Congress—issues that will be addressed by Vincent in his remarks.

Your second exhibit summarizes some of the potential benefits and costs of adopting a specific, numerical price objective. On the benefits side, advocates believe that publicly announcing such an explicit price goal could help preserve the present commitment to price stability by raising an impediment to backsliding on the part of some future FOMC.

Second, announcing an explicit price objective could better anchor long-run inflation expectations. In turn, better-anchored expectations about *future* inflation might reduce the volatility of current inflation through its effect on price-setting and might reduce the volatility of real activity by giving the Federal Reserve greater scope to offset shocks.

Third, a specific objective could improve public understanding of monetary policy, as the Committee took yet another step to increase the transparency of the policy process. And lastly, agreeing on an explicit price objective could help focus policy debates within the FOMC by ensuring that everyone is aiming to accomplish a common objective.

All that said, skeptics of a specific, numerical price objective argue that the burden of proof should be on those who would disturb the status quo, and they see several sources of potential harm. For one thing, if the Committee meant to preserve the current balance of emphasis between price stabilization and activity stabilization, then adopting an explicit objective for prices—but not for unemployment or output—might mislead the public into believing that your emphasis had shifted toward the price objective. Second, pursuing such a course could, in fact, cause the Committee inadvertently to place more emphasis on the price objective.

A third potential cost could arise if your credibility were seen to be diminished when inflation differed from the stated objective. Finally, a commitment to an explicit price objective could constrain future actions of the FOMC in an unhelpful manner. For example, the Committee might feel inhibited in responding as aggressively as it would like to a financial crisis if inflation were already to the high side of the Committee's objective.

Unfortunately, empirical evidence on these potential costs and benefits is quite limited, as summarized in the bottom panel. Little to no evidence exists regarding the likely influence of a specific price objective on FOMC decisionmaking or the quality of communications with the public.

Evidence is also limited on whether an explicit price objective would improve macroeconomic performance. As documented in the background paper from the Division of International Finance and noted in the second bullet, there are some hints from the foreign experience that specific price objectives have helped anchor long-term inflation expectations. However, survey-based expectations measures have been quite stable in the United States of late, so expectational gains from adopting a specific price objective are not guaranteed and probably would be modest if they did occur. Moreover, the foreign experience does not speak clearly as to whether better-anchored expectations have yielded better macroeconomic performance.

A key question on the empirical front is whether an explicit price objective would change the way that private agents form their expectations. Insight into this question might be gained by investigating whether the profound change in the conduct of monetary policy over time in the United States has induced changes in the formation of inflation expectations. Unfortunately, the evidence on this point is disputed, as noted in the third bullet: Some analysts attribute the reduced volatility of inflation and real output in recent decades to the changes in monetary policy, but other analysts point to different factors.

Faced with such limited empirical evidence, some researchers have turned to model simulations for help in gauging the possible consequences of changes in monetary policy. Simulations of the FRB/US model, among others, indicate that better-anchored inflation expectations would reduce the volatility of inflation and

real output. However, this result is admittedly sensitive to the assumptions underlying the specification of these models.

In summary, then, we concur with our colleagues in the International Finance Division in reading the evidence as suggesting that adoption of a numerical price objective probably would not yield either large benefits or large costs, relative to the conduct of monetary policy in recent years. Unfortunately, we also see that evidence as incapable of resolving the question of whether such a step would generate net benefits or costs on a more modest scale. That leaves us believing that the most relevant and important issues for the Committee to discuss may be ones that only you can adequately assess: On the plus side, the extent to which an explicit objective may aid your internal dynamics by ensuring that everyone is pulling toward a common objective and may facilitate your communication with financial markets, and, on the minus side, the extent to which such an objective may skew the priorities you assign to the two legs of your mandate.

MR. ELMENDORF. If the Committee chose to specify a numerical price-related objective, it would need to resolve a number of operational issues—the subject of your next exhibit. The top left panel of the exhibit presents a checklist of these issues. The first item is the choice of a price index. We favor consumer prices on several grounds shown in the top right panel. On the practical front, indexes of consumer prices are probably the most familiar to the public and the best measured. From a theoretical perspective, the costs of inflation relate to many different sorts of prices. But because inflation rates generally move together in the long run, anchoring some measure of consumer price inflation would, for the most part, pin down other broad measures of inflation as well.

The second item on the checklist is the choice between inflation control, where “bygones are bygones” with respect to inflation surprises, and price-level control, where such surprises are eventually offset. I will not review the pros and cons of these approaches here, but simply repeat our conclusion in the paper that, if the Committee were to go down this road, an inflation-based strategy probably makes the most sense at this point.

The chief factors bearing on the third decision on the checklist—the average inflation rate—are highlighted in the middle panel. One consideration is measurement bias: The Board’s staff estimates that the CPI overstates changes in the cost of living nearly 1 percentage point per year and that the change in PCE [personal consumption expenditures] prices is biased upward about ½ percentage point per year. In framing your objective in terms of a published index, you will want to take this bias into account. Turning to true inflation, the rationales for aiming for *zero* are simply the traditional costs of inflation, including money illusion, relative-price confusion, and imperfect indexation of the tax code. The chief rationales for *positive* true inflation are downward nominal wage rigidity and the zero lower bound on nominal interest rates.

Analyses of microeconomic wage data suggest that individuals have a special distaste for nominal wage cuts, raising the possibility that lower inflation could lead to a higher equilibrium rate of unemployment. Yet, such downward rigidity has left little imprint on macroeconomic outcomes, at least so far, as low inflation over the past 15 years has not been associated with elevated unemployment. However, this phenomenon might matter more in the future if productivity growth slows or inflation moves even lower, because either of those developments would push a larger share of equilibrium nominal wage changes below zero.

Another cost of very low inflation is that the equilibrium nominal interest rate could decline to a level that would limit the Committee's scope for cutting rates. The table in the bottom panel presents illustrative estimates of the effect of the zero bound based on stochastic simulations of the FRB/US model. For these estimates, we assume that monetary policy follows an updated Taylor rule with a larger coefficient on the output gap that better matches the responsiveness of the funds rate to output movements since the late 1980s.

If, as shown in the rightmost column, the bias-adjusted inflation objective is 2 percent, the funds rate equals zero just 6 percent of the time, and the standard deviation of the output gap is 2.2 percentage points. As the inflation objective falls, the funds rate is constrained at zero an increasing percentage of the time, causing economic performance to deteriorate at an increasing rate. For example, with a bias-adjusted objective of zero—in the left column—the funds rate is pinned at zero 16 percent of the time, and the standard deviation of the output gap rises to 2.5 percentage points. To be sure, there are alternative ways to implement monetary policy if the funds rate becomes stuck at zero. But these alternatives are much less familiar than traditional policy actions and therefore less predictable in their effects.

To sum up our analysis of the optimal long-run inflation rate, we read the admittedly scant evidence as suggesting that a cushion of 1 percentage point on true inflation would provide sufficient insurance against the costs associated with the zero lower bound and downward nominal wage rigidity without imposing a high cost through the other effects of inflation. However, the results from the literature are not so precise as to rule out other figures in the neighborhood of 1 percent as representing a sensible balance between these competing considerations.

The last item on the checklist is the choice between a point objective and a range. One virtue of a point objective would be its simplicity; there could be little confusion about where the Committee preferred the inflation rate ultimately to be heading. On the other hand, the Committee might prefer a range for several reasons: to communicate the variability of inflation, to allow for uncertainty about the appropriate numerical value, to encompass divergent views among Committee members, or to express a "zone of indifference" about the inflation rate. As we note in the paper, the economic consequences of announcing a range rather than a point

objective would depend on why the Committee chose a range and how it explained that range to the public.

Your fourth exhibit considers the accuracy with which the FOMC could achieve an inflation objective. Because inflation is volatile and because monetary policy influences it only indirectly and with a lag, the Committee could not hit a point objective precisely or guarantee to keep inflation within a narrow range. To assess the likely accuracy with which inflation could be controlled, we use stochastic simulations of the FRB/US model.

The table in the middle panel shows results for a variety of alternative assumptions. The first row uses the shocks that are estimated to have occurred between 1968 and 2004. Under these conditions, total PCE inflation averaged over four quarters could be held within plus or minus 1 percentage point of the desired rate 59 percent of the time, and core PCE inflation could be held in the same interval 64 percent of the time. If the volatility of economic shocks were lower—in line with the 1984 to 2004 experience—the Committee would be able to control inflation somewhat more precisely, as shown in the second row. Indeed, total PCE inflation on a four-quarter basis has been within 1 percentage point of its average level almost 70 percent of the time since the mid-1980s and nearly all of the time since the mid-1990s.

A key uncertainty about the inflation process, and thus an important risk to these figures, is the nature of expectations formation. The first two rows of the table assume that expectations follow a simple vector autoregression [VAR] in which the public's long-run forecast of inflation responds gradually to actual inflation and is not influenced by FOMC announcements. Row 3 just repeats the results from row 2, with the label emphasizing that expectations are VAR-based with imperfect credibility surrounding any announcement of a long-run inflation objective. In row 4, we continue to assume that near-term expectations are formed using a VAR, but we assume that long-term expectations are perfectly pinned down by the FOMC's announced objective. In this case, four-quarter total PCE inflation stays within a 1 percentage point band 80 percent of the time.

The Committee could tighten its control of inflation, relative to the results discussed so far, by responding more aggressively to movements in inflation and output. However, as shown in the paper, this effect is fairly small. All told, as noted in the bottom panel, the Committee could likely keep four-quarter total PCE inflation within a plus or minus 1 percentage point band about two-thirds to three-quarters of the time.

MR. REINHART. The Committee's discussion of the relative merits of an explicit quantification of its price objective is likely to be complicated by consideration of how to govern the process of choosing an objective and how to communicate it to the public and the Congress. I believe that the decision tree

provided in exhibit 5 can help to shape this discussion, however unlikely that may seem to you at the outset.

The key question before you is listed in the box in the top row: Would an explicit, numerical specification of price stability be helpful in furthering the achievement of your goals of maximum employment, price stability, and moderate long-term interest rates? Weighing the arguments that David and Doug just posed, you might be of the view that the Committee's behavior over the past two decades has revealed enough to the public and to each other about your inflation preferences to make the marginal benefits of this additional step small relative to the additional costs. If that is the case, you would presumably prefer the status quo as represented in the left branch of the tree.

Even so, there might be scope for incremental improvement while preserving the current structure. At the margin, the Committee could encourage participants to be more specific about preferences about inflation, both within this room by periodically having discussions like this and in public through speeches and interviews. The Committee could use the minutes, testimonies, and Monetary Policy Reports to provide additional guidance to the public, so as, in effect, to signal the shape of the zone surrounding your working definition of price stability. As the memo from the Division of Research and Statistics noted, in the summer and fall of 2003, comments from various policymakers and mention in the policy announcement and minutes of "unwelcome disinflation" sent a clear message to the public that inflation had fallen about as low as you would tolerate. This meeting provides another such opportunity. You could, for instance, indicate in the minutes that, after considering the issues related to the inflation rate most likely to achieve maximum employment and price stability in the long run, the Committee viewed the current rate of underlying inflation as consistent with its goals.

Some of you, however, might view this approach as relatively oblique and as making the policy discussion needlessly imprecise. You might also be concerned that you would miss an opportunity to anchor better the public's inflation expectations. If you choose to quantify an explicit price objective, as in the right part of the schematic, you then have to decide whether or not to make that objective public, leading to the possibilities in the third row. In principle, you could decide to be specific about your numerical goal but keep a close hold on that information, the possibility outlined at the left. To be sure, private agreement on a specific objective would facilitate internal communication, in that you'd agree on an end and be able to focus your discussion on the most effective means to that end. From a narrow staff perspective, our jobs would be easier if we knew your inflation objective, as it is an important variable on the right-hand side of interest rate policy prescriptions and the fixed point toward which econometric model simulations gravitate over time. But I cannot conceive how the Committee could justify keeping an agreed-upon inflation objective secret nor how, as a practical matter, it could be kept secret. A consideration so central to your policy decisions would have to be reported in the

minutes for them to remain an accurate depiction of your discussion. And, besides, the world would learn of (and likely little appreciate) your secret pact five years later when the transcripts were released. Thus, the odds that you would settle at the end of this branch of the decision tree seem remote, which is why the box has a thick red band around it.

Thus, if you want to settle on a numerical definition of price stability amongst yourselves, I believe that it almost surely has to be a decision announced to the public in some form or other, introducing the question in the right box of row three: Should the inflation goal be decided by the Congress (presumably through the process of amending the Federal Reserve Act) or by the Committee?

The choice of an inflation objective that best achieves the multiple goals that the Congress has assigned might be viewed as a technical decision most appropriately delegated to specialists—the members of this Committee—the left branch. But if you see the major benefit of stating an inflation objective as anchoring longer-term expectations, then you presumably would want to commit to it in a fairly binding way. That might incline you to prefer legislative action, the right branch, as it is less likely to be reversed at some future date. Such a route through the legislature, however, may well lead to the issues listed in the box directly below in the fourth row.

In particular, is the Committee comfortable in seeking amendment to the Federal Reserve Act? Reopening the act could lead to other changes that the Committee might not welcome, and success in obtaining guidance on an inflation objective is by no means assured. Indeed, on two occasions in recent memory, proposed legislation to make the goal of price stability more explicit never made it out of committee. Moreover, if you request consideration of an inflation goal by the Congress, are you confident that it would pick a target you viewed as appropriate? There are good reasons, grounded in the economic theory of time inconsistency, that a decision about an inflation target should be delegated to a conservative central banker. That seems to have been the compromise worked out over time, and you might not want to perturb that equilibrium now.

I should also add that, once a dialogue is opened, you will surely be asked by some to specify an objective for the other of your dual objectives—maximum employment. There is a convincing answer to that question, in that, given the Federal Reserve's ultimate control of the inflation rate, it may be viewed as appropriate to have a long-run goal for price growth. But if monetary policy is neutral—that is, real economic outcomes are virtually independent of your actions in the long run—then events outside your control determine the sustainable level of employment and output growth. However, that there is a good answer does not guarantee good legislation, which is why this box, too, has a red border.

But if a numerical quantification of price stability were to be exclusively an FOMC decision, you will have to ask, as in the box at the left, how will the FOMC choose that objective?

The bottom row offers two possibilities. As at the left, the Committee might view a quantification of its price-stability goal as a group decision, similar to choosing ranges for the monetary aggregates from the late 1970s to the mid-1990s. Periodically, the Chairman could propose and the Committee vote on a single number or a range for the growth of a specific price index or indexes representing the long-run inflation outcome consistent with best achieving your dual mandate of price stability and maximum sustainable employment. Structuring the proposal in this manner underscores that you are not undercutting congressional intent but rather providing numerical guidance on how best to achieve your legislated instructions.

Some of you, however, could view this as an excessively rigid procedure at odds with the Committee's tradition of diversity. You are not asked to share a common economic framework or agree on the outlook for the economy, so might it not be appropriate to allow room for differences in opinion about your definition of price stability? In addition, you may harbor the concern that a formal vote might lead the public to believe mistakenly that the price objective is your sole focus.

One way of capturing this diversity, the right branch, would be to poll participants periodically as to their preferred specification of the Committee's price objective. For example, this could be done directly by adding such a question to your semiannual survey of participants' economic forecasts. Or it could be done indirectly by adding a few years to that forecast, on the logic that a longer-ahead forecast likely implicitly reveals your inflation objective. On the same logic, further-ahead forecasts of real GDP growth and the unemployment rate would also convey your views, respectively, of the rate of growth of potential output and the natural rate of unemployment. Indeed, such specificity, particularly if it were offered more frequently than the semiannual schedule of your current survey of economic forecasts, may make it possible to trim back on the policy statement released after each meeting.

There are a lot of issues to cover today and I suggest, as listed in your final exhibit, one possible strategy for organizing the discussion.

The primary question to address is: How do you define price stability? Is it known only by inference about behavior, when businesses and households are not distracted by changeable prices, or by a numeric specification? If it is the latter, what price index or indexes do you prefer? Is it stated in terms of a path for its level or as a rate of change, and what are the desired point estimates or ranges for their rate of growth?

Having shared those views about your inflation objective, you may next want to consider what role that objective plays in the Committee's regular business. There are three chief possibilities listed in the lower panel, which correspond to the branches of the decision tree that did not seem to be dead-ends.

The first alternative is to maintain the status quo in which the Committee defines price stability in terms of behavioral attitudes. Resisting strict quantification does not mean being silent, however, and you might choose to provide more information to the public over time as to your attitudes toward prevailing and prospective inflation, so expectations can be more firmly anchored.

As a second alternative, you may choose the formal apparatus of voting on an inflation objective—explained as the best means to achieve your dual mandate—at some regular frequency. If you do not view this as consistent with the diversity of the Committee process, the third alternative is to use the semiannual survey of economic forecasts to summarize the central tendency of your individual indications of the inflation objective.

While these issues are no doubt interrelated, separating discussion of the appropriate inflation goal from discussion of how the Committee should incorporate that knowledge in the policymaking process might aid progress today.

That concludes our presentation.

CHAIRMAN GREENSPAN. Thank you. Let's just open the floor to general questions and see where our conversation leads us. Who would like to raise the first issue? Governor Bernanke.

MR. BERNANKE. Thank you, Mr. Chairman. I know I'm not the median voter on this issue, so mostly I'd like to listen today. But I have just a couple of comments.

The staff did an excellent job of laying out the costs and benefits of a specific numerical objective for inflation. They noted quite carefully that the empirical evidence is far from decisive on the issues that they raised. I think the same argument could apply, for example, to whether or not low inflation is good in the first place. It's just very difficult to get precise empirical evidence on these issues, and, therefore, I think we all have to take a priori reasoning as being part of the argument here. I won't repeat those arguments, but I think we all have to introspect on these issues.

The question was raised as to how we define price stability. In my public remarks, I have occasionally referred to price stability as defined in terms of the core PCE deflator in a 1 to 2 percent

range. There are two principles here that I believe are somewhat important. The first is that the bottom level of that range not be zero. I think maintaining some space between the zero lower bound and our interest rate is important, and I would be uncomfortable with a lower range that brings us to zero too frequently.

The second principle is whether to use a core or a total measure, and I think that should depend to a large extent on the time horizon. If we're looking at a relatively short horizon, in my view the core measure is right because it is less variable and it better measures the underlying trend. If we're looking at a long-run objective, then I think a total measure is perfectly fine. Other than those two comments, personally, I would put a lot of weight on trying to achieve consensus, and I don't take a dogmatic view on this measure.

Let me make just a couple of comments about how I personally would view this innovation if we were to go down this route. First, as the staff pointed out, adopting an explicit numerical objective would not, of course, be a full-fledged inflation targeting regime of the form undertaken by the United Kingdom, Sweden, Canada, and other countries. Let me say that I think having a long-run inflation objective that is defined first of all not as price stability per se, but rather as the long-run inflation rate that best achieves our dual mandate, would be a major step forward. And if we were to take that step—that is, if we were to establish a true north on the compass, so to speak, for long-run monetary policy—I would not push for any further steps in the direction of a short-term inflation targeting regime.

The second observation I'd like to make is that I think one benefit of this approach ultimately would be to provide a stable and quantitative method of communicating our intentions and our plans to the public. Specifically, if ultimately we went down this route, I think we'd want to combine an inflation objective with perhaps more frequent forecasts that would help the public assess whether or not the economy was on a path that would eventually get us back to the stable equilibrium, so to speak. So I do think this approach would be useful eventually in terms of communication. In light of that, again speaking for myself, if we were to go down this route, I think

I would be quite comfortable with removing the forward-looking language that currently is in the statement and moving toward a more quantitative type of communication over time. Thank you.

CHAIRMAN GREENSPAN. I think you're raising a very important first question. Are we, in fact, all in agreement that low inflation is a desirable goal? If we don't come to an agreement on that, the rest of the conversation, in my judgment, is moot. So it might not be a bad idea to put that question on the table. I have always presumed, judging from the experience especially of recent years, that we have all concluded that low inflation—having created a certain degree of lower risk and greater stability—has enhanced the real economy in a manner which our experiences with high inflation did not. If that conclusion is not generic around this table, then we have a much broader question to be discussed among this Committee. So I'd just like to put that on the table to be sure that we don't end up with a majority vote on the other side of this question. If there is anyone here who feels even modestly in this direction, please take the floor and make your case. Governor Bies, please.

MS. BIES. Mr. Chairman, I would just add one perspective on that, which relates to how businesses reacted when the Fed really started to bring inflation down in '79, '80, and '81. One of the challenges that a lot of companies faced in that period was that they had gotten so accustomed to being able to raise prices automatically—because the climate was such that everybody was raising them—that the business processes around inflation anticipation were very different than what we have today.

So to answer the question of whether low inflation is a desirable goal, one would have to look at it based on where we are today. Today I think companies understand that a major challenge in this very competitive environment is to find ways to enhance productivity. They realize that it's a very tough world to operate in compared to the period of easy price increases that they might have experienced in the early '80s. I think companies have learned that. So in today's environment, since low inflation lowers the cost of capital and forces them to focus on service quality and their processes and controls, overall I think businesses would agree that low inflation is a desirable

objective. But I think we would have heard a different answer from them if we had asked that in 1980.

CHAIRMAN GREENSPAN. Well, I think the original purpose of the actions that were taken in October 1979 was to break the back of that general structure. At the time, the evaluation of the evolving inflationary forces was—and I think quite accurately—that we were getting very close to a highly unstable system. The assessment was that if the general view of the business community about the capacity to pass on cost increases didn't change radically, we were in for a very serious problem. And remember, what has happened in the period since is that we have effectively created an environment in which the level of prices is presumed to be generally stable and, therefore, profit can only come from true efficiencies. Clearly, from a macroeconomic point of view, that's the ideal model. And for better or worse, I think we have arrived there.

So I would say that the first principle we ought to agree with around this table is that the evidence, as best we can judge, conclusively indicates that a low-inflation environment has the highest probability of creating maximum sustainable long-term growth. We don't know that as an unquestioned fact, but it's about as close to a generic macroeconomic principle that we can have. Whatever else we do, I think we should not take that for granted. One of the questions I would have with respect to the proposition of even some soft form of inflation targeting—which is not what we are discussing today, as Governor Bernanke points out—is this: What could be the effect of changing the focus of the way we look at the world to emphasize a special view of price inflation, as distinct from a broad process in which a lot of forces are involved? I think doing so could very well skew our view away from an optimum analytical procedure.

If, however, the evidence were quite clear—even half as good as the evidence on price inflation being conducive to long-term economic growth—then we have to go with where the evidence leads us. My own view is that I haven't seen particular value in a specific numeric target, though there is no question that price stability is a critical variable that anchors the system.

Now, whether it's necessary to define price stability in terms of a specific index I think is less important than the broader question we've played with over the years, which is: Are we dealing solely with the prices of goods and services, or do asset prices enter into the evaluation? In other words, is macroeconomic stability, and specifically financial stability, a factor that must be taken into account as part of the overall process of our policy decisionmaking? If we decide, as I have a suspicion that future FOMCs will eventually come to decide, that asset prices are a relevant consideration—not necessarily to capture bubbles or what have you, but to try to mold a level of financial stability that cannot be achieved without advertence to asset prices—I suspect that that particular process will be coming onstream.

So in the conversation, try to think about—or answer, if you can—the question of how you view that possibility in the context of a macroeconomic environment that is changing continuously before our eyes every week and every month. We all look at it differently. We restructure, and we have a different model.

I think the important issue here is to recognize that we've had it relatively easy in recent years. We've somehow been able to capture an understanding of the key underlying forces that have driven inflation, unemployment, and productivity, and we knew as a consequence of that where monetary policy ought to go. I fear that this recent period may be a special case. I have never seen anything like this, as I mentioned to the Vice Chair and many others, since the middle of 1948—which is about how long I've been watching the economy on a day-by-day basis. I don't recall our having the slightest clue about what is likely to happen in the way that we feel quite confident about it today. Unless human nature has changed beyond my expectations, I believe it's extraordinarily unlikely that we will be as fortunate as we've been in recent years. And in the context of changing our procedures to the extent that we are talking about, I think we ought to keep that in mind.

That's all I have to say for the moment. Will somebody else please take the floor?

[Laughter]

MR. HOENIG. Thank you, Mr. Chairman. First of all, I am a firm believer that low and stable inflation is of paramount importance for an economy to have long-term health. I've held that view for a long time, having experienced some of the effects in our region of an inflationary cycle and the washout that comes with that.

Let me say that I thought these papers on whether we should adopt an explicit price target were good and very helpful. As I read through them, I came to the conclusion that there wasn't, as you said, a lot of evidence suggesting that explicit price objectives have a negative effect and that there was some perhaps weak evidence that they may have helped to anchor long-term inflation expectations. Based on that, I'd be inclined, depending on how the rest of today's discussion goes, to support using a range for consumer price inflation as an objective. Given its general acceptance by the public, I would choose CPI inflation because it's better known. And I would have an objective somewhere in the range of 1 to 2 percent or 1½ to 2½ percent. I also think the horizon should be the medium term and that, therefore, the objective should be total CPI. If the horizon were short, I would agree with Governor Bernanke that the objective should be stated in terms of the core CPI. While somewhat vague, I think a medium-term period would provide the information that would be important for anchoring long-term inflation expectations. I would also monitor very closely core inflation and use it to explain deviations of inflation from the target range. I think it can be very helpful that way.

I also agree with the point that an explicit inflation objective might be perceived as unduly emphasizing one component of our dual mandate, and I think that's a legitimate concern. I would think we could avoid this perception by ensuring that we always talk about both objectives in discussing monetary policy strategy and operations—although we can't put a target on the growth side. That's something we need to think about and work through. But I don't think it should necessarily inhibit us from going down this path.

Finally, let me mention only briefly how we might go about introducing an explicit numerical goal. I do not think we need congressional approval, but I'm not the expert on that. I defer on that to someone who is an expert, but I'd prefer not to go that way.

I could accept having the Committee vote each year on a medium-term inflation objective. That would allow us to take into account a changing environment, a changing economy, and changing dynamics. While this would allow for the possibility that the objective could change, depending on developments, I doubt that we would change it very significantly or often. I assume that we'd probably reaffirm the previous year's objective or modify it slightly based on changing circumstances. And I think having such an objective would serve us well in terms of keeping us focused on a primary goal of long-term price stability. I'll stop with that, Mr. Chairman. Thank you.

CHAIRMAN GREENSPAN. President Poole.

MR. POOLE. Thank you, Mr. Chairman. I'd like to confine my remarks at this time to the points that you raised a few moments ago. The importance of the long-term nominal anchor is great, and I think it has a lot to do with enhancing productivity and the other things that Governor Bies was talking about. But I think it's very important for stability in the short run that expectations be closely tied to that long-term anchor—that is, expectations about long-run inflation—and that those expectations not be pushed one way or another by current events.

One of the things that was so clear in the 1970s was that short-term monetary policy actions or inaction led to a destabilization of the longer-term expectational environment. When that happens, it puts severe constraints on the short-run policy options available to the Committee. One of the great benefits of very solidly established long-term expectations is that they provide the Committee with a lot more freedom to react to short-run disturbances of all different sorts without upsetting the expectational environment. I think that's a very great benefit in terms of short-run stability. To me, one of the advantages of an explicit FOMC inflation objective is that it would

assist in anchoring long-run expectations and make them less reactive or potentially reactive to short-term events, including policy decisions that are made for purposes of short-term stabilization.

CHAIRMAN GREENSPAN. May I ask what evidence there is that that is indeed the case? Do you have any evidence that knowledge of a central bank committee's specific numerical judgment as to the appropriate range for inflation does, in fact, anchor longer-term expectations? Obviously, if it does, it's tremendously important. Is there evidence that you find persuasive?

MR. POOLE. No, I agree with Ben Bernanke that evidence in this area is very, very hard to come by. But I'm saying that is one of the benefits I would see, basing my view mainly on—

CHAIRMAN GREENSPAN. If it were to happen, it would be an obvious benefit, but—

MR. POOLE. One thing that I do know, and I can speak to evidence in this sense, is that since the Korean War, meetings of this Committee have often focused at particular times on a concern that policy actions would be viewed by the market as upsetting the inflationary environment. When you go back and look at the minutes of these meetings—particularly around business cycle peaks, when the economy was already beginning to turn down—the Committee was typically slow to ease policy even though there was an understanding that the business cycle peak was at hand or at risk or had even passed. The reason, and you see this again and again in the discussions around this table, was concern that a premature easing—what the FOMC participants would call a premature easing—of policy would affect expectations in the market and would, therefore, aggravate the inflation problem that the Committee had been dealing with.

CHAIRMAN GREENSPAN. I remember saying exactly that.

MR. POOLE. So I can point to evidence that that happened numerous times around this table.

CHAIRMAN GREENSPAN. Well, no. The reason—and I remember it at these meetings—was that, indeed, we were looking at the question of inflationary imbalances building up. The point is that we knew in retrospect that the economy was tilting downward, but there were innumerable occasions when inflationary imbalances were building up and the economy didn't turn

down. We have an anti-inflation bias in this Committee, which is as it should be. And our judgment on policy has always involved a cost-benefit analysis—with particular concern about the cost of being wrong and going back to the 1979 experience. But I don't consider that evidence. How does that control long-term expectations?

MR. POOLE. It is not evidence that an announced target would help to anchor expectations. I'm making that judgment on the basis of what I think I understand about the process.

CHAIRMAN GREENSPAN. Well, you obviously have opinions or else you wouldn't be making the statement.

MR. POOLE. But I do think that well before 1979—in the whole period since the Korean War—one sees over and over again at business cycle peaks that this Committee was very concerned that it would upset the inflation expectations environment by acting prematurely.

If you're asking for evidence, I think there is one case, strangely enough, on the other side. That was when we were getting the funds rate down to 1 percent. The inflation rate was low and there was uncertainty in the marketplace about what the Committee's inflation objectives were. And it was at that point that the language came into the statement regarding an "unwelcome further decline" in inflation, and—

CHAIRMAN GREENSPAN. That's qualitative.

MR. POOLE. That was qualitative. That's correct.

CHAIRMAN GREENSPAN. I don't think anybody disagrees on the notion of making our conviction of price stability on both sides clear.

MR. POOLE. Right.

CHAIRMAN GREENSPAN. The issue is whether there is a critical advantage of a specific number rather than a range or probabilistic view or some qualitative view. That's what we're discussing. I think we have agreed that low inflation is superior, and I think we all have a general view of where low inflation is with respect to the indexes. The question is: Do we get an

incremental advantage by specificity whereby it alters expectations in a way that clearly would be favorable? That's the real question.

MR. POOLE. I think in that case that if we had previously announced a range, the market—well before inflation got close to or below the bottom of the range—would have been saying that the FOMC will be responding. The market would have been expecting us to move the funds rate down because inflation was getting down to or below the bottom of the announced range.

The one other case is not a U.S. case but Japan. I think the Japanese have also suffered from not being very clear that they do not want deflation, particularly as the situation developed in the early 1990s. The markets were left quite at sea in trying to figure out where Japanese monetary policy was going to go.

CHAIRMAN GREENSPAN. I think they still are.

MR. POOLE. Yes, they probably still are.

CHAIRMAN GREENSPAN. President Stern.

MR. STERN. Thank you, Mr. Chairman. Let me make just a few broad comments. Normally, when I start thinking about these kinds of issues, I ask myself what is broken that we're trying to fix. Here I ask myself: Do we want to be more explicit about a price or inflation objective? My answer to that is "yes," but it's not because I'm trying to fix something. I view it as the next logical step in more or less formalizing what we really have been doing over the past decade or more—what I would call trying to lock in past successes. So to me that's the most compelling rationale for seriously considering taking this step.

As I said, I've already come down pretty favorably on it, but I have two reservations that give me some pause. Let me just mention them. They've already come up. One is: Will we send the wrong signal about our dual mandate? I think Tom Hoenig already addressed that in suggesting that we can clarify that through communication. Many of us already address that when we're out in public by emphasizing the significance of price stability or low inflation, but indicating that the underlying reason for our commitment to price stability is how it affects economic performance.

The second concern that gives me a bit of pause is: Would this inappropriately tie our hands under certain circumstances? There I concluded that, first of all, if there were a legitimate crisis, we wouldn't have any difficulty explaining why we were deviating from whatever inflation objective we had announced. If we were concerned about deflation, I don't see any conflict because people would see what we were doing and the reasons for it would line up. So it seems to me that would be a concern only if we had a strange confluence of circumstances where inflation was an issue but simultaneously we were experiencing subpar growth or something like that. In such a case, I think Bill Poole's comments about the 1970s are relevant. First of all, I don't know what the probability is of the confluence of those kinds of events. It's probably going to be low. But secondly, I think it is worthwhile to have our hands tied at a time such as that.

CHAIRMAN GREENSPAN. President Santomero.

MR. SANTOMERO. Thank you, Mr. Chairman. I believe that it is important for the FOMC to define inflation goals and to do so numerically. I further believe that we can gain the full benefits of our reputation from recent history by committing to a specific definition of price stability going forward.

As some of you may know, I recently gave a speech on this, and I advanced a proposal that was intended to promote discussion regarding ways to implement a program of continued price stability. My preferences, as articulated at that time, were a target band of 1 to 3 percent on annual inflation as measured by a 12-month moving average rate of change in the core PCE deflator. Now, I'm not necessarily wedded to any of those three components. There are numerous ways of successfully designing an inflation targeting framework. Nevertheless, this proposal covers the three key attributes that I believe any inflation targeting framework must address, namely, the question of a range versus a single number, the time interval over which the target is set, and the measure of inflation that will be targeted.

I won't repeat here my reasons for the particular features I proposed. I would, however, like to point out that I believe there are key benefits to being precise regarding our goal of price stability.

In my view, the inflation targeting regime would improve discussion, help the FOMC communicate its intentions to the public, and give the public a clear criterion for judging policy. These are basically the points that were listed in the introductory comments by the staff.

The public would also expect us, except in rare circumstances, to take the necessary action to keep inflation within the target band. And an inflation targeting framework, once it is institutionalized, would align public expectations with FOMC intentions. In short, I think an explicit inflation target in one of the forms listed—I don't want to be too exacting on whether or not we're talking about a regime or a certain way of looking at the inflation number because to me those are second-order issues—would build public confidence that prices would remain stable over the long horizon.

Ironically, I also believe that moving to a regime of this type would increase flexibility and enhance our ability to achieve our other economic objectives. It is only because we had achieved a good deal of credibility over the years that we were able to lower the fed funds rate to 1 percent recently without igniting fears of inflation. And I would argue that this flexibility was important in contributing to the shallowness of the last recession. An inflation targeting regime would allow us to pass this credibility on into the future to other Committees so that they, too, could benefit from the successes of the past actions that the Committee has taken to bring an end to the period of great inflation and to produce 20 years of virtual price stability.

By contrast, I found the arguments against inflation targeting less compelling. For starters—  
CHAIRMAN GREENSPAN. You're using the term "inflation targeting" to mean?

MR. SANTOMERO. Well, this broad notion of saying that we have a numerical target and here's what the number or the range is.

CHAIRMAN GREENSPAN. But you're going beyond what's in the text. Are you using the terms interchangeably or are you talking—

MR. SANTOMERO. Yes, I am using it to mean this broad notion of our saying that we as a group have in mind a number that we want for inflation.

CHAIRMAN GREENSPAN. I ask because inflation targeting has a very specific operational meaning.

MR. SANTOMERO. I understand your point. That's why I think, quite frankly, that by arguing about the details we lose sight of what we're trying to do. What we have done up to this point is to agree on a rather open notion that we think the economy operates most effectively in a stable, low-inflation environment, and we have made that clear to the public. In my view, the next step is to say, "this is what we think we're looking for in terms of price stability." And as I said at the outset, I think the way to do this is by setting a range for an inflation objective over a period of time. That adds information. It is not so strict in the purest sense of an inflation target, but rather an inflation targeting framework or regime—those are the words I would use.

I'd like to talk for just a moment or two about the arguments that we shouldn't move toward inflation targeting. For starters, I believe inflation targeting is totally consistent with the FOMC's mandate. I agree with the view expressed by others around this table that we don't need Congress to set a definition of price stability. It is a technical aspect of what our mandate is.

Some of the discussions concerning the cost of inflation targeting to me actually serve to highlight the problem of discretionary policy. There will be times when the commitment to inflation targeting in my sense of the term will be constraining. If this were not the case, there would be no need for institutionalizing our commitment, because discretion and the commitment would yield the same policy. Therefore, an explicit inflation targeting environment will give the FOMC stronger incentives to act as it says it intends. Recognizing this, the public will consider the commitment to low and stable inflation more credible so that the full benefit of a stable price environment can be realized.

But will inflation targeting in this sense be too constraining? I don't believe so. I recognize that all contingencies for any situation cannot be pre-specified. In special circumstances, the FOMC must be able to act appropriately. Any miss in the inflation target because of extraordinary events that occur could easily be communicated to the public and, therefore, would not result in an

inappropriate monetary policy or loss of credibility. The experience of other countries and the fact that we are already implicitly targeting inflation without hindering economic performance indicate to me that it's not a major challenge to adopt an inflation targeting framework.

CHAIRMAN GREENSPAN. President Minehan.

MS. MINEHAN. Vincent has asked each one of us to consider whether an explicit numerical specification of price stability would be helpful to us in furthering the achievement of our goals for price stability and maximum sustainable employment and in our communications either externally or internally. My own answer to that question is "no, I don't think so." This is not a knee-jerk reaction to the idea of inflation targeting or goal setting. However one wants to define the regime, I think setting an inflation target or goal—and I am using those terms interchangeably—can be very helpful in some cases. In particular, when countries have experienced very high rates of inflation or are just emerging as market economies, stating inflation goals can be useful in communicating with markets. Doing that can be useful in demonstrating serious policy intent on the part of a new government or central bank regime and in building general credibility. Brazil and Mexico come to mind when I think of countries where an inflation target or goal has been useful, at least over time, particularly in the face of political and other uncertainties.

But the United States is not in that kind of situation nor is it particularly similar to the other countries or monetary unions that use inflation targets or goals—except perhaps the European Union and the U.K., both of which I would argue started at very different points with a new or newly independent central bank. We in the Federal Reserve have spent 25 or more years under two Chairmen first curbing inflation and then achieving a workable sense of price stability that's built not on a specific number but on the absence of rising prices as a major consideration in everyday business and consumer decisions. Personally I'm comfortable with that definition. And I think it has been quite successful if you look at the way inflation expectations are anchored, at the volatility of economic output, and at our achievement of low inflation over the years.

What we do in setting policy—how we actually conduct policy over the years—seems to me far more important and a far greater element of our credibility than what we say we are going to do. And, in fact, what we say could actually frustrate policy. Now, I know some of you are reacting the same way I think some of my colleagues in Boston do when I state this position. I can hear them. [Laughter] They would say: “Now, come on, Cathy, how much harm could it do to state a goal in terms of a range of inflation within which you as a policymaker would feel comfortable? Wouldn’t that have the advantage of being more transparent in your policy-setting and more forthright about your tolerances for inflation, both on the high and the low side?”

There have been volumes written about this subject, and I’ve done some reading of that material in addition to work by the staff, which I think was extremely well done. In the end, however, I have to come at this with a more or less commonsense perspective that’s the result of my experience on the Committee and in the Federal Reserve System. I understand the argument for an inflation goal, but, to me, anyway, there’s at least a possibility that setting a numerical goal or even a range of acceptable inflation could present the risk of either being less transparent or, arguably worse, making a bad policy decision.

If a particular goal for inflation is to be credible, then it would seem to me that markets would have to have some confidence that the Federal Reserve would react in predictable ways each time that goal is either met or missed. But inflation is not the only goal, as we’ve all said. Sustainable employment, or however you want to characterize the other part of our mandate, is a goal as well. So my policy preference for a given level or path of inflation would not be identical all the time. It would depend on what is happening in the real economy, just as in the first half of 2004 we tolerated rather rapid price growth on the basis of our calculation of the degree of excess capacity in the real economy and the temporary nature of the energy price increases. I know that over the long run there’s no tradeoff between growth and inflation and that price stability, however defined, is the best contribution monetary policy can make to economic prospects. But in the short run, when supply shocks can dominate, there can be tradeoffs.

There needs to be flexibility to set policy with some sense of balance between the two goals. So if I commit to an inflation goal but don't always adhere to that goal because of the need to be concerned about the real economy, how is stating the goal a form of better communication? Or alternatively, if I don't balance the goals and make policy choices based on that balance, then I may be adhering to the inflation target but making bad overall policy.

Now, I realize that the staff presented options allowing for all kinds of flexibility in setting and administering an inflation goal. The goal could be focused on the long run, it could be measured flexibly, the numbers could be changed, et cetera. But if it's going to be all that flexible, how could it possibly make a difference in either how we're viewed or how we actually operate? Frankly, I'm not sure I want to change how we're viewed or how we operate. I think it has been pretty successful.

Inflation goals or targets strike me as not unlike the performance metrics that are used to judge the effectiveness of operations. Anyone who uses such metrics knows that, while they're useful, they can be very tricky. That's because you actually get the performance you measure. Focus hard on costs, and innovation and quality go out the door. If you give people incentives to increase profits and make the share price go up, accounting ethics can be at risk. Performance metrics need to be multidimensional and surrounded by robust control systems if they're to work in a way that both achieves the objective and balances how the overall organization functions.

I don't worry about this Committee's ongoing commitment to price stability, no matter how many of the faces around the table change. What I do think could be at risk, if only marginally, is the balance and, yes, discretion that is vital to policymaking. In sum, I look at inflation targets or goals, however unthreatening they may appear, as a solution both in search of a problem and with a potential to cause one. I'm not in favor of going forward with an inflation goal, in case anybody is uncertain about that! [Laughter] But if, in the fullness of time, we decide to do it, I have some thoughts on how we could do it. I'll share them with you later if that is necessary. [Laughter]

CHAIRMAN GREENSPAN. President Lacker.

MR. LACKER. I want to start by commending the staff for the background papers that in my view were quite thorough and balanced.

The question today is whether the FOMC should or should not adopt an explicit numerical price-related objective and, if so, how. My feeling is that this is a rather narrow question as it has been presented to us today in the sense that, given our current practice, announcing such an objective would not require very much change in Fed policymaking. And yet I think it's an extraordinarily important step for us to take.

Regarding the operational issues raised in the memo by Wilcox and company, I agree with the recommendation that the objective should be a consumer price index—either the CPI with a 2 percent midpoint or the PCE price index with a 1½ percent midpoint. These midpoints would allow for a known upward measurement bias and provide an additional 1 percent cushion against the zero bound. My preference would be to target the PCE index since that measure has some methodological advantages and it's what we focus on internally. I also have a preference for targeting the core measure because that would be sufficient to anchor headline inflation over time, but it would afford us the latitude to allow the relative prices of food and energy to fluctuate without necessarily requiring a response. I would also favor a 1 percentage point range, from 1 to 2 percent, rather than a point target, so as to give us a reasonable safe harbor within which we would not be pressed to explain fluctuations in inflation. A relatively narrow safe harbor, however, would discipline us to explain why there are fluctuations in inflation and how we expect to reverse them over time. And I'd expect that our inflation objective would be revised only infrequently, mainly in response to improvements in measurement.

With regard to the issues covered by Vincent's memo, I think we should announce our objective to the public. When we do it, we should emphasize that it's an incremental step and does not imply a dramatic departure from how we have been conducting monetary policy. We should also emphasize that we believe—based on central banking experience both here and abroad and a priori reasoning, perhaps—that it will enhance the operational power of monetary policy to stabilize

both employment and inflation. And we should explain that it will do so by better anchoring long-term inflation expectations and thus improving our ability to communicate in the short run.

Admittedly, monetary policy, as many people have remarked here today, has been working relatively well lately, and we're already widely credited with making low inflation a priority. So the question arises of why we should take the additional step now of announcing an explicit long-run inflation objective. For me the argument boils down to three things. First, we all agree that we want inflation to remain fairly close to where it is now. I took that as a consensus, Mr. Chairman, that the costs of failing to keep inflation this low are well understood. And on net, there are no good reasons to want inflation higher or lower than where it is today.

Second, by announcing a specific long-run objective, we would not be giving up much flexibility that we haven't already given up or that we shouldn't be happy to give up. In the process of establishing the reputation that we have now for our commitment to price stability, we already have given up the flexibility to let inflation expectations get out of control. An announced objective would be meant to guide our actions in the long run. It would not hinder us, in my view, from taking the kinds of policy actions we take today to stabilize employment and output in the short run. It would help discipline us, however, to undo and to explain how we intend to undo any short-run departures from our long-run objective. More to the point, it would force us to respond when measures of expected inflation move very much outside our target range. There are no circumstances, I submit, in which we would want expected inflation outside of a narrow band around our objective for very long. Thus, the narrow scope of flexibility that's at stake here is something I think we'd be better off without.

Third, establishing an inflation objective within the Committee would facilitate discussion. And announcing it, I think, would lead to better public understanding of how we intend to conduct monetary policy going forward. The value of ambiguity about our long-run intentions has outlived its usefulness in my view, and I don't see any reason to retain that ambiguity. Moreover, I think better clarity about our long-run objective would help us be more transparent about the short-run

policy process; I agree with President Poole about that. Ultimately, I think this is the only way to secure good monetary policy in the future.

CHAIRMAN GREENSPAN. President Yellen.

MS. YELLEN. Thank you, Mr. Chairman. I also wanted to begin by complimenting the staff on their excellent and balanced paper and presentation.

When I first participated in this Committee back in 1994, I believed that inflation by any measure exceeded the comfort level of every FOMC participant. The goal of lowering inflation over time was a universally shared and well-articulated goal. At that time, a qualitative definition of price stability arguably sufficed to communicate the Committee's objective to the public. Now that underlying inflation has receded to a level that many of us consider optimal, though, the transition costs of lowering inflation have become moot, and there are potential benefits of enunciating a numerical long-run inflation objective.

I think the articulation of such an objective would facilitate coherent internal policy discussions. To the extent it helps anchor the public's inflation expectations, it would enhance our ability to avoid deflation in the vicinity of the zero bound on interest rates. A numerical objective might also reduce the potential for destabilizing inflation scares following adverse supply shocks, enhancing the scope for monetary policy to respond to their real effects. The public enunciation of a long-run inflation objective I think also enhances accountability and transparency, and those are desirable goals that we should pursue.

Now, of course, I worry about the possible costs and unintended consequences from taking such a step. In this regard I'm very sympathetic to the arguments that President Minehan has expressed. And Governor Kohn has articulated these same concerns on a number of previous occasions. Such a policy might be the first step along a slippery slope that ultimately undermines the Committee's mandates for maximum employment, as well as broader financial stability. So for that reason, I think enunciation of a numerical inflation goal simply must be in the context of a clear and

effective communication of our multiple objectives and the policies that we follow to achieve them. I'd like to come back to that point in a minute.

I recently reread the transcript of the 1996 FOMC meeting at which the Committee I think last discussed a numerical objective for inflation. At that meeting there was actually a considerable consensus among participants, including myself, for a 2 percent long-run objective for CPI inflation. Since then, of course, there have been several important developments relevant to this choice. Back in 1996, I argued that the inflation objective should contain a cushion sufficient to grease the wheels of the labor market. The potential negative impact of downward nominal wage rigidity on real economic performance diminishes, however, as productivity and hence average wage growth rises. And as Doug mentioned, it turns out that high productivity growth over the past decade made downward wage rigidity a nonissue. But for me, this shift has been offset by the experience of very low inflation both here and abroad, which has certainly heightened my concern relating to the zero lower bound. So, on balance, taking a number of other factors into account, I find myself still pretty comfortable with the numerical objective we discussed almost a decade ago.

Instead of adopting an objective based on the CPI, I would now enunciate an objective based on the core PCE. This seems sensible given the methodological advantages of that index and the Committee's recent emphasis on it. Taking measurement bias between the two indexes into account, my preference would now be for a long-run inflation objective of 1½ percent for core PCE inflation.

I wanted to discuss a couple of details relating to that objective. First, I prefer a core measure of inflation even if total inflation is more closely related to societal welfare. As a communications device, I think we should focus our attention on underlying inflation and not on movements that we view as transitory. Second, on balance, I find myself preferring a point estimate rather than a range. Specifying a range is helpful and commonly what is used. It's helpful in emphasizing the FOMC's imperfect control of inflation, but it might wrongly suggest that the Committee is equally comfortable anywhere inside that range. In addition, it might suggest that we

would react in some nonlinear fashion if inflation moves outside the range. Moreover, the staff paper shows that, viewed as a formal confidence interval, a reasonable range that we could actually hit, say, 90 percent of the time, might stretch from zero to 3 percent, which is simply too wide to be helpful.

Let me briefly turn to Vincent's second question, which concerns how we might communicate a long-run inflation objective to the public. My answer would be to take the polling and surveying elements of Vincent's alternative 3 and combine them with the communication strategy of his alternative 1. To elaborate, I would hope that by the end of this discussion we might obtain some consensus on a numerical long-run objective, possibly through a poll or survey of participants. If a consensus on a numerical objective were reached by this group, it could then—and probably must be—expressed in the minutes.

In trying to formulate what that description might look like, I found myself attracted to the very carefully crafted language proposed by Governor Bernanke in his presentation at the St. Louis Fed's 2003 conference on inflation targeting. His suggested language states that "the FOMC believes that the stated inflation rate is the one that best promotes its output, employment, and price stability goals in the long run." He also proposed stating that "the FOMC regards this inflation rate as a long-run objective only and sets no fixed time frame for reaching it. In particular, in deciding how quickly to move toward the long-run inflation objective, the FOMC will always take into account the implications for near-term economic and financial stability." I think these provisos are important in explaining to the public why the Committee endorses an inflation objective that actually differs from true price stability. And, by emphasizing the potential for conflicts between price stability and real economic performance, it highlights the Committee's commitment to pursue not just one but both parts of the dual mandate. I think the minutes should also note that the issue of an appropriate numerical long-run objective would be revisited from time to time and that it might be appropriate for the Committee to reappraise—although typically reaffirming, I expect—the inflation

objective annually. I view these steps as augmenting the status quo, but with a much clearer expression of our views on optimal inflation.

CHAIRMAN GREENSPAN. Governor Kohn.

MR. KOHN. As if on cue. [Laughter] Thank you, Mr. Chairman. Let me begin by commenting on a couple of the things that you said at the beginning. I think there's a consensus—I know that there's a consensus—around this table that price stability, approximated by very low, stable inflation, is the appropriate long-run goal of this Committee. And we agree that it is the way, for the reasons you stated, Mr. Chairman, as did Governor Bies, that we promote maximum sustainable growth—by taking inflation out of the decision picture. I think that consensus actually gives me a little more confidence than I hear from some of my colleagues that our goal would not be vulnerable to the passage of time or changing personnel around the table. I think it's just so widely agreed that I'm actually not concerned about those two things.

So this idea of cementing in the past performance to me carries a little less weight in arguments that we ought to define price stability or to have an inflation target than I think some others are giving it. I think it's already there. I'd be very, very surprised to see it go away.

I think in practice there's a range of measured inflation rates that fit the general criteria of promoting efficiency and not playing a material role in private decisions. The policy reaction to a forecast of a given rate probably depends on what else is going on at the same time—your point, Mr. Chairman, about the dynamics of the price process.

And then particularly on the supply side of the economy, as a number of you noted in 2003 when we were worried about inflation getting too low, the steady 1 percent inflation looks a lot less worrisome when productivity and demand are strong than when they are weak. In the former case, potential constraints of the zero bound on interest rates and stickiness of wages would be much less threatening.

I'd also guess that the prospect of inflation of 2 percent or even a bit north of 2 percent would look a lot less adverse in the presence of persistent adverse supply shocks that were also

depressing demand and production. And as you mentioned, Mr. Chairman, the particular attitude toward an inflation goal could be affected by our perceptions of financial stability and what is required to keep the financial system stable.

To me this suggests a zone of price stability encompassing a range of inflation outcomes, with the edges of even that zone being soft or changeable, in the sense that our policy reaction to inflation projected to approach or even violate some notional zone would depend on the circumstances. In my view, this is the way we have been conducting policy. It has been very successful in producing price stability and stabilizing economic cycles. President Lacker said that we wouldn't be giving up much flexibility if we adopted this definition. I'm not sure why we should give up any.

It seems to me that this type of thinking argues very strongly against a point definition of price stability or against a range where the center has a good deal of gravitational pull. In that regard, I look at the ECB [European Central Bank], which has defined a point for its price stability objective. In my view, that definition has constrained the policy choices of the ECB in ways that are not in the best interests of the euro-area economy.

Now, by tolerating a range of outcomes, we do incur a cost in terms of variation in inflation expectations. You asked, Mr. Chairman, whether there was any evidence that inflation targeting or an inflation definition could tie down those expectations. A very excellent paper that we had from the staff suggested that evidence was beginning to accumulate that inflation expectations are better tied down in inflation targeting countries. What is surprising is how weak and recent that evidence is, and I think the weakness and recentness of the evidence is a testament to the fact that price expectations have been very stable in the United States. And I doubt that the welfare costs of the variations we've experienced outweigh the welfare gains of the flexibility in policy reaction that I think we've retained by not having a target for inflation and not having our hands tied in any way by a numerical objective.

That said, my first choice would be to enhance the status quo, as Vincent was talking about. I think there are some things we can do within the status quo, broadly defined, to reduce uncertainty about our price stability objective. In my view, we've already taken one step by extending our February projections for a year. As I thought about my 2006 inflation projection, I couldn't see any reason that it would differ materially from an inflation rate that I thought would be acceptable in the long run. I suspect the rest of you went through the same thought process. I don't know what the results are; we'll see them tomorrow. But I think the results could tell the public a good deal about the range of outcomes that the Committee considers acceptable.

It does appear that one uncertainty now is about how high an inflation rate we would find acceptable. I think we could address this point, as Vincent notes, by indicating in our individual speeches and your testimony, Mr. Chairman, and in the Monetary Policy Reports the sorts of inflation situations that would concern us.

Now, if we do find that that's not enough and that an explicit numerical range from the FOMC as a Committee would be helpful in anchoring expectations, I would urge a couple of things. One, I would specify the objective in terms of total PCE inflation—not a price level and not just core inflation. I think changes in core inflation are better indicators of underlying inflation pressures and may even help to predict future total inflation. But to me the arguments for price stability suggest a broad measure, and I don't think we should ignore trend movements in food and energy prices that may be contributing to overall inflation. After all, this definition, if we were to adopt it, is a long-term definition—not something we would hit year by year.

I would have a fairly wide range on the definition. Somebody mentioned 1 to 3 percent. I don't think it would be possible to make good arguments within that range that welfare is a lot higher or lower at one point or another. I would clarify that it's a long-term definition. Inflation rates could be out of the range for a while, depending on the circumstances, but they'd be expected to get back in it eventually. I would think that inflation anywhere in the range would be acceptable, though we might take action to change the rate within that range under certain circumstances. And I

would emphasize, as others have noted, that choosing any range or choosing a definition in no way connotes a downgrading of our output stabilization goal. That's a step that Congress has refused to take on several occasions.

That brings me to a final point. If we were to take this step of enunciating a numerical definition, I think we would need to consult extensively with the Administration and the Congress to explain what we're doing, why, and what it does or does not mean for the conduct of policy in the future. As near as I could tell from the International Finance write-up, in all the inflation targeting countries—Switzerland might be an exception—the government outside the central bank was involved in some way in the adoption of their regimes or their definitions. We're not talking about inflation targeting here, but it would be an important change in the way we communicate, and we should have the understanding and the support of our elected representatives if we're going to make such a change. Thank you.

CHAIRMAN GREENSPAN. Thank you. Let's take a break now for maybe 10 or 15 minutes. We'll come back and see if we can get fully around the table by the end of the day.

[Coffee break]

CHAIRMAN GREENSPAN. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. I would also like to start by thanking the staff for the great material on this subject; I found it very helpful. And I'd like to be on record as stating that I do regard price stability as the most important contribution that we can make to the nation's long-term economic welfare. I also believe the FOMC has done a remarkable job over the past 20 years in achieving and then maintaining price stability. Nevertheless, I think there are some modifications to our current practices that are worth considering. In my view, being more numerically explicit about our inflation objective can help us to be successful in maintaining price stability. I don't regard an explicit numerical price objective as a panacea, but I think it could help us. We might gain some additional credibility with the public by simply being clearer than we are today. After all, what is reported in the press is that the public already most likely believes that a

majority of us have something like a 1 to 3 percent CPI range in mind. But some people might suspect that we are intentionally trying to create some wiggle room so that we can avoid accountability. So, greater clarity, I think, would enable us to project a more credible image, and it might engender some extra self-discipline when we really need it.

More importantly, I think that being more explicit will give us a greater capacity to communicate both internally as well as externally. By that, I mean that now I sometimes can't tell whether I'm differing with another participant's position because we have different price projections or because we have different price objectives. So, I think it would be constructive for us to be a little more explicit with one another about each of these factors.

My price stability objective is for price expectations to be consistent with the PCE index increasing at an average rate of 1½ percent per year, which I expect to achieve by having the PCE index itself increasing at that average rate over periods of five to ten years. Now, I'm stating my definition in terms of PCE because we've gravitated to that measure in this Committee, but I don't have a strong preference for it over the CPI. Either would be fine with me. If we were to use the CPI, though, I would have my objective in the 2 percent range.

Since inflation is certain to vary around any single numerical objective in the short run, even when we achieve the average objective over time, I think putting a range around the objective can indicate a kind of tolerance zone. My tolerance zone is a 1 percentage point spread above and below my 1½ percent PCE inflation objective. I don't view this necessarily as a boundary triggering policy action; but when inflation falls outside of that range, I think some extra public communication about the situation would be helpful.

Turning to the question of what role the price objective should play in the Committee's policy process, I'm open to considering the idea of a Committee objective and range, as described in Vincent's alternative 2, although I don't think it's necessary to jump to such a position in one leap. In fact, I think it would be more prudent to take a small step in that direction and gain some experience. I think we would gain a lot by modifying our semiannual economic projections, as laid

out in Vincent's alternative 3. More specifically, I like the idea of individually submitting projections for each of the next two years, as we did for this meeting, plus an additional set of projections for the average of the next three to five years. These projections, as Don Kohn mentioned, would be based on each participant's working definition of price stability and the policies that support it. The ranges and the central tendencies of these projections would become public, perhaps in the context of an expanded discussion of them in the Monetary Policy Report. And then policy actions could be explained in the context of these more explicit objectives. I wouldn't be surprised to discover that our three- to five-year inflation projections converge to a fairly narrow range. Moreover, this adjustment to our current practice would be embedded in a process that's already quite familiar to the public and shouldn't be regarded as radical. Importantly, I think this modification to our current practice would be perfectly consistent with the congressional mandate under which we operate today. Thank you, Mr. Chairman.

CHAIRMAN GREENSPAN. President Guynn.

MR. GUYNN. Thank you, Mr. Chairman. I also thank the staff for the helpful papers. My own views are closest to Cathy Minehan's and Don Kohn's. Like almost everyone who has spoken, I would remind all of us that we have been very successful in helping to achieve a long period of stable and low inflation. I think we have also achieved significant transparency in terms of our inflation preferences. I believe that each of us around this table has a general sense of what we think our target is. I believe that outsiders, including financial markets, get it as well. So, I don't think there's any great additional transparency to be achieved by announcing a specific numerical objective.

I think there's also considerable risk at this point in going down the path of choosing a more formal objective. We have a large group around this table, and I think it's going to be very difficult—though perhaps not—and maybe even counterproductive to agree on a single price measure on a more formal basis and with a less flexible adjustment process. I think we could even lose some of the richness of the discussion that we've had in the past. I'm reminded of the period of

time when we were so worried about deflation that we perhaps didn't do as much as we could have in dissecting and decomposing some of the measures of inflation to see some of the things that were going on under the surface. If we focus on a single price measure, we may in fact miss that kind of opportunity to look at what really is going on. Although I agree with President Stern that having a specific objective would not tie our hands, literally, I think it would, in fact, cause us to give up at least some of the flexibility that we currently enjoy. And I see no reason to do that.

There hasn't been a lot of discussion of one of the items that Vincent mentioned in his paper, and that is the reaction of Congress to our attempts to set a price-related objective. I agree with others that we probably, in our way of government, have an obligation at least to consult with the Congress. I think there's a clear risk that the Congress, with all good intentions, could want to substitute its judgment for ours regarding what would be an appropriate objective. And maybe, as Vincent's paper suggests, Congress would even attempt to give us multiple objectives that could be internally inconsistent or, in fact, beyond the central bank's ability to materially affect.

I won't repeat the arguments others have made about some of the new communications problems that we could create with a formal objective. I actually think what we need to do is to allow ourselves and others to celebrate an approach and operating process that has worked and worked very well in not only achieving low inflation but anchoring inflation expectations. I certainly agree with the suggestion in Vincent's presentation that we should continue to work on other opportunities to explain our inflation preferences and intentions. But, to use the word that others use, I don't think our current process is "broken." I have much more confidence than some others that the people around this table and others who will follow us are not likely to break it.

Mr. Chairman, I think we should stay where we are for the moment, although this issue certainly merits continued discussion. Thank you.

CHAIRMAN GREENSPAN. President Moskow.

MR. MOSKOW. Thank you, Mr. Chairman. On your specific question about low and stable inflation, I, too, believe it is very important. I had similar experiences to those Susan Bies had in private industry in the late '70s and the '80s, and I share her views completely.

I also had some experiences in government in the late '60s and early '70s. In 1971, when we had wage and price controls, I headed a little group called the Council on Wage and Price Stability, which was monitoring inflation after controls were put in place. This was a terrible period. It was bad in private industry, and it was bad in government, too. We want to do everything we can to avoid going through another period like that or having to face those problems again.

In answer to Vincent's questions, I come out for alternative 1. Let me explain how I got there, but first I would add my compliments on the staff's work. The papers the staff prepared were excellent.

In terms of defining price stability, in principle I think behavior does reveal the costs associated with inflation. In the definition that we've all been using, we look at the way people are behaving in terms of devoting resources to dealing with inflation costs and risks. If behavior suggests that the costs are low, then that is price stability. That's the definition we've all been using. This means, of course, that inflation not only needs to be low, it also needs to be stable.

So, would it be helpful to define that as a number or a range, beyond the behavioral side? I guess, in practice, it would be useful within this Committee to have an explicit number to judge where we are and where we're going. And to answer Vincent's questions, if we were to do that, I think we ought to use what is technically the best index, which is the PCE. It's less familiar to the public than the CPI, but the more we use it publicly, the more people will catch on to it, and certainly people would learn a lot more about it if it became the focal point of our discussions about inflation. I tend to focus on the core inflation number, and I personally think that 1½ percent is a reasonable assessment of what might be best. But I would say that anything between 1 and 2 percent would be about the same for economic performance. Anything lower and the zero bound becomes an issue.

I did want to make a couple of comments about the discussion of a range versus a point estimate for our objective. We've heard arguments on both sides, and I guess I would put in a caveat about a wide range. People have talked about 1 to 3 percent. I think we would need some greater clarification about the acceptable outcomes within that range. For example, let's say the range was 1 to 3 percent and we had 2¾ percent inflation for four or five years in a row. I don't think any of us would really feel comfortable saying that's price stability. Janet mentioned that having any range gives the impression of a zone of indifference, and I think that's an important point. I share some of her concerns about that, so I think it would be an important issue to address if we ever were to set a range.

In terms of the role of the price objective in the policy process, as I said, at this time I prefer alternative 1, the status quo. I would augment it with some of the steps that Vincent mentioned in his memo to give more information to the public. In a sense, this is a further evolution of our efforts to improve transparency. We've taken an incremental approach to improving transparency, and I think it has served us very well. Going further than those incremental steps I don't think is necessary.

Now, the staff paper discussed the international experience, which I found very interesting. But our situation is really quite different from the two groups of countries that were mentioned. As Cathy noted, we don't have a crisis to deal with, as was the situation in Brazil or in Mexico. We have low inflation and a good deal of credibility. We're also the largest economy in the world, so the formation of inflation expectations here is likely to proceed differently than it does in smaller economies and ones that are much more open than ours that appear to have benefited from inflation targeting.

So, I don't think we're ready to proceed on this yet. I believe it would be best to take small steps. I can see a number of possible problems that could arise. I think we have to be very careful in discussions with the Congress and with the public over how to address this issue in view of our dual

mandate. As Don Kohn suggested, we ought to move very carefully here. That concludes my comments, Mr. Chairman.

CHAIRMAN GREENSPAN. Thank you. Governor Gramlich.

MR. GRAMLICH. Thank you, Mr. Chairman. A lot of points have been put on the table already, so I feel a bit like I'm taking an oral exam, but here goes.

First question, is low inflation desirable? Yes, I definitely think it is.

MS. MINEHAN. That's one right answer! [Laughter]

MR. GRAMLICH. I'm going to get to meatier things! [Laughter] Is it desirable to have an anchor? I think it is, and I think Bill Poole gave the reason—that we actually have more flexibility to move against unemployment if we have a well-understood anchor. On the other side, I'm gratified that nobody is really in favor of a full, formal inflation targeting routine, such as was described in the document by the International Finance Division. The system is not broken. We have somehow or other managed to convey that the Committee cares a lot about low inflation, and many of us in our talks have even used the word "anchor." There may be some incremental steps we could take, but I agree with what Mike just said—that since it is not broken, we should be very, very careful.

Mr. Chairman, you raised the question of asset prices, and I notice that nobody has commented on that, so let me. It strikes me that asset prices are a fundamentally different breed of cat here. Asset prices—stock prices, exchange rates, even housing prices—I see as part of the monetary transmission mechanism. We should, as we say, take them into account in making our forecasts and doing our analysis of the economy, but I think we have to leave them out of the index. If we go to targeting some index or another, I don't want that index to include anything about asset prices. I think that's a fundamentally different notion.

The staff, I think, gave us good information. As for me, I favor a core index on the grounds of the numbers shown here. If we have an index and want to keep it in a zone, I'd like to have that index be more stable so it is out of the zone less and so we have to explain less frequently why it is

out of the zone. And to me, it's almost self-evident that we would want to use consumer prices and the rate of inflation.

On the question of what is our target, everybody seems to be for 1 percent on the bottom, and that's fine. I am, too; there's little disagreement about that. But I think some of you are being a little too hawkish on the top side. There's an old experiment that I learned about in graduate school from Richard Ruggles, who used to be a professor at Yale: Offer somebody \$10,000 and the choice of ordering from a catalog of all goods and services made this year or five years ago, and take a poll on which option they vote for. Try it. You all give talks to Chambers of Commerce and so forth. I've been doing it for years, and people will consistently vote for the current menu. Obviously, this experiment has to be done at a much higher level of scientific rigor. But I think in the utility sense, even core PCE rates as high as 3 percent may be more or less consistent with price stability, given the great difficulty we have in dealing with technological change in price indexes.

On the range or point issue, I think Janet raises a good point about the point, and this is the way I take her point. [Laughter] Let's say the point is 2 percent, and the inflation rate goes from 2.4 to 2.5 to 2.6 to 2.7 percent. That won't be a huge issue and we might not have to explain that. But I have to come back to the fact that when I think about inflation, I actually do think in terms of ranges. I'm prepared to believe that inflation will fluctuate within a zone, and I'm not going to worry in that range. So I'm a little more comfortable with setting a range or zone than I am a point. It will require occasional explanation when inflation gets out of the zone, but I think that we ought to be prepared to do that. If it does get out of the zone, we ought to be able—thinking among ourselves—to say why that is. So, I guess I don't find that too costly.

In terms of how we do this, I would definitely take a low-key approach. I think we'd want to be clear that this is part of a broader agenda. We have our dual mandate, and we feel that if we make it clear what our inflationary anchor is, we can actually fight unemployment better. This wouldn't come with lots of discussion and I wouldn't make a big deal of it. It would be about as babyish a

step as we could possibly imagine. I actually liked the paragraph that Ben wrote, so something like that might be a good start.

Should we consult with Congress? Yes, we would have to consult with Congress. And there is a risk in consulting with Congress because their first question is going to be, “Well, are you going to set a range for unemployment?” The staff dealt with that issue in their document and found that doing so actually risks making fundamental macroeconomic mistakes. So, I would not want to be forced to set a range for unemployment—and we would face that risk. At the same time, if we’re going to do something like this, I think we do have to tell Congress about it. But open up the Federal Reserve Act? No way. Thank you.

CHAIRMAN GREENSPAN. Governor Ferguson.

MR. FERGUSON. Thank you, Mr. Chairman. To start, as I’ve told a few of you, I’m struck by how easily one moves in this Committee from being a brash “young Turk” to being part of the “old guard.” So, as a former young Turk and now a member of the old guard, I will speak for the status quo.

You’ve raised a number of questions, and others have too. The first one, obviously, is: Does one believe in the core mission of price stability? By definition, I take the easy answer of “yes.” I would note that we’ve gone around this table and, as you and others have pointed out, there is no one who, after many years of experience, would say anything other than “yes.” To me that’s extraordinarily important, because one of the reasons that people get excited about this question of inflation targeting—or what has now been redefined by our staff as adopting a quantitative price objective—is some anxiety that people in this room will “use or lose” some of their historical memory. But I am firmly of the belief that whatever may happen going forward, and whoever may sit in whichever chair in this room, the experience that we’ve had in the past 20-plus years has created on this Committee a strong sense of price stability as a key element of our responsibilities. And that, I think, is a bedrock that we shouldn’t ignore.

Now let me turn to some of the questions that have been put on the table. First, how does one define price stability? The staff has done a very, very good job in many ways, but I think they've given us a little false dilemma on how to define price stability. I actually try to define it both ways—both qualitatively and quantitatively. The qualitative definition is: It doesn't seem to be affecting the way households behave. You put that definition on the table, Mr. Chairman, and I think that is not irrelevant to us. Second, like everyone else, I've learned in the time that I've been here that perhaps the core PCE at this stage is the better index, but that's not to say that in five years we won't go officially to a chain CPI and that may become the better index. So, at this stage, core PCE seems to me slightly better in terms of how one thinks about inflation.

Should the objective be in terms of the rate of inflation? I think the argument there is pretty clear. On the point estimate versus range, I think Janet, as always, with her background, has noted a number of reasons why a point estimate might be useful. On the other hand—again, learning from experience—I end up where Ned Gramlich was, in that I believe it's probably wiser to think of this in a range. Now, having said that, then we get to the staff's point that if we announce a range as a zone of indifference, in some sense there's a question of what we have added to what the public already knows.

That brings me to my third point, which is: Do we need to have, in addition to this internal discussion, a broad external discussion? And here I start where Gary Stern started but end up in a different place. Gary asked the question, in some sense, "Is it broken?" And my answer is, "No, it's not broken." I think most observers of this Committee would recognize the bottom end of our range as 1 percent because we've been very clear about it. I believe many would say that they're not sure where the upper end is but that it's probably in the 2 to 2½ percent area. As I listen to our discussions, I think that is, in fact, not far off. So, in terms of anchoring expectations or communicating our views, somehow or another we've managed to do that, broadly speaking. So, I don't think we need to push further on this element.

Now, let me proceed to the question of announcing a target. I've noticed that a number of people did think that we'd want to announce somehow this very soft price objective. And I, in my role now as a member of the old guard would raise a number of cautionary questions that I believe we should consider at some point—if not today, maybe later. First, if we do proceed and we announce that the Committee defines price stability on, let's say, core PCE in a very tight range, I'd view that as the beginning of a soft inflation targeting regime. And I believe it would be unwise for us to think that we can stop there. I believe it would be the beginning of a slippery slope. There would then be a number of questions we'd have to answer, going forward, that I haven't heard fully fleshed out today, though some have come up. So let me just put them forward.

One, obviously, is the numerical objective for maximum sustainable growth. I think we actually have in this room right now a soft view of what we believe potential is. I'm not sure that we'll agree on that same number a few years from now. We have been quite cautious about giving an estimate of potential—giving at most a soft range—knowing the uncertainties involved in measuring maximum sustainable growth and, therefore, measuring the output gap. We've also learned from the work of Athanasios Orphanides how dangerous it could be to try to use real-time estimates of the output gap as a guide toward inflation or toward policymaking. So there's another reason why we've been a little cautious in that regard. But if we decided that we wanted to announce even a general quantitative target for inflation or a quantitative range—I prefer not to use the word “target”—I think we would be forced to explain how that view about inflation is or is not consistent with achieving maximum economic growth.

I'd say the same thing about unemployment. Yes, there are a number of reasons that Vincent has talked about that would explain why it would be unwise for us to try to be too explicit about what we consider to be full employment. On the other hand, the concept of the NAIRU [non-accelerating inflation rate of unemployment] is very much out there. There are people in this room who, in the period since I've been here, swore that the NAIRU was 5.6 percent. Those people, two months later, also would have sworn that it was 5.4 percent. So, I think the evidence suggests that if

we're going to try to quantify one element of our mandate, we've got to be very, very firm in our ability to explain why we haven't quantified the other elements.

The second question that would emerge, if we go down this path of quietly whispering a numerical goal or objective, is: What are we going to do if inflation is outside the range? And I think on that point we'd face a number of questions. How quickly are we going to move? Are the edges around that range hard or soft? What exactly does it mean when we say that's how we define price stability? Are we going to move aggressively if we're outside the range? We will give that famous economist's answer, "It depends." Are we then going to get the third question: "Why don't you give a forecast of inflation that really means something, as opposed to what you do now?" Well, then we'd have to explain that.

Don Kohn, I think, raised a very important issue. I don't think we can quietly do this without going to Congress and the Administration. As I read the information from countries overseas, in almost every case the government had a role in establishing an inflation objective. And I agree with what others have said: As soon as we go down this path, we are going to be confronted with questions from the more astute members of Congress.

And then, finally, I think the question will come up, "What is the problem?" It's a little hard to say exactly what the problem is right now. I think Cathy appropriately pointed out what a number of us have said many times, which is that inflation targeting is not inherently a bad concept; it has worked very well in a number of economies. It just happens that it may not be the right concept here.

So I would be proudly in defense of the status quo. I do think there are some things we can do to improve our communications. A number of us have suggested that looking at the Committee's behavior gives a general sense of what we find to be acceptable. We can augment that by talking about our individual views. And I hope it doesn't occur, but there may be times when we will need to talk about an unacceptable pickup in inflation, along the lines of what we did in anchoring the

bottom end. So, I think some opportunities to explain our intentions have presented themselves and we've shown that we can use them.

Finally, being part of the old guard, let me just leave, for the consideration of those who want to make changes, this thought: You may end up being right in the long term, but I would be very cautious about moving too quickly today unless you've answered at least half of the questions that I and other people have raised. Thank you, Mr. Chairman.

CHAIRMAN GREENSPAN. Governor Bies.

MS. BIES. Thank you, Mr. Chairman. On this issue, while my tenure is much shorter than yours and others around the table, I'm going to argue that I'm really in the "status quo improvement" camp today. Some of my reasons are similar to those already mentioned, but I want to throw a couple of other reasons on the table for coming to this perspective.

First, when I looked overall at the question of being public about some kind of inflation objective, I felt very strongly about a point that President Minehan mentioned, too, namely, that when you announce a target, very often you are trying to change expectations. So that announcement effect, in and of itself, is most useful in the extremes—whether inflation is too low or too high—because you want to disanchor expectations. That's what happened in the late '70s. The anchored expectation was for building inflation, so it was important to come in with the shock effect, as the Fed did in 1979, to say: "Look, we're going to wake you up. We don't want the status quo; we want to change things." But we're not in that position today. We're in a position where inflation is in a range that most of us around the table are very comfortable with.

When I think further about how we would use this approach, I get into the issue of how to define the objective I would set and the issue of a point estimate versus a range. On the latter, I come down to a point estimate, but from a different perspective from some others. First of all, as a central bank we have to be careful about our credibility. If we set an objective, the market expects us to meet that objective. And if we use a range, we're sort of caught. If the range is too wide—and I think 2 percentage points is too wide—we get into this issue of whether it is a range of

indifference. I think 1 percent inflation and 3 percent inflation—which are the extremes I've heard—would provoke a different response, depending on the economy at that point. On the other hand, if we narrow that band, then there's a much higher risk of falling outside of it, and that affects our credibility. So we'd have to amplify our announcements by various qualifying statements, and that makes me uncomfortable.

But the other reason I'm uncomfortable about setting a range for this objective—I'm putting on my risk-management hat, based on some of the debates we've had as we look at risk management at banks and Basel II and rating agencies—relates to the issue of whether this is the inflation objective for today or through the cycle. In other words, if we were sitting in a period like 2000-2001, when the economy was slow and we'd just had a terrorist attack, I think my objective in terms of inflation would be very different from—to use the example Michael gave—a period when inflation was running 3 percent for three years in a row and unemployment was sitting at 4½ percent.

That's an important distinction, and it gets to our dual mandate and thinking about the tradeoff between the two goals. Quantifying one leg of this mandate and not the other creates difficulties. To me, if we went to a point estimate, at least we could say, for example, that given the slack in the economy, we are comfortable below that objective at this point in time. Or, if we were worrying about pressures building up because of the scarcity of resources, we could say that we would not be comfortable if inflation were above that objective. It gives us an ability to express our opinion a little differently. So, I think that is something that we really need to discuss a little bit.

I also am very troubled by a couple of suggestions. I thought the staff paper was great because it got me thinking about these issues—about communicating too many objectives, too many indexes, and too many time frames. I don't have confidence that I can sit here today and say where inflation is going to be three years out, or what the objective should be, for the reasons I've mentioned. I don't know what the tradeoffs will be at that point in time. So, if we're going to do

something, an intermediate time frame of a couple years I think is sufficient; that's how long monetary policy is lagged. Going beyond that would make me very, very uncomfortable.

The last point I would make is that when we look at the way the staff laid out the issues, there are a lot of ways we can improve existing communications. Maybe we should be pursuing these avenues while we flesh out some of these issues that many of you around the table have raised. At the end of the day, speaking in plain English about what's going on today and letting the market know where we're going is what matters. It's not just the price objective that the market is looking for but information about what our actions are likely to be. I think they go hand in hand. So I think we need to consider this as part of a communication strategy and not in isolation.

CHAIRMAN GREENSPAN. Governor Olson.

MR. OLSON. Thank you, Mr. Chairman. If I may speak initially to the first question regarding my attitude toward inflation in general—and I learned about the ravages of inflation as a banker when I saw people's net worth disappear and collateral values disappear—I have a strong anti-inflation bias. And I came into this job believing that I would be an inflation hawk. When I got here, I discovered that I was pretty much in the center—not because my views had changed but because the center of gravity was more hawkish on inflation than I thought it might be. And that was both before and after President Broaddus was a member of the FOMC! [Laughter]

Coming back to Ben's opening, I believe I may be around the median on this. I have described myself as both open and skeptical on this question of inflation targeting, but I'd like to speak to the skeptical part because it relates more to my background and experience in looking at public policy issues. As for the congressional mandate that we have, several of you have commented about the need to go back and talk to the Congress, and I agree with that. But I also agree that we could probably identify a numeric target consistent with today's law.

Let me give this perspective. The mandate that we have in the law of achieving both maximum economic performance over time and price stability is a very concise goal. First, it is very clearly stated and, second, it is appropriate public policy—a unique combination. Third, it is also

respected both by the capital markets and the general public. And that important symbiotic relationship among those three groups cannot, in my view, be underestimated. There is no way, I think, that we could add a price component—a specific articulation to any one of those parts—without inviting a debate as to the appropriateness of that number.

To illustrate, let me just repeat a couple of experiences that I had, and that Susan shared with me, when we went through our confirmation process. At that time, at least one member of the Senate informed us that if they opened up the Federal Reserve Act, he would want a mandate that zero inflation ought to be in the law. This was the year 2001, and at least one member—and maybe two—of the FOMC at that point would have agreed with him that the mandate should be zero inflation. And it could have been in the law. During our hearing, which was lightly represented by members of the Senate, one of the very important and influential members nonetheless went out of his way to remind us of the importance of the second part of the mandate—maximum economic performance over time. So, I think if we tinker with any element of the congressional mandate, we would do so at our potential peril. There ought to be an important reason for moving that way, if we choose to do so.

Furthermore, in any of our communications, because of the fact that we are watched so carefully, I can't imagine that we could express ourselves or express the views of this Committee without making reference every single time to the target, whether it was a long-term or a short-term target. And I think it would invite perhaps more questions than it would provide answers for.

Now, that's the skeptical part. I am open on the issue because, as I hear representatives of other central banks around the world speak to it, they speak in very positive terms. So, I think there's good reason to be open. The second reason I'm open is because I have great respect for the judgment of many of you who have spoken in favor of inflation targeting and for the scholarship that you've put into examining this issue. But, at the moment, if we simply look at our congressional mandate, I don't think there is a unit within the federal government that enjoys the acceptance that

we have of our mandate. And I think that goes a long way toward providing us with the independence that we've enjoyed. Thank you.

CHAIRMAN GREENSPAN. Vice Chair.

VICE CHAIRMAN GEITHNER. Thank you. I think anybody who looks at U.S. monetary policy today and in the recent past would have to be impressed with what this Committee has achieved. And I can't really imagine any other regime under which I'd rather live and have to make policy. There are two aspects of our current regime that give me some discomfort. One is that I'm a little troubled by the concern that exists, not just around this table but more broadly, that there is an undesirable degree of ambiguity in our communications to the public regarding our objective for and our definition of price stability. I am uncomfortable with the extent to which the people who actually think about and make policy believe there is some ambiguity in how we define our price-stability objective. The other piece of our regime that gives me a little discomfort is how we think about the forecast and how we explain at each meeting the basis for our decision.

I think it is worth investing time and effort in thinking through those two attributes of our regime—which are the two things that in my view distinguish us from most other credible central banks in serious countries—in terms of whether we can do somewhat better than we do now and how to do that. And I, for one, would prefer to invest time thinking this through while this Chairman sits in that chair than I would deferring further consideration of these questions until some more remote time in the future.

I do think that the issue on the table, even though it's presented in a very qualified soft form, would amount to a change in the regime. I don't really think one can think about the merits—and in my view most of you addressed the merits appropriately—without a change in regime. To me this would be—just to invoke an awkward metaphor—a regime change of choice, not a regime change of necessity. And, as in the case of war, those are the kinds of decisions that we should make cautiously and only after considering very carefully the full implications of the change and how we would live within and operate in that regime. And I don't believe we're in a position at the moment

to make that kind of judgment about a regime change, despite the fact that there's a fair degree of consensus around the Committee on many of the questions that were raised.

I am uncomfortable with any change that would require us to seek the consent or explicit approval of the Administration or the Congress, even if it didn't require a change in legislation. My gut feeling is that there are huge risks for us in that process and that it would be damaging to our credibility and damaging to the independence of this institution. So I would take that step with great reluctance.

I would also want to consider very carefully the implications of this change in regime for how we communicate about monetary policy, and I do not believe that our communication policy, as it now stands, is up to that challenge. We would have to adjust our communications in some way, and I think it would take a lot of careful work to decide how we should talk about monetary policy in this new world. We should discuss fully the attributes of the communications process we would use in connection with this change before we actually do it.

I would want to be very comfortable that there is a very strong consensus—it may require unanimity—of the Committee about all of the important attributes of this basic regime and what they mean. On all the questions raised by Vincent I think we'd want to have a very high degree of consensus. Before we launch a new approach, we'd want to know that we agree on what is a credible or optimal way to proceed. I'm not sure we know what that is. But if there is an optimal way to do this, I'd want to know that the consensus is going to be close to that before I moved.

The questions that have been raised—how we talk about the time horizon, how we resolve the debate about zone versus point, how we think about where to set the upper end of the zone if it is a zone, and what our tolerance is for deviations from the upper or the lower end of the zone for long periods of time—are the sort of questions that we have to think through carefully and about which we need a fair degree of comfort that we have a common understanding of what our answers mean for monetary policy before we launch a new regime.

Let me just end with a somewhat awkward point, which relates to the succession process. We are going to have a new Chairman in the not-too-distant future. Even if there were unanimity around this table that we should go this route, I don't think it is a decision we should make at this time. I do not believe it would be fair to the Chairman's successor to bequeath to him or her this change in regime. I say that in part because it's appropriate deference to the successor, but also because operating within this regime—which I think is the equivalent of a soft, flexible, inflation targeting regime—may be difficult to do. It will put a much greater burden on communication. The challenges of how to explain monetary policy in this context will increase. Let's ask ourselves whether we would be taking a step that would be beneficial to the Chairman's successor in forcing that person to operate at the beginning with a much greater burden of communication. In that context, I think moving forward at this time may not actually help the credibility of monetary policy and may hurt it. I think it would be a challenge that would test the competence of any plausible successor, and it would take a fair amount of time for anybody to be comfortable operating in that regime.

So, I'm in a slightly awkward position, in the sense that I think there is a lot of merit in exploring an evolution in the U.S. monetary policy regime and our communication regime around these two dimensions which now distinguish us from other models out there. I think the arguments in favor of moving in this direction are reasonably compelling and have a lot of merit. But I don't believe that it would be prudent to move in that direction now, without a much more careful and thoughtful deliberation. So I would encourage us to use the next six months, year, or perhaps eighteen months to think through the implications of living within a regime like the one being considered, rather than put this in a little box and come back to it a decade from now, which is in some sense what we've done since 1996. Thank you, Mr. Chairman.

CHAIRMAN GREENSPAN. President Poole wanted to say a final word.

MR. POOLE. Thank you, Mr. Chairman. I spoke very briefly earlier and made just a few short comments. I have three points I want to make. Vice Chairman Geithner has raised one of

them. I believe this issue about succession—which I think you can argue either way, but I don't intend to argue it one way or the other—is important. The new Chairman might want to put his or her stamp on this issue of inflation targeting and communication. So that's something we should be clear about.

As for point versus range, I think in principle the long-run average should be a point or a very narrow range. There should be a broader range for the year-by-year number on the short run. It does make a difference in the long run, however, whether the average inflation rate is  $1\frac{1}{2}$  or  $2\frac{1}{2}$ . That's 100 basis points and that is quantitatively significant. If there were any quick transition of expectations from one to the other, it would be a source of disturbance. So I think that range ought to be narrow. There are various ways we could narrow it, but I think a range of 100 basis points is troublesome.

Lastly, I think there's a way of showing proper deference to the Congress on this and making some progress. We could note the fact that the CBO's [Congressional Budget Office] economic assumptions, which underlie the budget, include a CPI forecast of 2.2 percent in the out years. I think it has just been reduced to 2.2 percent; it had been at 2.5. I think we could say that our expectations and our policy direction are intended to be fully consistent with that long-term outlook. We could say that without getting ourselves tangled up into precisely what price index we're talking about. So, we could note that the Congressional Budget Office, an agency of Congress, has this rate of inflation underlying all of the long-term budget projections.

CHAIRMAN GREENSPAN. Thank you, everybody. This has been an extraordinarily interesting conversation. Let me tell you where I come out on this issue. I've been very surprised and extraordinarily pleased with our ability over the past several years to get acceptance of the notion that price stability is a necessary condition for maximum sustainable economic growth. This is not the way the Congress thinks; this is not the way the media think. I don't think this is the way the Congress and the media are going to think in the future.

I'm quite fearful, as a number of you have been, about raising an issue here which is latent. So long as we've kept it somewhat academic and not threatening, I think it has turned out to be all right. If we raise this issue about a numerical, price-related objective, I think we have to go up to the Congress. And before we do, people ought to go back and read the Federal Reserve Act, which is what Congress is going to look at in terms of the mandates they place on us. We have to go back up to the Congress, and we will subject ourselves to losing this soft agreement that we now have regarding our price stability objective because everyone is going to want to get into the act.

Michelle Smith just gave me a press release from the office of Jim Saxton, a Republican from New Jersey. It says: "The Federal Reserve reportedly will address the issue of inflation targeting in its discussions on monetary policy, which will be held today." Mr. Saxton is supportive of constructing inflation targets. If we open this up in the House of Representatives in the Financial Services Committee, I am telling you the reaction will be noisy. And I'm fearful that we will open ourselves up to all sorts of recommendations. I don't know whether we'll succeed or fail; I'm merely saying that the gains we can get from moving in the direction a number of you would like to move, I think, are modest, at best. But I don't know that. I don't think anyone can really know the answer to the question of how good inflation targeting is, has been, or is going to be, until we actually get a test with inflation going up and we observe the differences between economies that have inflation targets and those that don't.

Now, all of us around the table have opinions on this issue. Regrettably, none of us has irrefutable facts. And the reason is that there just haven't been any facts that give us the cutting edge of a conclusion. But that has not subdued the statements that we make. For example, Bill Poole was making statements and I was questioning where is the evidence. Obviously, Bill has been around for a long period of time and he has very well-considered views. If we were to dismember his intellect, we would find the reasons why he said what he said. But with all of us, this has to be a very complex process.

My real concern is more technical than political, although the political issue bothers me a great deal. I don't see how we can define a specific number for price stability, without being in a position where somebody will say when that number is not being adhered to, "Well, what are you going to do about it?" And I believe we will have a considerable problem with that, and the reason is that inflation targeting presupposes an ability to forecast, which I don't think any of us has, or can have. Take the spring of 2004, when we were sitting there with a significant acceleration in core inflation. With a targeted range for inflation, conceivably we would have breached one of the limits of the target range. And the question would have automatically arisen, "Well, what are we going to do about this?" My answer would have been—and indeed at the time was—"nothing." The reason was that I viewed the rise in prices as wholly the consequence of a rise in profit margins. But that rise in profit margins was sufficiently quick to result in a projection of core final goods prices that would be above any reasonable target we've been discussing today.

The point is this: That was a particular case where we knew that unit costs were not moving and that the rise in inflation was wholly a mechanical result of a one-shot event, which couldn't continue unless unit costs started to accelerate. We lucked out. That was a very rare event where the data were very clear. The vast majority of examples we're going to run into, if we go to inflation targeting, will be cases where suddenly price inflation is at the outer edge of the target—or indeed, has actually breached it—and other evidence on the underlying trends in inflation is not clear. We might have evidence that vaguely suggests that the labor markets are easing—let's say that initial claims have also gone up a bit—and there are contradictory notions in retail markets.

Now, one of the things that we always forget, looking back, is how little we knew at the time things were occurring or about to occur. When I read the transcripts of earlier meetings, I am surprised, because I thought we were really knowledgeable about what was going to happen. Something happens and I say to myself, "Well, we got that right; our forecasts were terrific and our insights were great." When I go back and read the transcripts, I find that it just isn't so. There's a great degree of vagueness. Go back and read the October 1979 transcripts. In retrospect, we saw

that as a time when an extraordinarily courageous Federal Reserve was coming to grips with a very difficult problem, with great and unequivocal foresight. I found reading those transcripts terribly discouraging. My view of the extraordinary institution of which we are all a part fell about 20 percent because some of the comments being uttered around this table were nonsense. The change in policy undertaken at that time turned out to be, in retrospect, one of the most extraordinarily important things the Federal Reserve has ever done. If you go from October 1979 and read the transcripts from that time on, you will see how little everybody knew or thought they knew, and it would change your opinion about a lot of things. I don't wish to downgrade the importance of the actions taken. They were very tough and they were the right actions. But to presume that there was great intellectual control over what was going on is completely undercut by reading the contemporaneous transcripts. That's just the way we are. We have a recollection of what we did which is, unfortunately, fictionalized.

I've been in this business for too long! In 1957 I had a forecast for the steel production rate. I had picked up, analytically, a big inventory accumulation in steel, which nobody else had, and that seemed to be a harbinger for the 1958 crash in the steel market. I thought that I was just terrific. And I said to everyone I talked to, "You know, we really got it just right." Then one day I went back and took a look at the actual steel forecast that my firm had made in the spring of 1957. Indeed, we had the inventory accumulation. Indeed, we had the liquidation. But whereas the ingot rate went from 100 to 50 in the real world, our forecast was 88. That's what happens to you.

The reason I want to make this point is that I believe it is very tough to implement an inflation targeting system without far greater knowledge than we have. I don't see how we can be very explicit in going with this type of approach without going to the next step. I don't know how we stop by just making an official target. I think we're doing fine when we all talk the way we have been talking. We all give our own individual opinions, which are turning out to be fairly close. I don't know a single person around this room whose inflation range I would disagree with, and I think we're doing just fine.

Let me suggest, however, that before we move on step one we go to the final step. Let's go around this room and discuss how we are going to implement inflation targeting under various potential scenarios—not where policy is, but what will we do. I suggest that because for this type of discussion what we need is for the staff to set in front of us the actual facts at a point when the inflation rate is right on our target, and then give us about 20 examples of the data we might have at that time—including the anecdotal reports and information about whether previously published data were revised or not—and try to simulate the real world. I will tell you that we're not going to know whether to move the funds rate up or down in a good number of these cases. We know the appropriate policy response only in retrospect.

I think it's important to move forward on examining this issue because we are literally split 50-50 on whether to move toward adopting a numerical price-related objective or not. We cannot have a 50-50 split, as far as I'm concerned, without carrying the discussion further. Therefore, I think we ought to set up another meeting in which to pursue this discussion. The subject matter will essentially involve the staff providing various scenarios, as I described. Let's assume that we are on a slope and that we announce that we are going to inflation targeting. I will bet politically that there is a very high probability that that will happen. I don't see how we can avoid it. And when somebody says to us, "You have a target range of 1 to 2 percent, and inflation is now at  $2\frac{3}{8}$  percent, why aren't you moving?" we won't have an answer for that. But we have to have an answer. I think the answer is the same one we would give if we had no official inflation targets. So, what I would suggest, unless I hear reactions to the contrary, is to have another roundtable. Let's have another session on this whole issue. We have plenty of time. As the Vice Chair says, nothing is running away from us. We're not going to change policy in the short run. We have a lot of time to make judgments.

I'm wholly in favor of doing the best we can for my successor because I must say that Paul Volcker gave me a platform which made my job very easy. I didn't have to come in, as he did, with the chaos of 1979. He had broken the back of inflation, irrespective of the fact that the FOMC

members didn't necessarily know what they were doing! [Laughter] The policy change Paul proposed when he came back—I think it was from Hungary—and organized a special meeting of the FOMC, was the right one. The meeting may have been incoherent, but what they did at that meeting was right, and they stuck with it. They didn't back down.

I remember a meeting in 1983, when I came down here to Washington—I was in the private sector—and the Mexican situation was beginning to brew at that time. I've forgotten exactly what the dates were, but Paul was being pilloried for hanging on. He did, and it was the right thing to do. But it took an extraordinary amount of forecasting capability, which neither he nor I had. He just had more guts than I did at that particular time. There's a lot more to this business, I think, than just the numbers we're looking at. So I suggest that we try to create the real world before we step off into a different approach to our objective of achieving price stability.

Unless somebody has objections, is it okay to go ahead in this direction? Okay, good. We'll work on the scheduling. But what I think we need from the staff are some real-life examples. I'm willing to help out because I can remember a number of occasions when what actually happened in the real world would not have been deemed a likely outcome based on the data we had in hand. That includes a wonderful experience I had in the fall of 1974 when I came here to Washington and said that there was no inventory accumulation and, therefore, we would not be subject to a severe contraction in 1975. Two weeks later the Department of Commerce revised all of its numbers [laughter], and we had a huge inventory problem.

Let's turn to Dino for his report.

MR. KOS.<sup>2</sup> Thank you, Mr. Chairman. Markets in the intermeeting period can perhaps best be described by the words "more of the same." For example, short-term interest rates continued a slow upward climb, as shown in the top panel of page 1 of your handout. Market participants are pricing in 25 basis point increments of tightening until told otherwise. The release of the minutes on January 4 added a bit of spice but did not change the contours of the outlook.

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

Treasury yields also did more of the same. The short end of the coupon curve rose gently along with deposit rates, while the 10-year yield has remained stuck in its narrow range at just above 4.10 percent. Hence the shape of the curve continued its flattening trend, as shown in the bottom left panel. But that's not the only part of the curve that was flattening. The bottom right panel graphs the 10- to 30-year spread since December. (If one wanted to be precise, one would call it the 10- to 26-year spread, given that this bond matures in 2031.) While the 10-year yield was little changed, the long bond rallied, pushing the yield down to about 4.60 percent—its lowest level since the summer of 2003. And the 10- to 30-year spread is at its narrowest level since early 2002.

The search for yield may be pushing investors out the curve. Demand for duration from pension funds may also be part of the story—part of a more general supply/demand imbalance, given that the GSEs [government-sponsored enterprises] are issuing very little at the long end and, of course, the Treasury stopped issuing the long bond in 2001. However, before this flattening is attributed to technical factors alone, one should give the yield curve a bit of respect. After all, the signal sent by the inversion in 2000 after the buyback announcements also was written off as technically induced. Maybe this recent flattening really is technically induced, but then again it may not be.

Turning to page 2, and continuing the “more of the same” theme, spreads continued to stay tight and volatilities remained low. Swap spreads narrowed slightly along with the flattening of the curve, and MBS [mortgage-backed securities] spreads stayed tight, probably helped by the low volatility in fixed income markets. Spreads on riskier assets—high-yield and emerging-market bonds—did widen slightly, as shown in the middle right panel, right after the New Year and contemporaneous with the decline in equity prices and the reversal in the dollar. Nevertheless those spreads still are at levels that are historically on the low side. Finally, implied volatilities continue to stay low across asset markets. The bottom panel graphs representative swaption volatilities, which are near historically low levels.

Turning to page 3, short-term interest rates in the euro area follow today's general theme and have moved very little. Expectations in Europe continue to be buffeted by subdued economic performance in core Europe but then periodic glimmers of optimism, as reflected in some recent business confidence surveys. One factor weighing down sentiment has been the strength of the euro, which appreciated into year-end and then sold off from \$1.36 to \$1.30, as shown in the middle left panel. The sudden reversal of the exchange rate, contemporaneous with the calendar and in the absence of any news, has all the hallmarks of a position adjustment after profit taking.

The dollar-yen rate has been more subdued—in the 103 range—perhaps on concerns that the Japanese authorities would intervene if the dollar broke decisively

toward 100 yen. The implied forward rate on the Chinese yuan calculated from the NDF [non-deliverable forward] market, as shown in the bottom left panel, came in slightly after the start of the New Year and is suggesting slightly less probability of a revaluation. However, the inflows into China continue, as shown in the bottom right panel, which graphs the accumulation of reserves by China and Japan. While Japan's reserves have plateaued for now, China and some other Asian countries have continued to accumulate reserves rapidly.

Changing pace somewhat, if you turn to page 4, I'd like to spend a few minutes discussing recent developments in Japanese money markets. Let me skip to the end of the story and draw your attention to the bottom right panel, which graphs the Japanese government bill curve as of three dates. The green line is the curve as of March 19, 2001 which was the date the quantitative easing policy (or QEP) was announced. The blue line depicts the curve as of a year ago and the red line as of yesterday. One year ago, yields out to one year were at very low levels, but they were positive. In the last few months, conditions in money markets have deteriorated, and now essentially all bills out to 12 months are at or very near zero.

Now let me go to the beginning of the story. The top left panel graphs the Bank of Japan's (BOJ) current account balances and the overnight call money rate. After implementation of QEP in March 2001, the call money rate fell toward the zero bound. As the BOJ kept pumping yen into the market, the banks became flush with cash. At first they were willing to maintain this cash as a precaution against unexpected funding needs, given existing perceptions about the weakness of major banks. However, with so much money in the system, the need to trade funds decreased, and, as shown in the top right panel, the amount outstanding in the call money market collapsed from about ¥25 trillion to about ¥5 trillion.

One might think that the demand for money market instruments would decrease as yields declined. In fact, demand has increased. First, the BOJ itself became a big buyer after QEP. Second, various market participants with investment mandates for sovereign risk continued to participate. Third, foreign banks doing dollar-yen swaps needed a risk-free claim to park the yen they swapped in. And perhaps more simply, the supply of yen swamped the available supply of low-risk investments. One result is shown in the middle left panel. The red line shows the trend of bid/cover ratios for three-month bill auctions. Even as the issue size has increased, the amount bid has been very high for several years except for a short period in mid-2003. In recent months the bid/cover has been more than 300 to 1. Meanwhile, as the condition of the banking system has improved, banks perceived less need to hold excess balances, so the BOJ has struggled to keep the current account balance in its target range.

Early in the quantitative easing period, the BOJ used financing operations. But with banks stronger and needing less liquidity, the BOJ has shifted to greater use of outright operations. It's a bit hard to see, but the blue line in the middle right

panel depicts the BOJ's holdings of treasury bills, which have actually declined in recent months. Why? The bottom left panel graphs the bid/cover for the BOJ's outright bill operations since April 2004. Bids have been falling for several months, and some recent operations have been undersubscribed.

In short, the Japanese money market has become very difficult for investors and, in fact, for the BOJ. Why do I go on at length about this? Well, for two reasons. First, Japan offers a genuine case study of monetary operations at the zero bound, which is interesting in and of itself. Second, we are directly affected by this deterioration of liquidity in the money market since the U.S. monetary authorities are a very large investor in Japanese government treasury bills. Like others, we have had difficulty investing all the yen in accordance with the current investment guidelines. Given these circumstances, unless conditions improve very soon, we essentially will have two choices: (1) to expand the range of allowable instruments for investment beyond sovereign obligations, or (2) to go out the JGB [Japanese government bond] curve. I plan to return to the Committee in March with a report on my plans to deal with this situation.

Finally, let me say a word on fed funds volatility. The top panel on page 5 graphs the daily intraday standard deviations of the funds rate going back to 1987. The trend has been toward lower standard deviations over time. As I've mentioned at previous meetings, the Desk confronted higher funds rate volatility over the summer as the market bid up rates ahead of expected increases in the target.

The bottom panel graphs intraday fed funds volatility for each two-week reserve maintenance period over the past year and notes those periods with an FOMC meeting. You will note the spike in August, which I discussed at the time. In the past few months we have observed that those dark blue bars—that is, the volatility in reserve maintenance periods with an FOMC meeting—have declined, which suggests that the market is adjusting to the Desk's operations during such periods.

Mr. Chairman, there were no foreign operations in this period. I did want to note, with Inauguration Day now behind us, that this Administration became the first one in the floating-rate era to go through its full four-year term without intervening in foreign exchange markets. I will need approval of domestic operations.

CHAIRMAN GREENSPAN. Any questions? [Pause] If not, would someone like to move approval?

SPEAKER(?). Yes. So moved.

CHAIRMAN GREENSPAN. Without objection, I think we can go to a recess at this stage. The Presidents have a dinner to attend. I look forward to seeing you all tomorrow at 8:59 a.m.

[Laughter]

[Meeting recessed]

## February 2—Morning Session

CHAIRMAN GREENSPAN. Good morning, everyone. We'll continue our meeting with the chart show. Larry Slifman, Sandy Struckmeyer, and Karen Johnson will give the presentation.

MR. SLIFMAN.<sup>3</sup> Thank you, Mr. Chairman. We'll be referring to the package of materials entitled "Staff Presentation on the Economic Outlook."

As you know from reading the Greenbook, the only material change in our forecast since the December FOMC meeting concerns prospects for the near term. So, after briefly reviewing some of the recent high-frequency indicators, I'll focus my discussion on the fundamental forces that we see driving economic activity over the next two years.

With regard to the very near-term outlook, your first chart shows a variety of data series that have informed our judgments. The upper panels highlight two "production side" indicators. As illustrated in the upper left, private nonfarm payroll employment rose 181,000 per month, on average, in the fourth quarter, a noticeable pickup from the third-quarter pace. In addition, the Board's index of industrial production continued to show above-trend gains in manufacturing sector activity. Most forward-looking indicators of production, such as the regional business surveys conducted by the Reserve Banks and the ISM [Institute for Supply Management] manufacturing report that was released yesterday, also point to continued near-term gains, although perhaps not as robust as late last year.

The data on private final sales also look quite favorable. Real PCE excluding motor vehicles (the middle left panel) rose rapidly in the fourth quarter, and motor vehicles (the panel to the right) continue to sell at a brisk pace. After the Greenbook was published, we received information on orders and shipments for nondefense capital goods. As shown by the inset box in the lower left panel, shipments excluding aircraft rose 2.2 percent and orders advanced 1.8 percent in December. These figures were about in line with our expectations. All told, our estimate of fourth-quarter real GDP growth, shown on line 1 of the table, was fairly close to BEA's [Bureau of Economic Analysis]—especially after BEA factors in an error in the Canadian trade statistics that apparently depressed estimated U.S. exports. Karen will have more to say about the Canadian numbers shortly. In any event, we see no reason to alter our first-quarter forecast as a result of the BEA's fourth-quarter GDP estimate.

Your next chart presents an overview of the forecast. As described in the first bullet of the upper panel, our forecast is predicated on a continuing withdrawal

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<sup>3</sup> The materials used by Messrs. Slifman and Struckmeyer, and Ms. Johnson are appended to this transcript (appendix 3).

of monetary accommodation over the next two years, with the federal funds rate reaching 3 percent in the fourth quarter of this year and 3½ percent in the latter part of 2006—a path quite similar to that implied by futures quotes. Regarding fiscal policy, we've reduced our deficit projection for fiscal year 2005 more than \$20 billion, primarily reflecting stronger incoming data on corporate tax receipts; the deficit in 2006 is unchanged from the previous Greenbook. But the change to our deficit estimate has virtually no effect on our preferred indicator of fiscal stimulus, FI, which is designed to capture the macroeconomic effects of exogenous policy changes. FI is expected to be neutral in 2005 and to provide only a small positive impetus to GDP growth in 2006.

Although oil prices have moved higher in recent weeks, the futures market continues to see the likely path as pointing downward from here forward, and, as usual, we have conditioned the forecast on their views. Karen and I will both have more to say about oil prices. And, as Karen will discuss, the staff expects the foreign exchange value of the dollar to drift down. As for asset values, stock prices are assumed to rise 6½ percent this year and next, which would roughly maintain risk-adjusted parity with the yield on long-term bonds, while the rate of increase in house prices is expected to slow considerably from last year's torrid pace.

As shown in the bottom panel, real GDP is projected to rise at a 3¾ percent rate, on average, over the projection period, about half a percentage point faster than our estimate of potential GDP growth. Spending on private consumption and fixed investment (line 2) is the main contributor to GDP growth, although some of the growth in that demand is expected to be satisfied by foreign producers (line 3). Domestic production is also boosted by export demand and government purchases (lines 4 and 5), while inventory investment is roughly neutral.

Exhibit 3 examines the forces that we think will be working to produce two more years of above-potential growth. Monetary policy continues to be an important factor. As shown in the middle left panel, even with the assumed policy tightening over the next two years, the real funds rate is projected to remain below its long-run average and on the stimulative side of the short-run measures of  $r^*$  shown in the Bluebook.

Returning to the bullets, other financial market conditions also are expected to be supportive. Nominal long-term rates (not plotted) have been well-anchored and are projected to be little changed over the projection period, despite the assumed rise in short-term rates. Moreover, corporate balance sheets are quite strong: Cash is abundant, and the combination of aggressive deleveraging, debt restructuring, and low interest rates has brought interest expenses relative to cash flow (the middle right panel) down to very low levels. Reflecting these developments, defaults, delinquencies, and risk spreads are quite low, and, as shown in the lower left panel, banks continue to ease lending standards.

As I noted earlier, after the rapid run-up last year, we expect oil prices to drift down over the next two years, which should be a small plus for domestic spending power and GDP growth. Turning to the final bullet in the upper panel, we estimate that the higher oil prices in 2004 reduced GDP growth by three-fourths of a percentage point last year. In our forecast, the negative effects wane to a quarter of a percentage point in 2005 as oil prices begin to recede; the projected decline in oil prices then boosts GDP growth a couple of tenths in 2006.

Exhibit 4 focuses on the household sector. Consumption outlays (the blue bars in the upper left panel) grow at a  $3\frac{3}{4}$  percent rate this year and next, a shade less than in 2004. We expect income growth (the red bars) to step up as the labor market strengthens. Moreover, household financial positions—as summarized by the financial obligations ratio, to the right—seem solid. However, the downdrift in household net worth relative to income that we project in the baseline forecast, and depicted by the black line in the middle left panel, imparts a slight drag on spending. In addition, the strength of consumer spending last year pushed the saving rate (not shown) to an unusually low level, and, as a consequence, consumer spending also is expected to be restrained a bit during the forecast period by a desire on the part of households to rebuild savings.

One risk to the forecast that we discussed in the Greenbook is the possibility of a real estate slump. In the Greenbook alternative simulation, depicted by the red line in the middle right panel, we assumed that house prices fall a little more than 10 percent cumulatively over the next two years, leaving the level 20 percent below the baseline. Such an outcome, especially if accompanied by a drop in consumer confidence, would restrain PCE and GDP growth appreciably over the next two years. But, even with the implied loss of household wealth, the ratio of net worth to income that comes out of the alternative simulation (the red line in the middle left panel) is still quite high by historical standards. Accordingly, we don't see this scenario as causing a serious debilitation of household sector financial health, on the whole.

In the housing market, the lower panels, annual single-family starts are projected to remain close to the 1.6 million unit mark over the next two years. Favorable mortgage rates are expected to provide ongoing support to housing activity in our forecast. And, as with consumer spending, solid income gains also support housing demand.

Your next chart looks at business investment. Outlays for high-tech equipment, the red bars in the upper left, are the major source of growth in this sector, reflecting an ongoing need by firms to replace and upgrade their equipment and software. Spending on non-high-tech equipment, the blue bars, grew briskly in 2004, spurred, in part, we think by partial expensing. After the anticipated “pothole” in the first quarter of this year, we expect that real outlays for non-high-tech equipment will increase at around a  $4\frac{1}{2}$  percent rate—roughly in line with their

longer-run average. Demand is supported, in part, by a shrinking margin of unused capacity over the next two years, as depicted in the panel to the right. However, as shown in the middle left panel, the rate of return on capital is projected to ebb over the next two years, which tempers our forecast slightly.

We interpret the results of the special questions on capital spending asked by the staffs at the Reserve Banks—summarized in the table to the right—as being broadly consistent with our view that this will be a pretty good year, on balance, for business equipment investment, although probably not quite as brisk as in 2004. The usual accelerator effects were the primary reason given by survey respondents for boosting capital spending this year; additionally, a sizable fraction of respondents pointed to replacement needs as an important consideration.

The remainder of the chart highlights two of the risks to the forecast for equipment spending. An upside risk that we highlighted in the Greenbook is the possibility that we have been wrong about the effects of partial expensing. If so, the alternative simulation of FRB/US, shown by the blue bars in the lower left panel, suggests that equipment and software spending could increase considerably faster than in the baseline.

One downside risk to the forecast for high-tech equipment, which Governor Ferguson noted in a speech recently, is the possibility that the pace of technical advancement in computers is slowing. As you know, the speed at which quality-adjusted computer prices fall is a rough indicator of the pace of technological progress for that equipment. The constant-quality price index for desktop computers that we use for constructing industrial production is shown in the lower right panel. The price declines are decomposed into declines that we attribute to improvements in production processes—for example, Michael Dell figuring out better ways to assemble boxes—and the price declines that we attribute to technological improvements—for instance, Intel designing better chips to go inside the boxes. As you can see from the red portion of the bars, this decomposition suggests that the rate of technological improvement for computers has slowed appreciably. A further slowing in the pace of innovation going forward would imply less spending for upgrades than is implicit in our forecast. However, recent announcements by Intel and AMD regarding introduction schedules for their next-generation chips give a hint that a return to a faster pace of technological improvements may be in train. If this speed-up in planned improvements to semiconductors is, in fact, realized, that should translate into faster technological progress for computers.

Sandy will now continue our presentation.

MR. STRUCKMEYER. Your next chart presents the outlook for the labor market. With real GDP projected to grow at slightly above its potential pace, we expect nonfarm payrolls (the upper left panel) to expand at an average pace of about 200,000 per month through 2006. As you can see, that pace is a bit above the rate of

job creation last year. Businesses reportedly have become convinced that the economic expansion is on a solid footing, and we are anticipating that they will be hiring more aggressively.

That said, we do not think firms are abandoning their focus on boosting efficiency. As shown in the upper right panel, we expect structural labor productivity to continue to rise at a brisk pace over the forecast period, albeit below that experienced from 2001 to 2003. Given our investment forecast, we expect a rising contribution from capital deepening (the blue shaded area), while the rate of multifactor productivity [MFP] growth slows from the extraordinary pace witnessed in recent years. We think a good part of the 2001-2003 acceleration reflected one-time changes in the level of productivity, as firms implemented managerial and organizational changes, rather than a speed-up in the underlying rate of technological progress. Such organizational changes are expected to diminish in importance as the upswing proceeds, and we are forecasting structural MFP growth to move back towards its longer-run average.

With this slightly slower rate of structural productivity growth and the pickup in hiring, we are projecting the level of actual labor productivity (the black line in the middle left panel) to move back into line with the level of structural productivity by the end of next year.

We also are anticipating that the more favorable labor market conditions will begin to attract workers back into the labor force. As shown in the middle right panel, the labor force participation rate is projected to move up over the projection period after the large declines of recent years. However, the progress here is only modest, and the participation rate remains below its estimated trend.

The combination of above-trend economic growth and rising participation rates is sufficient in our forecast to keep the unemployment rate (shown in the lower left panel) on a gradual downtrend, reaching 5 percent—our estimate of the NAIRU—by the end of next year. The ratio of employment to population—a measure of slack that combines movements in both the unemployment rate and the labor force participation rate—increases slightly over the projection period.

Your next chart presents the outlook for the growth in labor compensation. As indicated in the data insert in the top panel, the fourth-quarter readings on both the ECI [Employment Cost Index] and P&C compensation per hour [from the Bureau of Labor Statistics' Productivity and Cost release] came in a good bit below our expectations. Although we have heard anecdotes of shortages of some types of skilled workers, sufficient slack evidently remains in the labor market to put downward pressure on the growth of compensation in the aggregate. Given these new data, we would be inclined to shave a couple of tenths off of our compensation forecast. We expect the growth in compensation to remain at about its 2004 rate (the lines in the upper panel). One-year-ahead inflation expectations (shown in the

middle left) have drifted upward slightly in response to the increases in energy prices, and we expect this to be reflected in wage demands this year. In addition, the lagged effects of the acceleration in structural labor productivity also should result in somewhat larger gains in compensation. Moreover, the depressing effect of labor market slack (shown in the middle right panel) is projected to diminish over the projection period. These forces are manifest in our projection of a somewhat faster rate of increase in the growth of wages (shown on the lower left), but this is offset by slower growth in benefits. This slowdown reflects smaller increases in employer contributions to retirement and saving plans, after these payments surged in 2004.

Your next chart reviews recent price developments. As shown in the upper left panel, the 12-month change in consumer prices moved up sharply last year, mainly in response to higher energy prices (shown in the upper right panel). As you know, higher world crude oil prices and supply-driven fluctuations in domestic refining margins were responsible for the swings. Increases in food prices (the middle left panel) were relatively stable. As indicated in the middle right panel, the rate of increase in core consumer prices moved up to about a 1½ percent rate in early 2004 and held at about that pace for the remainder of the year. As indicated in the table on the lower left, all of this acceleration occurred in goods prices, where, in addition to a large, idiosyncratic swing in used cars, price increases were broad-based. In our view, the underlying acceleration in goods prices reflects the run-up in intermediate materials prices shown on the right, the pass-through to the retail level of higher energy costs, and the weaker foreign exchange value of the dollar.

Your next chart presents the outlook for inflation. The rate of increase in total PCE prices (shown on the upper left) is expected to slow to a 1¼ percent pace in 2005 and 2006. Energy prices (shown on the upper right) are expected to retrace part of last year's run-up over the projection period, while the rate of increase in food prices (not shown) slows by about ¾ percentage point. Core inflation (shown on the middle left) is projected to remain at a 1½ percent rate. This projected stability of core inflation reflects several offsetting factors. The slower pace of structural labor productivity is expected to result in somewhat faster growth in trend unit labor costs, and the declining margin of slack in labor and product markets is projected to exert less downward pressure on wages and prices. Offsetting these influences, the rate of increase in core, nonfuel import prices (shown on the middle right) is forecasted to fall back to zero in 2006, and the indirect effects of lower energy prices are expected to put downward pressure on retail prices.

The bottom two panels explore risks to the inflation forecast. In the higher-inflation scenario, we interpret recent anecdotal reports of worker shortages as evidence that the NAIRU is 5½ percent rather than 5 percent. In addition, we assume that last year's slowdown in the growth of employers' contributions for health insurance to 7 percent was transitory and that these payment rise 10 percent in 2005 and 2006. We also assume greater pricing power on the part of firms, which are able to pass these cost shocks through to consumer prices—holding the price

markup (shown on the lower left) at its present level. Under these circumstances, core PCE inflation (shown as the red line in the lower right panel) rises to almost 2½ percent in 2006.

In the lower-inflation alternative, we assume that the rate of increase in structural multifactor productivity growth does not slow as in the baseline forecast but holds at a 2¼ percent rate over the 2004-2006 period. In implementing this simulation, we have assumed that financial markets have already incorporated this expectation, and thus there is no additional effect on asset prices. With the faster rate of structural MFP growth boosting aggregate supply, core PCE inflation slows to 1 percent in 2006. Karen Johnson will now continue our presentation.

MS. JOHNSON. Your first international chart reviews financial developments for the major foreign industrial countries. After appreciating early last year, the nominal exchange value of the dollar in terms of the other major foreign currencies (the black line in the top left box) changed little through September. It subsequently declined broadly, as can be seen by the red yen-dollar and blue euro-dollar lines. So far this year, the nominal dollar index has rebounded about 1½ percent from its December low. It is now approximately 27 percent below its peak in early 2002.

As can be seen in the panel to the right, euro and yen three-month market interest rates have remained about flat for over a year as dollar rates have moved up with your moves to raise the federal funds rate. The ECB has left its official repo rate at 2 percent since mid-2003, and the Bank of Japan is continuing its policy of quantitative easing. The middle panels show market expectations of policy moves by those two central banks on three dates: currently and at the time of the two most recent chart shows. Three-month euro futures rates, on the left, have shifted down since June, as expected tightening has been pushed off into the future. Markets now appear to expect some upward move by the ECB around midyear. Similarly, as seen to the right, markets have pushed off expected increases in rates on the part of the Bank of Japan into 2006.

In all three countries, 10-year sovereign interest rates, shown in the bottom left panel, moved up during the first half of 2004 and then retraced. Whereas U.S. rates (the black line) moved up over the fourth quarter of last year, German rates (the blue line) continued to drop and are now below their levels at the start of 2004. Japanese ten-year rates (in red) have returned to about the level of one year ago. The retracing in long-term rates and the shift down in policy expectations reflect the slowing of economic growth abroad in the second half of last year, to which I shall return in a moment. Nevertheless, broad stock price indexes, shown to the right, resumed their upward trend over the second half of last year, after giving back some earlier gains. Although the Japanese Topix has not regained its mid-2004 level, both it and the DJ Euro Stoxx are noticeably above their levels at the start of last year.

The table in the top half of your next chart provides an overview of our forecast for real GDP growth abroad. After expanding at an average annual rate of more than 4 percent during the first half of 2004, total foreign real output (line 1 in the table) decelerated to just under 3 percent during the second half. Although both the timing of and the factors behind the “soft patches” experienced abroad differ across countries, we expect that going forward the pace of activity will generally firm across the industrial countries (lines 2 through 6) and will converge to steady growth across the emerging economies (lines 7 through 11) as the restraining forces dissipate. By the second half of this year, we project that average foreign growth will return to an annual rate of about 3¼ percent and remain near that rate over the remainder of the forecast period.

Among the industrial countries, the “soft patch” was far more evident in Japan (line 3) and the euro area (line 4) than it was in the United Kingdom (line 5) or Canada (line 6). The latter two countries have sustained moderate to strong growth in real GDP with vigorous domestic demand over the past several years. In contrast, Japan is struggling to sustain an expansion that had been promising to end over 10 years of subpar economic activity. The euro area has been expanding at subdued rates, with high unemployment. As shown in the bottom panels, business and consumer confidence in both Japan and the euro area improved sharply from previous lows in 2003 through the first half of 2004. Little or no further improvement was recorded during the second half of last year, however, raising concerns about the robustness of internal demand in these economies during this year and next. As can be seen in the right panel, through mid-2004 Japanese exports expanded strongly, supporting output growth, and, to a lesser extent, euro-area exports did the same. A pickup in the pace of global expansion should halt the downturn in Japanese exports and contribute to renewed export growth in these economies, but at rates below those experienced in late 2003 and early 2004.

Your next chart reviews developments in the emerging-market economies. As can be seen in the upper left panel, one feature of markets over the most recent months is the very low level to which spreads on emerging-market securities have fallen. Such favorable financing terms have not been observed since before the financial crises of the late 1990s. Nonetheless, issuance of new debt during the last half of 2004 has been subdued in Asia and in Latin America. As seen to the right, stock prices in Korea, Singapore, and Brazil trended up over most of 2004, although Brazil’s Bovespa has recently retraced some of those gains. The middle panels report on production (on the left) and exports (to the right) in China, Korea, and Thailand. Chinese industrial production expanded strongly during 2004 and remained brisk in the most recent months. In contrast, production has moved sideways in Thailand and Korea for much of the past four quarters, following a significant move up in the preceding half year. Chinese exports rose sharply on balance during 2004. After roughly leveling off from June through September, Chinese exports spurted in October and November; the December level was more than 10 percent above that for September. The sustained trend growth in Chinese

exports has led to China becoming a more important trading partner for a range of countries. For example, over the past several years, China has moved up to replace the United States as the number one trading partner of Japan, Korea, and Singapore.

The bottom panels indicate that production expanded strongly in 2004 in both Brazil and Mexico, although a slowing in the second half of the year is clearly evident for Brazil. Despite sharp fluctuations, on balance, exports provided positive stimulus to Brazilian output over the year, as they also did in Mexico, although to a lesser extent.

The nominal U.S. trade deficit, reported in the upper left panel of your next chart, has moved further into deficit since the last chart show. Compared with the third quarter, the most recent data for October and November report a substantial increase in imports (line 2) and essentially no change in exports (line 8). About half of the increase in nominal imports reflects the higher oil import bill (line 6), which in turn was boosted by the elevated level of oil prices. The remaining half of the increase is accounted for largely by consumer goods (line 3), with several other categories showing small positive changes. The weakness in exports, which surprised us and the markets, is not explained by a large drop in any particular category and would still be apparent even after accounting for errors made by Canadian statistical officials in measuring their imports for November—a correction to the data that we cannot yet make.

The breakdown of U.S. exports by destination is illustrated by the panels to the right. During 2004, exports to Canada and western Europe expanded strongly; the most recent observation for Canada likely will be revised up about \$4 billion when corrected data are released. Export weakness is evident in the downturn in exports to the group of countries labeled “Other Asia,” i.e., our Asian trading partners other than Japan, China, and Hong Kong. U.S. exports to those three economies were flat for most of last year.

Oil prices, shown in the lower left, reached remarkable highs in 2004 and have been very volatile since midyear. After the December meeting, I must admit, those prices moved back up, not down. We still see the strength in overall global economic activity, and thus demand for crude oil, as a significant factor in supporting oil prices at current levels. Moreover, some supply developments, including OPEC decisions and violence in Iraq, continue to influence prices. In line with the futures markets, we project that prices for global crude oil will decline through next year, although we expect that the spread between the spot price for WTI [West Texas intermediate oil] and the U.S. import price will narrow somewhat.

Shown in the panel on the right are our outlooks for core import prices (the black line) and the factors underlying their change (the bars). Core import prices were pushed up during 2004 by rising global commodity prices, as reflected in the blue portions of the bars. The red portions of the bars show the contribution of

foreign prices expressed in dollars. That contribution fluctuates with the exchange value of the dollar, which declined at times, particularly in the fourth quarter of last year, but which also rose at times, such as in the second quarter of last year. Starting next quarter, we see the upward pressure from both of these factors as diminishing greatly, with the result that core import inflation is projected to be low over most of this year and during next year. Our outlook for the contribution of global commodity prices reflects the predictions in current market futures curves. The low and steady contribution of foreign prices when expressed in dollars results from our projections of stable and low inflation abroad on average and of little change going forward in the exchange value of the dollar. In addition, expiration of the multifiber agreement [World Trade Organization Agreement on Textiles and Clothing] should lower import prices.

The consequences of our outlooks for foreign growth and prices for U.S. real exports and imports are presented on your final international chart. Real export growth (line 1 in the top left panel) is boosted this year by some bounceback from the weak fourth quarter last year. The acceleration in core exports (line 4) reflects our assumption that some of the recent export weakness will be “paid back” in early 2005 as well as the continuing stimulative effects of recent dollar depreciation. The somewhat stronger export growth forecast for both this year and next also depends upon the projected return to steady, moderate growth abroad.

In contrast, real imports of goods and services (top right panel) are projected to decelerate this year; growth of imported core goods (line 4) should slow nearly 2 percentage points, in part the result of the expiration of the partial-expensing tax provision, which had created an incentive to import capital goods in 2004. Past dollar depreciation lessens growth of core import volume as well. Real import growth should rebound somewhat in 2006, as growth of core imports responds to the subdued pace of projected inflation in import prices.

The bars in the middle left panel translate export and import growth into contributions to U.S. GDP growth. The positive contribution from exports is expected to outweigh temporarily the negative one from imports during the first half of this year. Thereafter, on balance, imports will subtract about one-third percentage point more from GDP growth than is contributed by export growth.

The U.S. nominal trade and current account balances are shown to the right. Despite the sizable decline in the dollar since its peak in early 2002, the U.S. nominal trade deficit widened by slightly more than \$300 billion from the first quarter of 2002 through the fourth quarter of last year, as deficit-enhancing factors more than offset the beneficial effects of dollar depreciation. To be sure, had the dollar not depreciated, the deficit would have widened even more. In the Greenbook baseline forecast, we project very limited further dollar depreciation and an additional \$30 billion increase in the trade deficit through the fourth quarter of 2006. Unfortunately, I have to report that, by the standard of a reduced trade deficit, U.S. external

adjustment will not even have started by the end of the forecast period if the Greenbook forecast is realized. In 2005 and 2006 the projected current account deficit widens significantly more than does the trade balance as net investment income deteriorates.

We asked our global econometric model what average rate of dollar depreciation would be required during the Greenbook projection period for the trade deficit in the fourth quarter of 2006 to be about unchanged from that estimated for the fourth quarter of last year. The dollar path needed to produce that outcome, shown in red in the bottom left panel, is one that declines at an average annual rate of 10 percent.

The panel to the right reports consequences of the weaker dollar path for the trade balance and the current account balance. By construction, in the alternative of a weaker dollar, the change in the trade balance over the forecast period is about zero. However, the current account balance nonetheless continues to deteriorate. In fact, the weaker dollar improves the current account deficit by less than the improvement in the trade balance, primarily because higher interest rates, which the model generates as it uses a Taylor rule to guide monetary policy, result in even greater declines in net investment income. This simulation suggests that even were the dollar to depreciate quite sharply, it is likely that over the forecast period the trade deficit would remain near its current size and the current account deficit would widen further. Sandy will now conclude our presentation.

MR. STRUCKMEYER. The final chart presents your economic projections for 2005 and 2006. As shown in the upper panel, the central tendency of your forecasts for real GDP this year is  $3\frac{3}{4}$  to 4 percent. The unemployment rate is projected to be  $5\frac{1}{4}$  percent, while the central tendency for core PCE inflation is  $1\frac{1}{2}$  to  $1\frac{3}{4}$  percent. As indicated in the lower panel, you expect real GDP growth to slow to  $3\frac{1}{2}$  percent in 2006 and the unemployment rate to fall to between 5 percent and  $5\frac{1}{4}$  percent. For core inflation in 2006, the central tendency remains at  $1\frac{1}{2}$  to  $1\frac{3}{4}$  percent. Mr. Chairman, that completes our presentation.

CHAIRMAN GREENSPAN. Do you have a forecast of current account balances for the world, including the discrepancies?

MS. JOHNSON. I do. Do you want me to give you some figures?

CHAIRMAN GREENSPAN. I'd actually like to see the whole table. Does it have data for individual countries?

MS. JOHNSON. We have several tables that cover all of the countries we forecast and then we have the global—

CHAIRMAN GREENSPAN. Could somebody just bring it around to me rather than have you read it? Other questions for our colleagues? President Minehan.

MS. MINEHAN. I was a little surprised at the forecast of no decline in the value of the dollar. Your alternative simulation seems as though it's relatively close to what we've experienced since 2002. You had mentioned that the dollar is down 27 percent since the peak in 2002. That's roughly three years, and that's not terribly different from 10 percent at an annual pace, which is what I understood you to say in talking about the simulation. Maybe I understood you wrong.

MS. JOHNSON. No, no. You might think of our Greenbook forecast for the dollar as a technical assumption. We have adopted a "random walk" frame of mind when it comes to forecasting the dollar, based on two things. First of all, the research that we ourselves have done in the articles that members of the Board staff have written shows that a random walk assumption outperforms any structural model over long periods of time. Moreover, the profession has engaged for years in trying to forecast the dollar. And the random walk—that is, no change from today—in a statistical sense outperforms on average any of the alternatives that have been suggested.

One possibility, an alternative assumption, might be to go with the implied futures rates that come out of trading. But those rates have been shown to be particularly bad forecasters. So there's no real empirical support for making that alternative choice.

We used to attempt to infer the consequences of what we knew—the "maintained" assumption of the federal funds rate, so to speak. That was based on the view that we knew something about the future course of policy that the market didn't know; that is, we were conditioning the forecast on something that the market didn't necessarily know, and we thought we would sense other forces, if you will, at work. So we had a somewhat more activist forecast for many years until we were wrong for such a long time that we gave up, basically.

It troubles me in some sense that our forecast suggests that import inflation will drop from being a fairly significant number to virtually nothing—tomorrow—and will continue that way throughout the forecast period. That result is very much affected by this maintained assumption that

the dollar isn't going to change much more. So my explanation is simply that we try to make that assumption very explicit to you. You understand that we have not taken a position on changes in the value of the dollar, which very much determines our import price forecast. And we let it go at that. We do not take a position on the dollar because our actual ability to tell you when the dollar is going to go up and when it is going to go down is just nonexistent.

MS. MINEHAN. So, depending on how one feels about the likely path of the dollar, there is some definite sense of risk to the forecast associated with that.

MS. JOHNSON. Yes. But I would say that over any short time horizon, like the next two years, there's as much upside risk as downside risk. The dollar rose substantially in the first half of 2004; it rose in the early part of this year. Even though many of us have argued at great length that there are reasons to think that over time the dollar has to go down, for any period you care to name—for a year or even as long as two or three years—it could well go up before it goes down.

MS. MINEHAN. I have one further question. I've been surprised to read in some of the market publications—the newsletters from J.P. Morgan and so forth—that a number of market participants appear to be getting more convinced, based on their reading of the political tea leaves, that a move on the Chinese currency is going to occur sooner rather than later. Have we thought about the implications for this forecast if something like that happens?

MS. JOHNSON. We haven't taken the step of, say, putting that into an alternative simulation in the Greenbook, which maybe we should do. But we have been thinking about the issue and what alternatives might be good—that is, effective and productive—and what alternatives might be counterproductive. There was a time about three weeks ago when the amount of chatter about the Chinese regime was very elevated. And there were some remarks that came out of the meetings in Davos, just five days ago, that made it seem as if something was imminent. And then the talk would subside and it would go quiet.

Do I think that nothing is going to happen in this regard between now and the end of 2006? Personally, my answer would be “No, I don't.” I think something will happen before that. But we

would have a very hard time specifying exactly what will be done or when and putting it in the baseline forecast.

MS. MINEHAN. Do you have a bigger-than-a-bread-box feeling about how that will work?

MS. JOHNSON. I could make it bigger than a bread box, depending on whether the rest of Asia reacts in some explicit manner. I say that because the pegging to the dollar is a device for stabilizing exchange rates among the Asian trading partners. So if China moves in certain ways, that might trigger a reaction on the part of its trading partners. But I could imagine some steps that China might take that wouldn't do that.

Now, I think we can, and probably should, take a chance and commit to writing what we think those relationships are and what the implications might be. If all of the Asian currencies move, I think you would see some consequences. If China revalues by 5 percent and pegs again and nobody else does anything, I think it will be almost inconsequential. It will be politically helpful to a variety of people, but economically I don't believe it will mean a lot. If China not only moves but also floats—if it defines a band in which the currency will fluctuate or goes to a weighted average or, in other words, introduces the potential of movement going forward—and that triggers a comparable decision on the part of other Asian countries, it's a different story. If the currencies of Asian countries that now in one way or another stabilize their exchange rates with China's become more flexible vis-à-vis their bilateral rate with the dollar, I think the implications could be greater.

MS. MINEHAN. Thank you.

MS. JOHNSON. I guess I will commit to trying to do some sort of analysis of this issue or an alternative simulation in the next Greenbook. I think that would be a helpful thing to do.

MS. MINEHAN. Maybe not on my say-so alone.

CHAIRMAN GREENSPAN. Governor Gramlich.

MR. GRAMLICH. Just as a derivative question, relating to chart 13, Karen. You were commenting on the disappointing performance of exports, and one of your stories was the rather

sharp downturn in exports to “Other Asia.” Could you elaborate on that a little bit? Is that, in your view, importantly or unimportantly affected by the Chinese peg to the dollar?

MS. JOHNSON. I don’t know that I would link it to that particularly. I think it is in part, but I can’t tell you how much, a result of the integration of trade—or reintegration of trade—that’s going on in Asia, so that exports that previously came to us from Japan now pass through China for some final stage of processing. There’s a sense in which the gains that China is making are coming at the expense of other Asian trading partners and are not of much significance. On the other hand, if the China and Hong Kong line had gone up at the same time that this “Other Asia” line went down, I think I would have had to say that I shouldn’t show them separately but should add them together or something. But it did not.

I’d point more to the high-tech sector as a factor. In terms of the risks to this global forecast, we have oil prices, our basic standard risk. But the issue of whether the high-tech sector is going through a temporary inventory lull and is going to rebound or not is the biggest question mark for the Asian emerging-market countries. I think that accounts for the falloff in trade at the end of last year—that is, the falloff in exports more broadly and in IP [industrial production]. I think that’s all wrapped up in the high-tech question.

CHAIRMAN GREENSPAN. Governor Bernanke.

MR. BERNANKE. Does your simulation of the effect of the 10 percent decline in the dollar include the effects on foreign countries’ income from facing a more appreciated exchange rate?

MS. JOHNSON. Yes, we did that in our global model. And those countries—given that prices in their currency for the goods they sell to the United States go up because the dollar is depreciating—actually earn some income, which is then spent on U.S. exports. So in that sense it accounts for all the money that is spent on trade. It goes somewhere; it feeds back to the model.

MR. BERNANKE. It also affects their import demands.

MS. JOHNSON. Yes, that’s what I’m saying.

MR. BERNANKE. That’s from the income effects.

MS. JOHNSON. Yes. Now, the model has the usual Houthakker and Magee asymmetry in it, but the move down of the dollar is very stimulative. In our model it would be a very stimulative shock to the United States, and it would be a contractionary shock to almost all of our trading partners.

MR. BERNANKE. The reason I ask is because your simulation raises the question of whether the derivative is the right sign on the current account with respect to the dollar. Given the effect that the falling dollar has on our interest rates and, therefore, on our capital income payments, there seems to be so very little effect on the current account from the weakening dollar.

MS. JOHNSON. Right, but because of the interest rate effect. Now, it's possible that the model doesn't fully capture valuation effects. In the direct investment account, the fact that the dollar is depreciating means that every euro earned by a U.S. subsidiary is now worth more dollars rather than the same number of dollars. So this current account effect may be too conservative. It's possible that the current account would improve more via that valuation effect than the model is fully able to capture.

CHAIRMAN GREENSPAN. Why can't you capture it? It seems like a straightforward—

MS. JOHNSON. Well, our people do their best, but the financial flow part of the model is less fully articulated than is the real side of the model.

CHAIRMAN GREENSPAN. It's not that you don't have the data. You do.

MS. JOHNSON. Yes. It's just a question of how many equations—or how many independent variables—you can actually manage.

CHAIRMAN GREENSPAN. Any further questions for our colleagues? If not, who would like to start the Committee discussion? President Moskow.

MR. MOSKOW. Thank you, Mr. Chairman. The story from the Seventh District is much the same as last time. We're seeing a broad-based improvement in business conditions. I would characterize it as solid growth, but not spectacular. Most of the sectors that were strong last year continue to do very well and expect good results for 2005. These include steel, heavy trucks,

construction machinery, and commercial printing. A number of firms in these industries have been able to raise prices without seeing a reduction in their order backlogs. We've also heard some upbeat forward-looking reports on commercial aircraft. And agriculture has been very strong. Farm incomes were up sharply last year, and that has been supporting big gains in the sale of agricultural equipment. We also saw the largest annual increase in District farmland values in 15 years.

On the other hand, the outlook for the Big Three automakers, whose operations and those of their suppliers are heavily concentrated in our District, is not so good. Most analysts expect light vehicle sales to be similar to last year, but the Big Three are concerned about losing even more market share. And their profit outlook is not good; we continue to hear that they have significant cost disadvantages relative to the transplants. Moreover, foreign nameplates have built out their product lines to the point where the Big Three face stiff competition in just about every market segment. One result of the relatively poor performance of the Big Three is that Michigan now has the highest unemployment rate in the nation.

MR. GRAMLICH. You got to be first in something! [Laughter]

MR. MOSKOW. Actually, Illinois is leading the Big Ten in basketball. [Laughter] They are undefeated so far.

On the price front, there's more talk that higher costs for plastics and other energy-related inputs are working their way downstream, but we're certainly not hearing widespread reports of major price increases.

With regard to labor markets, the two large temporary staffing firms that we speak with regularly continue to report roughly 10 percent overall growth relative to a year ago, with demand for skilled workers rising fastest. Like us, they have been expecting a period of more robust employment growth. But the further we get from the recession, the more they are becoming resigned to the idea that the growth rates we've seen over the last year may be as high as we'll get in this cycle. The president of one of the temp firms made an interesting observation about the reluctance of businesses to hire. He said: "Everybody still has a reason to be cautious, but lately the

reasons are industry-specific.” This is an improvement from a year or so ago when many firms reported being worried about the strength of the overall economy. His observations pretty much match my impressions. Things aren’t exactly roaring, but few businesses regard the expansion as fragile.

Turning to the national outlook, once again the data we’ve received since the last meeting have not materially changed our outlook for 2005. We continue to expect that output will expand at a rate somewhat above potential and that there will be little change in core inflation. I think the alternative simulations in the Greenbook did a good job of laying out a number of the risks to the forecast. Overall, I think these risks are balanced.

The “higher long-term interest rates” simulation did give me some pause, especially because of the talk that foreign investors may be revising their thinking about U.S. securities. But I remain concerned about another risk that we talked about last time, namely, that, instead of some appreciable slack remaining in the economy, we may already be essentially at potential or approaching potential. This view was raised by some of the participants, albeit a minority, in the meeting we had last week of our academic advisors and Chicago-area business economists. When asked about the course of policy going forward, there was a roughly even split between those who thought that the path implicit in futures markets was about right and those who thought we should be raising rates at a faster pace. My own view is that we will probably have to raise rates this year to levels that are higher than those expected by futures markets. As we all know, we will face communication challenges as the year proceeds. It’s probably not critical today, but it will become more so as we move through the year.

CHAIRMAN GREENSPAN. President Yellen.

MS. YELLEN. Thank you, Mr. Chairman. The Twelfth District economy continues to expand, posting growth in line with that of the nation. Consumer spending remains strong, led by gains in travel, services, retail goods, and especially housing. Businesses have also been spending, and our contacts expect to increase investment in coming months.

The weaker dollar continues to benefit District exporters who report booming demand for their products. Although international trade volumes remain high, increased hiring and around-the-clock work schedules have cleared out the backlog of ships at our ports. Some bottlenecks remain in the ground transportation networks as a result of storms, mudslides, and infrastructure problems but these, too, are waning.

Turning to the national economy, recent economic data have been encouraging, raising my confidence that the expansion has found a secure footing. The December employment report was by no means spectacular, but it strengthened the impression that the labor market has firmly established a pattern of moderate improvement. In terms of the outlook for the real economy, I'm generally in agreement with the Greenbook. But I think it's important to emphasize that this forecast, which calls for growth only moderately above potential with a very gradual diminution of the remaining labor market slack, depends on a very gradual pace of monetary tightening. The Greenbook incorporates only three more 25 basis point increases in the funds rate this year. Moreover, even with this modest tightening, I consider the Greenbook optimistic in expecting longer-term interest rates to remain at their present levels. In my judgment, the risk with respect to longer-term yields is asymmetric. Should longer-term yields increase, growth could fall well short of the Greenbook projection, as shown in an alternative simulation.

Turning to inflation, the data received since our December meeting, particularly the CPI and the ECI, have been favorable. The forecast for a rise of about 1½ percent in the core PCE price index in 2005 strikes me as very reasonable. We're all aware of the sources of risk in this outlook, including the future paths of the dollar and oil prices, the currently high markup of prices over unit labor costs, trend productivity growth, and, of course, the degree of slack left in the economy.

In December I argued that the risks to inflation from productivity developments were reasonably well balanced. I hold roughly the same view on the risks emanating from labor market slack and would like to focus the remainder of my comments on this issue.

A considerable body of research—most conducted within the Federal Reserve System—has examined the possibility that the last recession and recovery were characterized by unusually large structural shifts, resulting in an exceptional degree of mismatch in the labor market. If an unusually small fraction of the currently unemployed are qualified for existing or emerging job vacancies, the true degree of slack in the labor market is overstated by measured unemployment. In effect, the NAIRU has risen. This possibility motivates one of the alternative simulations in the Greenbook.

At the AEA [American Economic Association] meetings in Philadelphia last month, I chaired a session in which four teams of Fed economists subjected this structural-shifts hypothesis to close scrutiny. I emerged from this session a skeptic. I see this recent research as casting considerable doubt on the hypothesis that the jobless recovery was a period of pronounced economic restructuring. In fact, the consensus of the session was that sectoral reallocation has probably been running at roughly normal levels for our dynamic economy.

The finding of unusually large sectoral shifts is based on the behavior of several nontraditional measures of restructuring. In contrast, such traditional measures as the dispersion in industry employment growth rates revealed the last recession and jobless recovery that followed to be a period of low, not high, sectoral reallocation. The problem with traditional measures is that they may confound cyclical with sectoral changes. The alternative restructuring measures, however, turn out not to be robust to minor changes in the time period studied and the methodology used.

One sign that mismatch is not unusually high, at least during the recovery period, comes from data on job creation and job destruction. In 2003, for example, total job reallocation—defined as the sum of job creation and destruction—stood at its lowest level in the last decade for which data are available. Another sign that mismatch is not especially high comes from the Beveridge curve relating unemployment and job vacancies. A shifting out of the Beveridge curve, signaling higher levels of vacancies coexisting with any given level of unemployment, would provide evidence of increased mismatch. Using a new measure of job vacancies that adjusts for well-known biases in help-wanted advertising, staff at our Bank, however, found no evidence of such an outward shift.

If skill mismatch had intensified, we might also expect to see diverging unemployment rates and compensation paths for workers of different skills. However, analysis by our staff shows that since the onset of the recession, the unemployment paths of less- and more-educated workers have been similar, and the change in compensation growth for lower-skilled occupations has been at least as rapid as for occupations requiring higher skills. These findings align with reports from our contacts who tell us that for the most part they're able to hire workers at all skill levels. Even in markets where workers are harder to find, our contacts report little difference in hiring difficulty or compensation growth by skill.

With respect to the introduction of labor-saving technologies, our sense is that such innovations are affecting the entire skill distribution. For example, reports from two of our contacts, a lawyer and a farmer, illustrate this point. We were told that the law firm had replaced skilled legal workers with software designed to search for criminal evidence in e-mail files. The farm introduced machinery that reduced the number of field workers needed to harvest row crops from 400 to 40. So, my bottom line is that I do not think the evidence supports the case that NAIRU has increased due to an unusual degree of mismatch in the job market.

Turning finally to policy, I think it makes sense to remove a bit more accommodation at this meeting, but I do think we're reaching a point where relatively soon we will need to begin to slow this process down.

CHAIRMAN GREENSPAN. President Santomero.

MR. SANTOMERO. Thank you, Mr. Chairman. Economic activity in the Third District continues to expand at a moderate pace, but there is some variation across the three states of our District. Leading indicators are signaling continued solid growth in New Jersey and Delaware but more modest growth in Pennsylvania. Payroll employment in our states grew at a 1¼ percent pace in the fourth quarter of last year, down from an unsustainably strong pace earlier in the year. Pennsylvania continues to have the slowest job growth and the highest unemployment rate among the three states in our District.

Our business outlook survey indicated a considerably slower pace of expansion in regional manufacturing in January. The general activities, new orders, and shipment indexes all fell to their lowest levels in 18 months. This is something to watch. The deterioration is not just localized in Philadelphia. I note that New York's manufacturing survey also weakened in January. At the same time, it's important to remember that these are just one-month readings, and other indicators in the January survey are less negative. For example, current and future employment indexes in our survey are near their highest levels in the current expansion.

Turning to future capital spending in the District, we participated, as did the other Districts, in the Board staff's survey. Our results are quite similar to the results for the nation as reported in Larry Slifman's memo. On a related topic, all of these results—in addition to the comments from firms in our District over the past several months—suggest that the expiration of the partial-expensing provisions had a smaller impact on firms than is assumed in the baseline Greenbook forecast.

Turning to our economic intelligence on other sectors, there appears to be little change. Consumers continue to spend at a moderate pace. Holiday sales in the region generally met expectations for a good, if not spectacular, showing. As was true in the nation, sales of luxury items showed the strongest performance, with year-over-year current dollar gains greater than 10 percent. Most of the other retailers reported year-over-year increases of around 3 percent.

As I reported last month, nonresidential construction in our region remains soft. The office vacancy rate in the Philadelphia metropolitan region has remained at about 16.5 percent since the end of 2003, although we are seeing some net absorption over the past year. The construction of two new office towers will increase available space significantly, by about 5 percent. Meanwhile, residential construction has remained healthy, but it is down from its peak. House appreciation continues, especially on the New Jersey shore, where prices were up over 20 percent in the past year.

In summary, the economic expansion continues at a moderate pace in the Third District, and the outlook among business contacts in our region remains positive.

My outlook for the nation is similar to that of the Greenbook, with real growth averaging about  $3\frac{3}{4}$  percent over the next two years. Like the Greenbook, we expect consumer spending to expand at about that pace as well. This consumption forecast reflects our view that the current personal saving rate, despite its low level, is not likely to lead to a reduction in household spending. As we all know and as was mentioned here today, the personal saving rate averaged 1 percent last year. That compares to an average since 1959 of over 7 percent.

There has been some concern expressed that consumers will hold back on their spending as we withdraw monetary stimulus, but a Philadelphia staff analysis casts considerable doubt on this outcome. That study points out several factors that warrant our attention. First, measured personal saving excludes some investments, such as investment in human capital and capital gains, therefore underestimating the true saving rate. Second, our real-time data series show that personal saving rates have been revised upward systematically, tending to wipe out low measured saving rates in the past. Since 1965, the mean revision has been about  $2\frac{1}{2}$  percentage points. Third, the permanent income hypothesis suggests that a low saving rate may signal expectations of faster future growth in labor income. Moreover, there is no significant empirical evidence that a low saving rate forecasts slower consumption growth.

While our forecasts are similar to the Greenbook's with respect to consumer spending and total GDP, there are some key differences. As I've already mentioned, we expect less of an effect from the expiring tax incentives on business investment. So we see stronger growth there, and our pattern of growth is smoother than in the baseline forecast in the Greenbook. We also anticipate a large depreciation in the dollar for reasons we talked about today; that discussion was helpful to me in understanding the Greenbook forecast. Thus, real net exports do not make much of a negative or positive contribution to growth over the next year in our forecast. Our larger depreciation of the dollar, coupled with less slack than in the Greenbook baseline, leaves us to project a slow rise in core PCE inflation over the forecast horizon to  $1\frac{3}{4}$  percent for 2005 and 2 percent for 2006. This contrasts with the Greenbook's forecast of a slight deceleration in inflation. Both the Greenbook's

and our forecast are predicated on maintaining our strategy of gradually removing policy accommodation to bring policy back to a more neutral stance. Nothing in the current conditions or in the economic outlook suggests that it's time to revise that strategy.

We are at a point in the cycle where I think it is particularly important that we remain vigilant and forward-looking with respect to inflation. The recent acceleration in core CPI inflation means that it is no longer in the lower part of the acceptable range, in my view. This acceleration has not been large, and it has not yet shown up in the core PCE inflation. Nonetheless, both oil prices and the dollar pose an upside inflation risk. Thus, it seems prudent for us to remain vigilant and to continue on our upward path for the funds rate.

CHAIRMAN GREENSPAN. President Minehan.

MS. MINEHAN. Thank you, Mr. Chairman. The New England economy seems to be growing at a slow but steady pace and weathering what so far has been a pretty snowy winter. The basic data are pretty good. In all states of our region, except Massachusetts, employment has been growing steadily at about the pace of the nation as a whole. Consumer and business confidence and spending are up. Manufacturers have a positive, though I wouldn't say excited, perspective on 2005, and coincident and leading economic indexes suggest economic activity is expanding and will continue to grow over the next six months.

Over the longer term, there are a couple of concerns I think are worth mentioning. The first of these involves energy prices. Not surprisingly, given the weather and oil prices, fuel and utility costs in the Boston CPI region have risen at a rate of about 16 percent on an annual basis. This, however, looks like it might not be just a short-run effect but could involve higher energy costs over the longer term. Indeed, the Federal Energy Regulatory Commission in a recent report highlighted New England as at risk of energy shortages if extended and serious weather problems occur even this winter, or if they don't, with some normal growth pattern over the next couple of years. Apparently, constraints related to natural gas—both the supply of and the ability to move natural gas—combined with the increasing reliance of the region on gas-powered electrical generation, have

made New England vulnerable to permanently higher energy costs or debilitating power outages. Neither of these would bode well for continuing rapid rates of growth in the region.

Second, while jobs in Massachusetts declined in November and December and the rest of the region grew moderately, the unemployment rate fell to 4.3 percent, the lowest of all the census regions. The number of unemployed actually fell by 20 percent. This is because New England was also the only part of the nation to experience a decline in the size of its labor force over the past year. Workers either are leaving New England and migrating to other parts of the country or dropping out of the work force, or both. Again, this won't bode well as firms begin to look for people to hire on a broader scale than they may be doing now.

Anecdotally, all of my contacts see cause for optimism in the current economy. Last year was a good year and, for some industries, a great one. So, many expect 2005 to show some moderation. Contacts remain concerned about the geopolitical situation. They're concerned about fiscal and trade deficits, but it's the impact of their continuing efforts to implement Sarbanes-Oxley financial controls that really worries at least some businesspeople. Apparently, the intensive effort to implement all that is required and the costs in terms of fees paid to accountants and other consultants have been a matter of major concern.

On the national economy, our forecast and that of the Greenbook continue to look very similar. In fact, the differences are so small now it's not really worth talking about them. As I see it, incoming data since the last meeting all suggest that the economy has a reasonable amount of forward momentum. I'd like to see further confirmation of employment growth, but business investment, consumer spending, homebuilding, and motor vehicle production all indicate that the first part of 2005 could be even a little stronger than we anticipate, assuming the November trade deficit was a bit of an anomaly. Inflation seems to have edged off, at least when you look at the core CPI. It is a percentage point higher on a year-over-year basis than it was a year ago, but that pace of change seems to be slowing; and certainly the core PCE has leveled off at 1½ percent or so. The current year is shaping up to be one in which resource utilization gradually increases, wage growth

becomes a bigger factor in supporting consumer spending, and business production, investment, and profit all remain pretty solid.

So where are the risks? Well, rising inflation could be one risk, as many commented at our last meeting. There are good reasons, I think, to expect inflation and expectations of inflation to remain well behaved over the next year or so, but they are all based on the variety of ways we have of assessing what is not directly observable, and that's the amount of slack in the economy. These measures are credible and reliable, but it's also wise to be cautious about how accurate they can be in an environment of expected solid growth. Excess capacity could be used faster than we expect, or we could be starting with less of it. It's hard to see evidence of this as yet. So I viewed the Greenbook alternative that combines rising compensation costs and a flat markup as providing good food for thought on what the mechanics of an inflation surprise might look like.

I also remain concerned about an increased risk of financial fragility. The country's trade deficit is alarmingly large, and overly expansive domestic economic conditions will only make that worse. Fiscal deficits that show signs of growing under reasonable estimates of near-term tax and spending initiatives could add to the mix. Financial markets, as well, are very accommodative, despite some bounciness in equity markets, with narrowing credit spreads and abundant liquidity to bankroll large mergers and spur the ever-expanding hedge fund industry. Low interest rates all by themselves certainly are not a problem. But if you combine those rates with lots of liquidity, low risk premiums, and what consumers, investors, and businesses are incited to do as they reach for return, there could be a problem. In my view, these risks all suggest that the process of returning policy to a less accommodative place is exactly right. Thank you.

CHAIRMAN GREENSPAN. President Guynn.

MR. GUYNN. Thank you, Mr. Chairman. As was the case at the time of our last meeting, I think we should be pleased with the way things are unfolding. Output continues to expand at a good and sustainable pace, we're getting solid investment spending to complement sustained consumer

spending, we're getting sufficient job creation to at least gradually push unemployment lower, and inflation remains at a low level.

What we're seeing in our Southeast region certainly confirms and helps to explain the favorable picture we see at the national level. Most of the key sectors of our regional economy, including consumer spending, housing, manufacturing, retail, tourism, and auto sales, remain positive. We found it encouraging that a large share of investment spending by businesses was reported to be attributable to the anticipation of increased sales. Other planned investment spending is being attributed to a desire to upgrade technology and to continue to improve competitiveness and cost efficiency. Consumer spending in our region continues to be strong. Tourism has been especially positive. Florida theme parks are once again full to capacity, hotel bookings are up, and hotel room tax collections are 8 percent ahead of year-ago levels. Housing growth in our region has eased a bit, though it still remains at a high level.

The good pace of overall activity has contributed to new regional job creation. While having slowed somewhat in December, job creation has been sufficient to move ahead of the peak experienced just before the onset of the recession. Our District added some 264,000 jobs last year, an increase of 1.4 percent. Florida led the District, creating 172,000 new jobs. Since the end of the recession, Florida has accounted for 27 percent of the net new jobs created in the entire country. The District unemployment rate, at 4.9 percent as of the end of December, remains below that of the nation.

Finally, I continue to be watchful for imbalances and their implications for inflation. At our last board meeting, our directors provided additional reports of continued sharp run-ups in housing prices in selected areas, especially in some Florida real estate markets. One director who manages a large trucking firm noted that equipment shortages in trucking are leading to frequent price increases. She reported that fuel surcharges are also being readily passed on and that rationing of transportation services is becoming more widespread. Other directors who are large shippers

commented that railroads are beginning to decline to renew some contracts to ship certain bulk chemicals, which are less profitable than containers and piggyback loads.

As for policy, nothing in the data from either our region or at the national level suggests to me that we need to change the path that current policy is on in terms of either speeding up or slowing down the pace with which we're removing the substantial accommodation that remains. Markets are expecting further moves. And our models are suggesting that even with several more increases in our fed funds target rate, the real economy should expand between 3½ to almost 4 percent next year. That modeling work suggests that unemployment should continue to edge down and that the CPI should average between 2½ and 3 percent. Of course, the risks to these forecasts that people have already talked about are not insignificant. But I'm comfortable with the path we're on, at least for now. Thank you, Mr. Chairman.

CHAIRMAN GREENSPAN. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. My District report will balance out President Guynn's report, because economic conditions in the Fourth District have not changed very much since December. As suggested by our Beige Book report, it appears that our region's economy is still not advancing at quite the pace as the rest of the country.

That said, most of my business contacts are cautiously optimistic that the country's economy will see solid growth in 2005. In what might be a good sign for job creation, for the first time since I've been in this job I'm hearing less emphasis on productivity gains as an explanation for limited hiring. I am finally hearing some mention of staff additions, although they are focused in particular industries and are not widespread. These comments are consistent with GDP expansion in the 3½ to 4 percent range, modest gains in employment, and relatively robust capital spending, as contemplated in the Greenbook baseline projection.

My directors and my other business contacts continue to comment on high input prices, especially prices of raw materials, and they comment on the desirability, or even necessity, of maintaining their margins. They seem to be having success in passing on some of the price

increases to their customers, although it remains difficult to quantify how much of this talk is feeding into retail prices. Nonetheless, from my perspective, the flat markup scenario that is reported in the Greenbook is a very important risk, even though I do believe that the baseline projection is the more likely scenario.

We've just ended a year in which the realized rate of headline inflation was higher than I think is acceptable going forward. Of course, as has been mentioned, there were special pressures from the energy sector that contributed to that, and I share the opinion that those problems are probably behind us. And I am heartened that we have managed to emerge from the year without deterioration in the private sector's inflation expectations. Nonetheless, when asked what will turn out to be the biggest economic surprise in 2005, the Blue Chip forecasters put higher-than-expected inflation at the top of their list.

I'd like to be sure that we don't contribute to a continuation of last year's price level performance by unintentionally setting the fed funds rate at a level that's too low. I do like the fact that we've been able to remove our accommodation at a measured pace in moving the fed funds rate back toward a more comfortable zone. If we stop short in adjusting the fed funds rate now, we could find ourselves losing the ability to continue with the moderate steps that we've had the luxury of implementing so far. Over the past few months, many of us have noted that what we ultimately want is to move the fed funds rate somewhere back to a neutral neighborhood. Given the imprecision of this neutral concept, it's a pretty big neighborhood, and I'd prefer not to be at the lower end of that range. Thank you, Mr. Chairman.

CHAIRMAN GREENSPAN. President Stern.

MR. STERN. Thank you. The broad-based expansion in our District continues. Employment gains have been modest but persistent. In talking to employers, the general impression I get is that they are finding labor availability to be ample, although occasionally they've expressed some concern about the shortage of particular skills. At the same time, they have mentioned some apprehension about labor supply going forward. And I've noticed that a couple of large employers

recently have returned to running job fairs—something that we haven't seen in recent years. Outside the labor market, the manufacturing sector in our District is strong. Housing continues to operate at a high level. Mining, energy, and agriculture, outside of the areas that were affected by drought, all had good years and appear to be in good shape.

We recently queried some of our directors and other business leaders about inflation, particularly inflation over the past three months—essentially, the fourth quarter of last year. The reports we got back were uniformly along the following lines: There has been no detectable acceleration of inflation, and, if anything, there has been a diminution of inflationary pressures.

As far as the national economy is concerned, my forecast is very close to the central tendency reported in the chart show. I took the tenor of the chart show to mean, as I thought about it, that there's not really very much wrong with the economy at the moment—depending on the significance one might attach to the current account deficit. Beyond that, it seems to me that inflationary expectations remain essentially very well anchored. All of this suggests to me that the policy path we've been on is appropriate and that we should continue on that path.

CHAIRMAN GREENSPAN. First Vice President Holcomb.

MS. HOLCOMB. Thank you, Mr. Chairman. This is only the third FOMC meeting that I've had the privilege of attending, and I cannot help but notice how much the U.S. economy has improved in that short time. [Laughter]

CHAIRMAN GREENSPAN. You're welcome to attend any time!

MS. HOLCOMB. I think luck has a lot to do with it.

Following a pause in upward momentum last autumn, which may have reflected energy developments or election-related uncertainty, most economic indicators have firmed over the last few months. Monthly job gains were healthy during the fourth quarter. Durable goods orders showed good gains in November and December, and retail sales ended the year on a decidedly positive note. And despite the FOMC's five successive hikes in the federal funds rate, long-term

mortgage and corporate bond rates have edged lower, perhaps adding to the financial tailwinds driving the economy.

With this information as a backdrop, I sat down with several Dallas Fed economists to prepare our set of economic projections for the coming two years. All of us were confident that real GDP growth would fall in the 3½ to 4 percent range. Indeed, the point estimates that we sent in were extremely close to the Greenbook forecast. The Dallas staff's projections for the unemployment rate were also quite close to the Board staff's outlook. Where we differed was on the trajectory for the core inflation outlook. The Dallas economic staff suggests that core PCE inflation will rise to 1.8 percent this year and hold at that level in 2006.

A few factors account for the difference. First, the Greenbook incorporates several assumptions that give rise to the benign inflation projections, namely, that domestic profit margins will continue to narrow, that foreign firms won't try to rebuild their squeezed profit margins, and that benefit cost increases will remain moderate. If we relax any of these assumptions, the risks are tilted toward higher inflation and more rapid output growth. When we consider the results of the special Beige Book survey on capital investment plans, which confirmed that many companies are planning to increase their spending because of strong demand and emerging capacity constraints, the question arises of whether the capacity will come on line in time to relieve the inflationary pressures that have emerged in the last year. It seems that too many assumptions must work out just right to get the low inflation envisioned in the Greenbook.

As I said earlier, prior to yesterday I had only participated in two FOMC meetings. As a highly interested observer as well as a participant, I observed a notable difference in these two meetings. In November, the Committee was still focusing on headwinds confronting the economy, while in December the discussion had shifted to tailwinds. I note this because basically the same thing has happened at the Dallas Fed's board of directors meetings. In November, the directors' economic reports were uniformly downbeat. In December, the directors were decidedly and

uniformly upbeat. At our January board meeting, the positive tone of the economic reports underscored and reinforced our view that a turnaround had occurred in mid-November.

As of yet, however, most of the data available for the Eleventh District haven't quite caught up with the anecdotes. Texas employment growth has strengthened but remains below that of the nation. The Texas unemployment rate ticked up in November and December and remains above the national rate. Almost all sectors of the Texas economy are gaining employment and the sluggish recovery is broad-based.

Following a record-breaking year in 2003, 2004 turned out to be the best year ever for new and existing home sales in Texas. Despite this good news, the Texas housing market likely has peaked but at a high level. Prices remain flat. High inventories of existing homes and rising inventories of new homes caused builders to pull back on starts in the final months of 2004. On a brighter note, office vacancy rates have finally begun to decline in the last few months, thereby confirming the anecdotes about an improving office-leasing picture that we began to hear last summer. Hopefully, the economic statistics for the District will soon begin to reflect the recent reports from our directors, which noted an increasing willingness to hire and to make capital investments for badly needed capacity. These reports also noted some increases in pricing power.

In thinking about policy options, it seems that most of the inflation risks are on the upside. The "tech wreck" and geopolitical headwinds have died down. Over the last couple of months, the expansion has gained considerable momentum. Core inflation rates have turned up, mainly reflecting that goods prices have stopped falling and are now on the rise. The Committee has raised the funds rate by 125 basis points since last June. These rate hikes have not pushed up real, let alone nominal, yields on corporate bonds and fixed-rate mortgages. And there are risks that the dollar could fall further, adding to inflationary pressure. As I mentioned before, pricing power seems to be increasing. All of these factors suggest that the expected course of policy is on the right track, with another 25 basis point increase in the funds rate at this meeting and expectations of continued tightening over the year. Thank you.

CHAIRMAN GREENSPAN. President Hoenig.

MR. HOENIG. Thank you, Mr. Chairman. For the economy, growth currently remains above trend and, as we all know, is likely to remain above trend several quarters forward. As a result, we are systematically approaching long-run potential GDP for the economy. I expect growth will be near 4 percent this year—above trend. There are obvious reasons for this: monetary policy remains accommodative, consumer spending on goods and housing is strong, and business equipment spending is strong. While fourth-quarter growth was below expectations, final sales to domestic purchasers were at a robust 4.3 percent pace. And I think the labor market continues to improve.

Evidence from our District is very much in line with this outlook. Most retailers we contacted said that holiday sales were moderately higher than a year ago, and many said that sales were above their plan. In addition, many ski resorts in our region reported sharp increases in hotel occupancy and a near-record volume of ski visits, many from foreigners. Job growth picked up in December. Hiring announcements since the last FOMC meeting exceeded layoff announcements by a margin of two to one, and a substantial fraction of small and midsized manufacturers said that they plan to increase employment in the coming months. District manufacturing continues to expand at a brisk pace; production, new orders, and employment all rose in December, and firms remained upbeat about future activity. Capital spending plans for 2005 are reported strong.

We all know where the price indexes are right now but, looking to the future, I would expect to see further increases in core inflation. With the federal funds rate below the lower bound of most estimates for the neutral rate, I remain alert to the greater or increasing risk of inflation. In addition, there are several other reasons to think that this upside risk may be rising. First of all, as others have said here today, we are hearing more about the return to pricing power. Further, a greater pass-through of higher commodity prices seems to be occurring. The possibility of continued dollar depreciation is strong, as is a greater pass-through of higher import prices. And slowing productivity growth, leading to higher unit labor costs, is on the horizon.

Evidence from the District supports these observations. For example, the fraction of businesses reporting labor shortages was 53 percent in January, up significantly from last quarter and last year. As a result, wage pressures in the District have also increased. About 26 percent of the employers contacted in January said that they had to boost wages more than normal as compared to 17 percent last quarter and 11 percent a year ago. In addition, our manufacturing survey showed evidence of greater pricing power. For example, among respondents reporting higher input prices, the share who also reported higher output prices has risen markedly, from 40 percent in the fourth quarter of 2003 to 60 percent in the fourth quarter of 2004, the same as before the recession. Similarly, among those who expect to pay higher input prices going forward, those who also expect to charge higher output prices has risen markedly from 41 to 51 percent.

In summary, the outlook for the nation and our region is certainly good. Growth is robust, and we are hearing increasingly that there is a lot of money looking for opportunity. I would submit that the risk of higher inflation, therefore, is now large enough that we should at least be thinking about raising rates more aggressively toward neutral than we have in the past. Thank you.

CHAIRMAN GREENSPAN. Governor Bernanke.

MR. BERNANKE. Thank you, Mr. Chairman. The economic recovery seems well entrenched, and domestic final demand continued strong, foreshadowing healthy growth in 2005. I don't see inflation risks as having changed materially in recent months. In particular, labor costs have been remarkably subdued. However, with the recovery no longer fragile, continued withdrawal of monetary accommodation at a measured pace remains the appropriate policy, in my view.

Some have cited a possible slowdown in labor productivity growth as an upside risk for inflation on the grounds that slower productivity growth implies a more rapid rise in unit labor costs. While lower productivity does, of course, lead to higher unit labor costs, all else equal, the links between productivity growth and inflation, as well as the implications for policy, are actually quite subtle. I'd like to use the remainder of my time to discuss this issue briefly.

First, it's important to note that an assumption of slower productivity growth is already incorporated into the Greenbook forecast. The staff projects output per hour in the nonfarm business sector to rise at about a 1.7 percent annual rate in 2005, less than recent experience and about a percentage point below the profession's consensus estimate of the long-run trend. The projected slowdown reflects both cyclical factors and the assumption that there will be some giveback of the extraordinary recent gains. As productivity growth has surprised repeatedly on the upside for almost a decade now, I think the risks for the Greenbook productivity projections should be viewed as well balanced, at worst.

The staff projects that the deceleration in the cyclical component of output per hour should have little effect on inflation but will instead lower profit margins. And even though the expected slowdown in structural productivity growth will put upward pressure on prices, the staff expects the impact on inflation of that productivity slowdown to be offset by other factors like declining energy prices and a stabilization of the dollar.

To summarize, the Greenbook's baseline forecast shows that some slowing of productivity growth, at least, is not inconsistent with continued stable inflation. The interesting question is: What will happen if productivity growth in 2005 comes in even lower than the 1.7 percent projected by the staff? If firms view the resulting increase in the rate of growth of unit labor costs as more or less permanent, then historical experience suggests that these costs will be passed on to consumers fairly quickly, thereby boosting inflation in the short run. However, it does not follow that policy should therefore be tightened more aggressively. The appropriate response depends also on the reaction of aggregate demand to this change in productivity growth.

If a slowing in productivity growth occurs that is both perceived as permanent and is also largely unexpected by households and firms, then stock prices should fall and households should mark down their estimates of permanent income. The resulting decline in aggregate demand will tend to offset the inflationary impacts of the productivity slowdown. Also, because firms will expect a lower long-run return to capital, the neutral real fed funds rate will fall. As a consequence, as

illustrated in chart 6 of the Bluebook, the optimal policy response to a permanent slowdown in productivity growth may well involve a slower pace of tightening rather than a faster one, despite a possible short-run bump in inflation. This scenario is just a mirror image of the post-1995 experience in which a perceived increase in secular productivity growth sparked a stock market boom and rapid growth in spending, and hence was not disinflationary, despite the fact that unit labor costs declined.

What if productivity growth slows substantially but aggregate demand does not respond? In that instance, unfortunately, we might be called upon to make a judgment about whether the slowdown is likely to prove temporary or permanent. If it is temporary, then neither inflation nor policy should respond very much. If the slowdown is judged to be permanent, however, the failure of aggregate demand to adjust would suggest that households and firms anticipated the slowdown, while the staff was too optimistic. In this case, the slowdown in productivity should indeed be met with a tightening of policy in the short run. However, the funds rate should be lower in the long run, reflecting the fact that the neutral fed funds rate will also be lower. This scenario is the mirror image of the 2002-2003 period in which productivity gains created disinflationary pressures that did require aggressive easing in the short run.

To summarize, slower productivity growth does not necessarily require a tighter policy. First, some slowing is already anticipated and incorporated into the Greenbook forecast. Second, if a significant slowing occurs, the key issue is the extent to which aggregate demand responds to the slowdown. A sufficiently large decline in aggregate demand might well reverse the presumption that tighter policy is needed when unit labor costs rise. Thank you.

CHAIRMAN GREENSPAN. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. Economic growth in the Fifth District has been a little stronger in recent weeks. Retail revenues seem to have picked up. According to our survey, seasonally adjusted shopper traffic was stronger in January than in December, and big-ticket sales firmed after having been weak in the previous month. In the service sector, revenue growth

continues to be brisk. District manufacturing activity generally firmed in January, following some softness in December. And although our survey showed manufacturing shipments down somewhat recently, new orders strengthened and factory hiring was higher.

In labor markets, we're seeing some indications of a pickup in job growth in recent weeks. Data for December had shown only modest gains in our area. Business contacts reported that prices rose at a somewhat quicker pace in January than in December, though increases for final goods and services were generally less than 2 percent. We continue to hear of sharp increases in prices for some categories of raw materials. Some District manufacturers indicate that higher costs are squeezing their margins, but an increasing number of producers indicate that they are passing through cost increases by raising their prices. Pass-throughs are easier, some say, because raw material prices are affecting their competitors as well, though it isn't clear why this wasn't true with the earlier cost increases. Other contacts note that the stronger economic outlook makes their customers less resistant to higher prices, and this sounds a bit more persuasive to us.

Turning to the national picture, the data we've received since the December FOMC meeting suggest that the recovery is on track. The forecast for inflation and economic activity in this Greenbook is little changed from December, and I haven't seen anything that contradicts that view. In particular, core PCE inflation is projected to remain around 1½ percent, inflation expectations appear to be contained, and the Greenbook continues to project a healthy real GDP growth of between 3½ to 4 percent over the next two years as the output gap gradually closes.

To my mind, the most intriguing development since December is the flattening of the yield curve. Despite a 26 basis point increase in the two-year Treasury rate since the December FOMC meeting, the 10-year rate barely moved and the 30-year rate actually declined by 17 basis points. This was clear in Dino's charts yesterday. The behavior of the term structure is just what one would expect if the public has confidence that we're going to conduct monetary policy in a way to keep inflation premiums stable and, thus, keep long-term interest rates low over the long run. The fact that the TIPS [Treasury inflation-protected securities] spreads have been relatively stable of late also

supports this interpretation. I read these facts as evidence of the credibility of our low-inflation commitment, as was commented on at length yesterday.

Of course, as we go forward, I think we're going to have to watch the term structure carefully for evidence of emerging market concerns about either inflation or deflation. For now, however, the yield curve evidence, together with overall economic conditions, suggests that the policy path we are assuming for this outlook is nicely balancing the upside and the downside risks.

CHAIRMAN GREENSPAN. Thank you. Let's break for coffee. We could extend this for a little longer than usual, since we do have a lot of time. So let's break for 20 minutes.

[Coffee break]

CHAIRMAN GREENSPAN. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. My forecast for economic activity in 2005 and 2006, like the rest of yours, was for growth a little faster than the trend rate of growth in potential. That reflects my judgment that the forces that had been holding back the economy in recent years have largely dissipated, allowing the effect of relatively stimulative financial conditions to continue to show through and raising the level of production relative to potential.

My projection for growth in 2005 and 2006 is in line with the rate of growth in 2004. Yet energy prices, whose rise must have damped growth to some degree in 2004, are expected to be flat or somewhat lower. In addition, financial conditions have eased since the middle of the year, with bond rates and the exchange rate lower and stock prices a little higher. So, as I thought about my projection, the logical question seemed to be whether we were on the verge of a much stronger pace of economic growth. Although that's a possibility, I see several factors that should keep growth to a moderate pace. Monetary policy and fiscal policy are at the top of the list. On the fiscal side, the partial-expensing provisions probably brought forward some capital expenditures from 2005 to 2004. For monetary policy, I assumed a continued gradual withdrawal of monetary stimulus along the lines built into the staff's forecast or the market's. That should lead to rising real intermediate- and long-term interest rates. A rise in real rates will damp the growth of consumption and

investment spending directly, take something off the increase in house and equity prices—holding down gains in wealth—and support the dollar. Of course, that hasn't been the experience over the last six months or so, as President Lacker just pointed out. But longer-term real rates have fallen to such a low level that I find it difficult to believe they won't rise from here, provided moderate growth is sustained.

Indeed, I see an important downside risk to the forecast from the possibility of a sizable jump in longer-term real interest rates, which could have a pretty serious effect on house prices and consumption if it results from an unwinding of special factors or from a revision of unreasonably low expectations rather than from an unexpectedly faster pace of economic activity.

Until those rates ratchet higher, however, their low level, along with the basically sideways movement of equity prices since late last year, would seem to suggest that caution among savers and spenders has not dissipated entirely. At the very least, the behavior of bond yields and stock prices seems inconsistent to me with a new more ebullient attitude that would presage boom-like conditions. In addition, the behavior of the trade deficit is likely to be damping the growth of demand on U.S. resources for a while. The staff forecast, which has net exports making a modest net negative contribution on average over the next two years, is itself premised on a pickup in foreign demand—a pickup we don't yet see in the data. This suggests to me another source of downside risk.

Over the long haul, as people become more reluctant to send us growing proportions of their savings, the deficit will have to fall. That will put considerable pressure on productive capacity in the United States, but it's not at all clear when that will begin to happen.

Finally, in making my forecast of real growth, I took account of my serial forecast errors. I've been overpredicting growth since I got on the Committee, so I used a sophisticated algorithm to compensate for this propensity: I decided what I really wanted to forecast and I took a little off!

[Laughter]

My projection for core PCE inflation for 2005 and 2006 that goes with this path of output is slightly higher than the staff forecast. I gave some weight to the market-based core PCE numbers, which have been running higher than the total core PCE, but that forecast remains below 2 percent, and it is stable at that level. For inflation, the question I wrestled with was: Why not further increases this year after the acceleration of 2004? In that regard, the recent data from the last part of 2004 have been supportive, I think, of a stable inflation forecast. With these data, every broad index of core inflation—from GDP prices to the CPI to PCE—grew less rapidly in the second half of last year than in the first— and significantly less rapidly, by at least  $\frac{1}{2}$  percentage point. This pattern is not consistent with accelerating prices. It reinforces the hypothesis that a good portion of the pickup in core inflation in the first half of 2004 was attributable to special factors: a reversal of the unexplainable undershoot in inflation in 2003 and the pass-through of higher energy, commodity, and other import prices from late 2003 and early 2004. At least in terms of energy prices—not imports, which are a big question mark—I think these upward pressures should not be a factor in 2005.

In labor markets, increases in measures of compensation also slowed from the first half of the year to the second. Now, this is particularly noteworthy in that one might have expected the previous run-up in energy prices and the strength in productivity increases in recent years to put upward pressure on compensation gains. As a consequence, I think I'm a little less concerned than some others of you that slack has already been absorbed. I can only explain the recent pace of compensation data if appreciable slack is persisting in labor markets to balance these other upside pressures. In this environment, continued intense competitive conditions are likely to limit labor cost increases and the ability or willingness of firms to pass through shorter-term increases in unit labor costs into prices and thus risk market share.

Finally, inflation came in lower in the second half of 2004 than I had expected. My projection was at the low end of our collective central tendency, so most of you were a little higher than I was. Partly, this might have reflected a shortfall in growth from the projections and a smaller

decline in the unemployment rate. But energy and import prices rose more than I had anticipated. Consequently, I also wondered whether at midyear I had given enough weight to the factors restraining inflation—slack, elevated markups, and stable inflation expectations. To be sure, slack should be diminishing, businesses will try to resist any squeeze on markups, and the economy may be closer to potential than it appears right now. If the dollar declines substantially, import prices will increase, reducing foreign competitive pressure. Or if trend productivity slows more than projected, firms could be more insistent and more successful in passing through costs than is consistent with keeping inflation in check. Still, for now, I think low, stable inflation is the most likely outcome for the next few years, provided policy continues gradually to firm, as slack slowly diminishes and output grows at a moderate pace.

As for the balance of risks, I've always thought that that phrase applies primarily, or first and foremost, to the most likely path for inflation and output relative to our objectives at the assumed path for policy. And, in that context, the risks still seem to me to be balanced. The fact that I found myself asking these particular questions about the outlook suggests, perhaps, a slight skew to the distribution around these modal outcomes. But I think we should await further developments to assess whether those skews will become large enough to influence the central tendencies, the balance of risks, and the path on which we remove policy accommodation, or whether, as the market and the staff expect, we actually will need to slow the pace of tightening in the future. Thank you, Mr. Chairman.

CHAIRMAN GREENSPAN. President Poole.

MR. POOLE. Thank you, Mr. Chairman. When I talk to my business contacts, I try to let them, first of all, tell me what's bothering them. Sarbanes-Oxley and health care costs rise to the top of the hit parade there; that's about all they really want to talk about. Certainly, Sarbanes-Oxley is causing a significant increase in accounting and audit budgets, and a lot of senior executive time is being devoted to it. Nevertheless, the costs associated with that legislation are not going to show up in unit labor costs. It involves a big increase in the audit budget, but that's a tiny, tiny fraction of

total outlays. So it's a diversion and a nuisance—a pain in the neck for many people, including ourselves.

When I tried to extract views by asking contacts if they were concerned about certain issues—for example, labor availability—the answer was typically “no.” They feel labor is readily available except for occasional specialties, like auditing. [Laughter] The only group for which they really see a bit of tightening, I think, is IT [information technology] professionals. But concern about labor availability is not general; it's spotty. So if you're opening a new retail store, you'd probably find several times over the applicants for the number of associate positions you have. I got the same kind of reply about concerns regarding wages and labor costs generally.

The one thing I have seen is a modest upward revision among my contacts in expectations for their companies. A contact from a computer firm with a large international business reported that his company has revised upward somewhat their expectations for global growth. From contacts in the package delivery business we heard reports of some orders for new aircraft. They see continuing strong growth in the volume of traffic from Asia, so that's leading to some expansion there. The overall impression I get is that things are very, very well balanced. There are modest upward revisions in plans and expectations.

I think the expansion is proceeding and is, in fact, unusually free of significant bottlenecks. Things seem to be working out in an extremely orderly way. I don't even have any minor quibbles with the staff outlook, but I would like to emphasize the following point, which comes from the fan charts depicting the forecast confidence intervals. I think the staff's forecast is a very, very sound central tendency. But when I look at the table showing the confidence interval around the Greenbook forecast for real GDP this year, I see a point estimate of 3.9 percent and a confidence interval of 2.2 to 5.5 percent. Our life is going to look quite different if GDP growth is either 5.5 or 2.2 percent. But that is the sort of confidence interval that comes from the history of Greenbook forecast errors. So, I think it's extremely important that we keep our minds open to various shocks—symmetrically on both sides. This is not an asymmetric world; shocks could come on

either side. Moreover, I think it's important that we provide that message to the markets so that the markets don't assume that we are locked into a particular path. The path that we're on makes a whole lot of sense given what we know now. But we don't want to condition the market to think that we're locked into that path independent of shocks and disturbances. I've written down a list of various potential shocks and disturbances. We can all do that. We've talked about some of them. The ones that will come and bite us probably will not be any of those that are on the list. They're probably going to be total surprises. Thank you.

CHAIRMAN GREENSPAN. Vice Chair.

VICE CHAIRMAN GEITHNER. We haven't changed our view of the national outlook significantly since the last meeting. Our forecast is quite close to the Greenbook in all components, and quite close, I think, to the central tendency of the rest of your forecasts. I don't have anything material to report about the economy of the Second District that I think has relevance to the national outlook.

On the assumption that monetary policy follows a path close to that now priced into markets, we expect growth to be above potential over the forecast period, at slightly above 3½ percent, with core PCE inflation staying around 1½ percent. We think the distribution of probabilities around that forecast is roughly balanced, and we have somewhat more confidence in our forecast this time than we did at the last FOMC meeting. At the margin, we see less downside risk to the growth forecast than we have over the past few meetings.

The resilience of the expansion in the face of recent shocks, the breadth of underlying strength in the main components of GDP except net exports, the fundamental sources that seem likely to underpin a continuation of recently strong consumer spending and investment, the survey-based measures of consumer and business confidence, the anecdotal reports of somewhat diminished business caution, and the moderate pace of the expansion so far all seem to add to the arguments in favor of a forecast for solid growth slightly above trend.

There is some talk among people who run major global corporations in New York about fragility remaining in the outlook, about a world of lower growth and higher volatility, about more lurches in the outlook for economic activity and asset prices. But I think the overall tone is a bit more positive; it has become progressively more positive over the last few months.

On the inflation outlook, we face diminished risk of a significant decline in inflation from current levels and somewhat higher risk of some acceleration of inflation from these moderate levels, although the recent news, of course, has been reassuring. As productivity growth slows, resource utilization increases, and unit labor costs accelerate, we lose some of the cushion that has supported what has been a very benign performance of inflation recently. Profit margins are substantial enough to absorb significant acceleration in labor costs and other costs, but firms seem to be reporting increasing pricing power still. With the markets apparently confident that we will continue to move the fed funds rate closer to equilibrium—whatever that is—we've been successful in keeping inflation expectations stable at relatively low levels.

This forecast, of course, looks implausibly benign. It's hard to imagine that the path of the economy between now and the end of 2006 will materialize as the consensus not just around this table but among private forecasts seems to envision. The confidence around this view, which is evident in low credit spreads—low risk premia generally—and low expected volatility, leaves one, I think, somewhat uneasy. The general reduction in fear and uncertainty that now prevails has the effect of making everything look better. But, of course it also may increase our vulnerability to some adverse shock and could magnify the effects of some types of shocks.

The greatest risk to the forecast, I believe, involves this combination of very low risk premia with our large growing external imbalance, uncertainty about the prospects for a meaningful improvement in the fiscal baseline, and uncertainty about the sustainability of high structural productivity growth. Together, these factors increase the probability of some unwelcome surprise—some unwelcome shock to asset prices which, of course, could feed into a substantial slowdown in consumer spending.

Obviously, it would not make sense for us to use our monetary policy signal to reintroduce more cautious risk premia and greater uncertainty. But we probably need to be careful over time, to the extent that it is possible, to avoid doing things that reinforce an unhealthy degree of confidence in the future path of the fed funds rate or leave that path less responsive to changes in the data and the outlook.

Monetary policy should, in my view, continue to be directed at moving the fed funds rate higher toward a level more comfortably in the range of equilibrium and at convincing markets that we will continue to move the funds rate higher at a pace determined by our evolving view of the outlook—that is, sufficiently fast to keep inflation expectations stable at low levels. I don't know whether that path will end up being steeper or softer than what is now priced into markets. As we move today, I think the signal in our statement should try to be neutral to the expectations now prevailing about the near-term path of monetary policy. Thank you.

CHAIRMAN GREENSPAN. Governor Olson.

MR. OLSON. Thank you, Mr. Chairman. First, I would like to reflect briefly on one of the charts in the chart show—the chart on E&S [equipment and software] expenditures—and the possibility of the “no investment pothole” scenario. It strikes me that at this point in early February, if we are not yet certain as to the impact of the partial-expensing provisions, there's a strong indication that there is no pothole. I say that for this reason: In my experience, incentives attract capital, and significant incentives—such as the kind that would generate this sort of behavioral change—attract capital noisily. That means that we would pick up, either from the E&S manufacturers or from the lenders, some indication of the impact of the partial-expensing incentives. The fact that we have not suggests that we may not see a deceleration in E&S spending as a result of the expiration of the partial-expensing provisions. That may be a risk to the forecast, but it is a risk only to the accuracy of the forecast; it would not be an unwelcome development. If you look at the “no investment pothole” scenario in the alternative simulations, the impacts on real GDP and on

unemployment are very positive, yet the impact on PCE prices is neutral. So it seems to me that that is a very realistic alternative.

Second, in following the comments by bankers in January after the release of fourth-quarter earnings reports, two themes came through. One was that asset quality has peaked and can only decline, and the other was the highlighting of additional provisioning for loan losses both in the fourth quarter and potentially in 2005. So there was a suggestion of cyclicity to these developments that would at least merit a look at the relationship between asset quality and the impact it might have on the economy. The question is whether or not there is anything going on that would jeopardize our forecast of growth above potential through 2006.

Bill Treacy pulled together some information for me, and I've handed it out in a set of three charts showing nonperforming assets, net charge-offs, and loan loss provisions as compared to real GDP growth since 1990.<sup>4</sup> The loan data have been seasonally adjusted to comport with GDP data. For two of the three—nonperforming assets and net charge-offs—asset quality is a very reliable lagging indicator. The peaks of nonperforming assets and charge-offs followed the troughs of GDP by several months. The same is not necessarily true with loan loss provisions. However, the opposite is not true. Those data did not indicate that at an inflection point we had reached a time in the cycle that would suggest the economy was ready for a downturn. In fact, loan loss provisioning, in many cases, will increase at the start of the cycle of loan growth again, for reasons that are known only to auditors and the SEC [Securities and Exchange Commission]. [Laughter] So the question is: Is there anything in the current analysis of asset quality that would suggest a risk to our current forecast? It seems that there is not.

A third point that I would like to make that has not been discussed yet is the longer-term fiscal policy issue called Social Security reform. In Washington, D.C., the decibel level on Social Security is strong. It's about to get stronger, particularly after this evening when the President discusses it again in his State of the Union speech. *The Washington Post* this morning indicated that

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<sup>4</sup> The materials referred to by Mr. Olson are appended to this transcript (appendix 4).

even though the Administration's position is not yet out, the Democrats have already lined up sufficient votes in the Senate to keep the private accounts—or personal accounts, as they are now being called—from happening. The question would be whether the personal/private accounts will continue to be the focus or whether can we move to a more rational, thoughtful consideration of options such as those outlined in *The Wall Street Journal* article featuring Governor Gramlich earlier in the week. It is unlikely that we are going to get that latter scenario. The personal investment accounts will continue to be the focus for an important reason. The Republicans who are in favor see the personal accounts as transformational—transformational both in the role of government and in terms of what government can do for the wealth-building of individual private citizens. They see the adjustments that can be made as painful. And, as one of them told me recently, “We’re not in it just for the pain.” [Laughter] In other words, if the package of proposed changes has no personal/private accounts, there will be no Social Security reform. Also, there’s a very short window. If it doesn’t happen in 2005, it’s likely that it will not happen. So, I think the President is staking a significant part of his reputation on achieving Social Security reform, and the focus will be on that issue. So, I think we should expect that to be a very high profile issue for the next several months.

In summary, there’s certainly nothing, even with the “no pothole” alternative, that would suggest to me that we in any way should alter our current path of removing accommodation in the measured manner we have been doing. Thank you.

CHAIRMAN GREENSPAN. Governor Ferguson.

MR. FERGUSON. Thank you, Mr. Chairman. The economy, to me at least, seems to be safely at what I would describe as a mid-cycle sweet spot, with inflation generally contained and growth at about potential. The staff’s outlook and the consensus forecast—the Greenbook baseline and the central tendencies on chart 15—were all consistent with that kind of benign outlook going forward.

While fourth-quarter GDP may have been mildly below expectations—due to the vagaries of national statistical authorities in other countries perhaps—the underlying growth of domestic demand in the most recent release was, I would say, relatively encouraging. Final sales to domestic purchasers, the broadest measure of domestic demand excluding inventory investment, grew at a solid 4.3 percent pace, which I think Tom Hoenig already pointed out. Both PCE expenditures and E&S expenditures contributed. Importantly, the private sector contributed almost all of the growth, as government consumption rose less than 1 percent and contributed less than 0.2 percentage point to the GDP growth, according to the most recent report. This growth was supported by a number of underlying factors, all of which I think are consistent with the very positive outlook. Real disposable income managed an impressive 6.2 percent increase, even excluding the Microsoft dividend. I'm surprised that from the Twelfth District we didn't hear more about the dividend, since most of the recipients apparently live in Washington State.

Orders and shipments of durable goods excluding aircraft rose briskly in December, perhaps undercutting to some degree the staff's pothole outlook but reinforcing a general sense of balanced growth. Weekly jobless claims edged up most recently but still remain below the recent trend. Consumer confidence and business confidence surveys are all off a bit, but, again, for the most part the gains in the last few months are being maintained. And our own survey of capital spending plans reinforces the notion of gradual business expansion. So, against this relatively benign mid-cycle backdrop and the number of data sources that suggest a continuation of this outlook, should we adopt a "What, me worry?" attitude? Here is what differentiates us, perhaps, from some of Governor Olson's contacts: We, indeed, are in it mainly for the pain! [Laughter]

But what are the things that should be causing us some pain as we look forward? First and foremost, the drag from net exports appears likely to continue and, I would say, is disturbingly stubborn. Even after the glitch in the statistics from Canada has been taken into consideration, the trade deficit hit a record in November and averaged \$57.6 billion in the first two months of Q4 last

year, well above the Q3 average of \$51.8 billion. Given the amount of dollar depreciation that we've already experienced, why have we not seen a more balanced net export picture?

I think we fully understand that this is a phenomenon that is due to a number of factors. One is the relative strength of the growth in the U.S. economy versus the rest of the world—the Houthakker-Magee effect. The initial imbalance between imports and exports, as Karen has pointed out, means that exports have an awfully long way to run just to catch up with imports. And there is the rise in oil prices. Another reason that imports appear to be relatively exchange-rate inelastic may be the limited pass-through, which fell from about 0.5 in the decade of the 1980s to about 0.1 in the decade of the 1990s. Some also believe the fact that the recent dollar depreciation has been against some currencies and not others may explain the size of the trade deficit. But I suspect our staff is not in sympathy with that particular argument.

In focusing on chart 14, though, what stands out is the degree of dollar depreciation that is called for just to get a very, very small change in the baseline—to try to offset even a little bit of the trade imbalance. I think that is really quite disturbing for a number of reasons. One is that I don't have as much confidence perhaps as others do that domestic demand overseas is going to be stimulated. The Japanese have a very severe problem to deal with. The Europeans, as I meet with them, continue to discuss a very low potential growth rate and the need for structural changes. The ECB, for a variety of perhaps legitimate reasons, I think feels quite constrained about trying to stimulate domestic demand. So, I think the domestic demand situation externally is not particularly attractive.

We've already talked about, in Karen's response to Governor Gramlich, issues relating to the high-tech sector, where I at least see some questions, as Larry alluded to in his remarks. So, I sense that the position with respect to the drag from exports is likely to be with us for a long time, is unlikely to change very quickly, and will probably require much more dollar depreciation than is built into the staff forecast, even in the alternative simulation. Therefore, I think that's an issue that is going to be perilous for the country and perhaps for us.

The other risk that I think one should be focused on is an upside risk having to do with the pace of growth in unit labor costs. That has quickened recently, rising at a progressively faster rate over the four quarters of last year and leading to a slowing in the growth of unit profits. Should businesses try to reassert the more rapid growth in unit profits that we saw earlier, they will need to attempt to raise prices. The “flat markup and higher compensation inflation” scenario has, to my mind, a small but nonzero probability of happening. The ratio of nonfinancial corporate profits to GDP has risen about 5 percentage points and now stands at about 11 percent. The staff forecasts that the profit share will fall off a bit, and, I must say, history does support that forecast. In five of the previous seven cycles since 1960, the profit share also rose above 5 percentage points—as it has now—and then did come off, as the staff has forecasted for the current cycle. However, there is a little worry in all this, because in the last cycle the profit share reached about 13 percent of GDP before falling. If businesses now condition their expectations on that most recent experience, then the scattered stories of the exercise of pricing power that we’ve heard around the table could potentially become more widespread. Whether or not that actually will occur depends on a number of factors that have been discussed already, having to do with competitive forces both in labor markets and in output markets. Issues having to do with slack and with import prices clearly come into play here.

At this stage, I’d say that all of this is clearly worth watching. These are the worries of central bankers, if not politicians. Whether any of these risks or some other ones not named will come to pass obviously will be the subject of this year’s meetings. Until that time, I think we should continue to execute our planned strategy of a gradual removal of policy accommodation, but review it really quite seriously at each meeting. Thank you very much, Mr. Chairman.

CHAIRMAN GREENSPAN. Governor Bies.

MS. BIES. Thank you, Mr. Chairman. To me, the forecasts presented in the Greenbook and the consensus forecast of those from the private sector paint a sound economic picture for 2005—one of solid economic growth and an unemployment rate continuing its slow downward trend. And

I'm comfortable that the removal of policy accommodation at a measured pace that we've announced and have been implementing is supportive of this growth going forward. As some of you have mentioned, given such a good forecast, the question that arises is: What should we be worrying about in this picture? I'd like to mention two concerns that I've been focusing on lately.

The first is the risk around inflation. This is not a huge risk, but when I look at the Greenbook projection compared to various private-sector forecasts, the Greenbook's inflation forecast is at the lower end of the range of the Blue Chip forecasts. Hopefully, the Greenbook will be the right forecast on this, but the inflation numbers have shown a lot of volatility in the last two years. So in light of the recent volatility, even in the core measures of inflation, I think it's important that we look carefully at incoming data every month and keep on top of what is happening to try to get a better understanding.

The second concern has also been mentioned by a couple of you around the table, and that is the mystery of why long-term interest rates aren't any higher than they are. My personal forecast a year ago would never have had long-term interest rates at the levels at which they've been sitting. If I look at various aspects of this, in trying to understand it, I can explain some things. For example, we know that corporations have been seeing record profit margins and, as a result, have been generating tremendous cash flow. That means that corporations have been able to fund a large part of their investment in inventory buildup through internal funds, as opposed to going to banks or to the markets.

We also have seen fewer accounting scandals, which generated a lot of the uncertainty that widened credit spreads in 2002. Those spreads have really come back down again as we've had relatively fewer shocks to market confidence. We've also seen rating agencies worldwide reduce the number of downgrades relative to upgrades; so that has turned around, which is another good sign. And as Governor Olson mentioned, the bankers are very positive about current credit quality. But I would say again that we should recognize that we are probably at the sweet spot in that credit cycle.

On the other hand, consumers have been borrowing like crazy, and they've been borrowing at the long end of the curve. In large part, this is a reflection of the fact that interest rates are historically low, and people are being very rational by locking in at long-term rates and borrowing all that they can. On net, though, we've seen that there's been plenty of liquidity in the long market. So what could happen here if long rates do move up as we go forward? I guess I worry primarily about what that could do in terms of business investment. We know that there may be a narrowing in profit margins. And cash flow has changed to some degree, in that companies are beginning to look more to the outside for credit, especially as merger activity picks up, and that could affect the relative demand for credit from corporations.

On the household side, we're seeing that consumers have used these low rates to support consumption. They've done it through equity extractions as they refinance. They've also had the benefit of tremendously innovative mortgage products being offered by bankers and other lenders. For tax reasons, people want to borrow as much of their debt against their houses as they can, and lenders have accommodated them by innovations in ARMs [adjustable-rate mortgages] where borrowers can lock in a low rate for a period on the short end of the curve. But lenders have also offered interest-only loans and mortgages with very high loan-to-value ratios to provide more credit that is eligible for tax deductions. If interest rates rise, will consumers begin to slow their use of credit and, if so, what does that mean for consumption in the forecast? This is the issue I really want to focus on because, to me, consumers have been the mainstay of this whole economic cycle. To the extent that there is a wealth effect of housing, this could be a concern if people begin to purchase houses at a slower pace or even if housing construction stays at a high level but doesn't grow. We've seen several private-sector forecasts of flat house prices next year. If suddenly the equity buildup and the net worth of households were to slow, that could have an impact for consumers.

When we look at why the saving rate is so low today, we also have to look at the fact that the ratio of net worth to income is at record levels. Consumers have not had to save out of current income in order to attain the net worth goals they have set, so they've been applying their current

income almost entirely to current consumption. But if net worth begins to stabilize and consumers are not able to increase cash flow through refinancings or home equity lines, that could slow the pace of consumer spending and result in less GDP growth than in the Greenbook forecast. Thank you.

CHAIRMAN GREENSPAN. Governor Gramlich.

MR. GRAMLICH. Thank you, Mr. Chairman. This has been a quiet month in Lake Wobegon. The growth of aggregate demand has been good and the growth of output reasonably good, though we would all feel better with more growth in exports and in import-competing sectors. Core inflation keeps bouncing along well within at least my target range. And I am, in general, in sympathy with those who have been arguing for NAIRU on the lower side. Our measured pace of changing policy has worked well in getting rates off the floor without seeming to hurt the expansion, and there is no apparent reason to change that policy at this meeting.

To me, the real problem is the one that I spoke about last time, and the one that many other Committee members have mentioned today in different ways—low national saving. The U.S. national saving rate is now at a post-World War II low, the combination of steadily falling personal saving rates and the recent budget deficits. The staff thinks, and I believe President Santomero does, too, that personal saving rates will rise, and the Chairman thinks that budget deficits will fall. I'm a bit skeptical about both claims, but we will see.

This week, the CBO added some new and sobering information on the budget deficit forecast. Assuming that there is added spending for Iraq, that the tax cuts are extended, and that the AMT [alternative minimum tax] is indexed implies the continuation of large-scale deficits through 2015, with the debt/GDP ratio climbing back to about 45 percent by that time—close to as high as it was at its local peak in the early 1990s, though not at the all-time peak that was achieved back in World War II. We're not careening out of control in these forecasts, but we could certainly do better in this window before the baby-boom generation starts retiring in force.

Low national saving means either that investment will fall or that international borrowing must continue. Problems with falling investment are well known, and we have discussed them often. Problems with the continued borrowing are much less well understood. The staff recently wrote us a memo about adjustments to prolonged international borrowing in other countries. The data underlying the report indicate no instances of more than four or five years of continued borrowing on the trade account; the trade account is the deficit that should, and in their data almost always does, determine the ratio of international liabilities to U.S. GDP.

Our trade account borrowing has already gone on three times as long as any other borrowing episode for high-income countries and, in Karen's forecast, keeps rolling right along. There can be both a bad and a good explanation for the phenomenon. The bad one is the well-known codependency thesis: We are over-consuming and other countries are inappropriately supporting their export industry by intervening to strengthen the dollar. The good explanation is that other countries have populations aging even more rapidly than ours and need a good place to invest their savings—given our strong productivity advance, we're the place. This benign explanation may well be correct, but it does have limited duration. When the older workers in these countries actually retire, they will start to run down their saving and pull their funds back. At that point, our investment rates would seem to have to fall. How long this international borrowing can go on is a deep dark mystery, but one thing is clear: As a nation, we would be better off if we could manage to save more and finance our own capital investment. We could do that by gradually tightening our budget while other countries expanded their economies.

Back to monetary policy, we usually analyze it in a Taylor rule type of framework, comparing inflation and unemployment. We could also go back to an earlier IS/LM framework, which is appropriate when prices are stable, as I think they are at least roughly. When and if we get my desired fiscal tightening, I'd be glad either to slide down or shift down the LM curve and move to lower funds rates as may be appropriate and necessary to keep the U.S. economy near full employment. But another aspect of the quiet month in Lake Wobegon is that I see no more prospect

of any real fiscal austerity on the horizon than I did at the last meeting. Hence, for one more month, I'm on the "measured pace" bandwagon.

CHAIRMAN GREENSPAN. Thank you. Vincent.

MR. REINHART.<sup>5</sup> Thank you, Mr. Chairman. At least from the perspective of most investors, your policy decision today seems foreordained. The universal belief in the market holds that the Committee will raise its target for the federal funds rate  $\frac{1}{4}$  point, to  $2\frac{1}{2}$  percent and issue virtually the same announcement as was released after its December 14 meeting. Presumably, this settled opinion results from market participants' reading of your recent statements—including the minutes from the December meeting, which I can assure you did not escape the world's attention—as well as incoming economic data that seemed to present no obstacles to deflect the Committee from its path of continuing to remove policy accommodation. In other words, the case for a  $\frac{1}{4}$  point tightening at this meeting, which is laid out in your first exhibit, is expected by people outside this room to be compelling to you.

In particular, the Committee may be inclined toward such action—what we dubbed alternative B in the Bluebook—if it believes that market participants have pegged the desired pace of tightening just about right. As can be seen in the upper left panel, the path of money market futures rates can be read as indicating the expectation of a succession of  $\frac{1}{4}$  point moves until the summer, followed by a slower pace of firming that puts the funds rate at around  $3\frac{3}{4}$  percent by the end of 2006, a little above the staff assumption in the Greenbook. The staff views such a trajectory for policy as likely to be consistent with working down resource slack, which is shown in terms of the unemployment rate at the upper right, and with about steady inflation, as measured by the core PCE inflation rate shown just below. You might find some appeal in those outcomes and seek a decision that preserves the path of expectations thought consistent with them. In that case, you should probably direct Michelle Smith to take the statement from your last meeting and substitute February 2 for December 14,  $\frac{1}{2}$  for  $\frac{1}{4}$ , and be done for the day.

You might, however, harbor some concerns that those favorable macro-economic outcomes are predicated upon liquidity conditions, including low long-term interest rates, that could be encouraging excessive risk-taking in a wide range of asset markets. Indicia of a relaxed attitude toward and lessened perception of risk on the part of investors may include the narrow spreads in the markets for corporate and sovereign debt (as shown in the middle left panel), as well as low levels of implied volatilities of financial prices, and high and rising home values (not shown). But perceived excesses in financial markets have not triggered action by this Committee in the past. In that regard, policymakers have tended to follow the logic outlined in the middle right panel. To be sure, some asset prices importantly influence economic behavior. However, because the determinants of asset prices are difficult to know

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<sup>5</sup> The materials used by Mr. Reinhart are appended to this transcript (appendix 5).

with precision, it is neither obvious that asset price bubbles can be identified in real time nor clear what policymakers should do if they were confident that some prices were misaligned. Moreover, there may be other instruments of policy better suited to dealing with such problems, including supervisory restraint. As a result, you might conclude that asset prices should influence monetary policy decisions only to the extent that they have a material effect on the outlook for the things you care about—output and inflation.

Any sentiment to shade toward a firmer policy than in alternative B because of concerns about potential asset market imbalances might well be tempered by the range of policy prescriptions based solely on these macroeconomic objectives shown in the bottom panel. You already have moved the policy rate toward the high end of the range of standard recommendations—the green shaded area—and are anticipated in futures markets to move even higher relative to that range in the quarters to come.

I earlier described prevailing market expectations as consistent with a string of  $\frac{1}{4}$  point moves followed by a more gradual pace of tightening. With the aid of exhibit 2, I'd like you to consider an alternative characterization that also fits the data and that may be more appropriate if market participants have taken the word “measured” to mean regular and methodical, like a metronome.

The key identifying assumption is listed in the upper left panel. In particular, suppose market participants expect you to firm  $\frac{1}{4}$  point at every meeting until you stop this tightening cycle for good. The unknown in markets, then, is when you will end the current firming cycle. We can use futures quotes—which represent the market's average of the possibilities of continuing to tighten and of stopping—to back out the probabilities attached to action at each upcoming meeting being your last. This interpretation of the path for the expected federal funds rate is given at the right. Current futures rates are consistent with a median probability that you will have halted policy firming by the September meeting. Such an eventuality would deliver the path for the nominal funds rate given at the middle left: Along that path, five more hikes (including one at this meeting) will cumulate to put the federal funds rate at  $3\frac{1}{2}$  percent by August. Assuming that inflation holds around its recent pace and that short-run measures of the equilibrium real rate don't move, that nominal rate would accord with a real federal funds rate that is about one-half of the way up the red river of estimates of its equilibrium in the familiar Bluebook chart plotted in the bottom panel.

Those ranges in the bottom panel also map into the seemingly eccentric shading scheme of the stopping-time distribution in the upper right. If you wanted the real rate to remain in the blue region—below the range of model-based estimates of its equilibrium—you should be prepared to stop tightening at this or one of the next three meetings. If you're shooting for the red region of model-based estimates, then you should expect to stop this firming phase anywhere from August to December. But if you anticipate wanting a cushion above those model estimates—

say, in the higher blue region—you might not stop firming until the winter or spring of 2006. According to the frequency distribution, it seems that investors put the probability at about two-in-three that you would be done before that.

There are three reasons why I have walked you through this alternative explanation of futures rates. First, it underscores that our understanding of financial prices is sufficiently imprecise that there can be several plausible interpretations that are observationally equivalent. Second, if you would prefer that market participants not anticipate an unbroken string of policy moves, you could reiterate that “measured” means tightening that is carefully calibrated, not actions that are routinized and mechanical, and is consistent with a pause if that proves necessary. Mention of that sentiment in the minutes of this meeting may prove helpful in aligning market expectations with your own—as it seemed to be the case when similar notions were published previously. Third, the current structure of futures rates is consistent with a noticeable probability mass placed on the bet that this firming cycle will soon come to a close, with the median guess being that you will be done after the August meeting. If that market expectation does not seem unreasonable, then you are going to have to come to grips relatively soon with various aspects of your statement, including the characterization of the degree of policy accommodation and the risk assessment—the communication challenges diplomatically referred to by President Moskow.

The next exhibit focuses on the risk assessment, with the top panel repeating the last paragraph of the statement released after your December meeting. Historically, this paragraph and its predecessors have been designed to provide some guidance about the future direction of interest rates. The statement has evolved to a point such that either of two parts of this paragraph could convey such a message. It can be done obliquely by describing the risks to your macroeconomic objectives (as in the sentence typed in green that is the successor to the balance-of-risks language) or it can be done more directly by stating the direction of rates and the pace with which you anticipate acting (the sentences in blue type that are the successors to the “considerable period” language of 2003). In both places, there is the opportunity to convey that these judgments are conditional in nature.

Not every branch of an evolutionary tree ends in success, which is witnessed by the fact that each of you started life with an appendix. The equivalent to the vestigial appendix in the current statement is the first part of the paragraph. Its hints about the direction of rates through its characterization of the risks to your objectives have been trumped by the more explicit nature of the final two sentences. And the fact that the Committee has tightened five times while depicting the risks as balanced must have been read in markets as implicitly revealing that the assessment was based on a policy path you viewed as appropriate, not the assumption of an unchanged policy that was employed when the balance-of-risks formulation was introduced in 2000. If the risk assessment, indeed, is conditioned on your expecting to do the right thing, you would presumably always choose a balanced assessment unless you

thought you were behind the curve and expected to stay that way or thought that the possible outcomes had a decided skew. Thus, this formulation will generally not be informative about the direction of rates.

As the time approaches when you are no longer confident there is any more policy accommodation left to remove, you will face the three choices listed in the bottom panel.

First, the Committee could get out of the business of hinting—either obliquely or directly—about its future actions. While this has been advocated previously by some on the Committee, you would be giving up an opportunity to help to keep market interest rate expectations aligned with your own—opportunities you took over the past 1½ years and which apparently paid off. Even if you are not sure where rates are headed, there may be some merit in revealing your tentative assessment so as to make it less likely that investors come to a different and inappropriate conclusion.

Second, the Committee could try to revive the risk assessment. One way, as I suggested back in August, would be to base it on the explicit assumption of an unchanged stance of policy for the next few quarters and couch it in terms of probabilities rather than risks. You might find it appealing to introduce such language when potential outcomes really seem even-sided at the prevailing federal funds rate—a possibility not necessarily that distant in time. Such language need not be formulaic, as history suggests that agreeing on a formula is neither a happy experience nor one that results in a durable solution.

Third, you could feel that the balance-of-risks assessment in the first part of the paragraph is no longer necessary and instead rely on the gradual evolution of the latter part to convey your sense of the future path of interest rates. As a governance issue, though, it will be harder to be inclusive in drafting when there is less of a structural foundation agreed upon in advance.

These may be worries for the future which you do not feel as palpably as does your Secretary, but time is passing by.

Your final exhibit repeats Table 1 from the Bluebook without change. I draw your attention to alternative B, which basically repeats the statement that you issued in December.

CHAIRMAN GREENSPAN. Questions for Vincent?

V ICE CHAIRMAN GEITHNER. Vincent, in exhibit 2, this is a measure of the point on the calendar where the market expects us to stop?

MR. REINHART. To stop tightening, yes.

MR. LACKER. Meaning it's the point where the future path of the fed funds rate from that point on is perfectly flat. So it's not the probability of when we will first pause.

MR. REINHART. Right. This is an alternative explanation that says you will not pause but will stop. This views the expected federal funds futures curve as a weighted average of a succession of moves followed by a flat funds rate.

MR. LACKER. I interpreted you as saying that an identifying assumption more or less built in is that we move, move, move, move, move and then stop—that we don't pause and then continue moving again.

MR. REINHART. Right. But I would point out that our understanding of expectations formation is such that you could also direct it to mean that you'll do a  $\frac{1}{4}$  point move every other meeting and fit the probability of those events. It's just what identifying assumption you use.

MR. LACKER. Does this use options at all?

MR. REINHART. No, this just uses the futures rate. But, actually, that has been an extension we're looking at to see what this model does imply about the distribution, the pdf [probability density function] from options prices.

MR. LACKER. Well, with enough pdf you wouldn't need the identifying assumption.

MR. REINHART. Right.

VICE CHAIRMAN GEITHNER. Again, I'm sorry to ask this; I should know the answer. But are you projecting forward the range of estimated equilibrium real rates?

MR. REINHART. I'm assuming that those "rivers" just move sideways.

VICE CHAIRMAN GEITHNER. That they move sideways? Does that make sense?

MR. REINHART. Probably not. A number of you have articulated over the course of this meeting reasons why they'd probably drift up over time, one of which is that as the output gap closes, you have less room to go and you presumably would have a higher real rate.

VICE CHAIRMAN GEITHNER. Wouldn't that significantly alter the path in the upper panels if that were true?

MR. REINHART. If you follow the staff forecast, the answer is “not really.” It could shift these colors over a bar or two but it would not materially influence the story.

CHAIRMAN GREENSPAN. Further questions?

MR. MOSKOW. Vincent, have you drafted a sentence to see what alternative 2 would look like on exhibit 3 using probability?

MR. REINHART. Yes, I circulated that to the Committee back in August, I think. Essentially it says that the Committee judges that if the current level of the federal funds rate were to be maintained, the probability of output growth being above its sustainable pace about equals the probability that it would be below. Also, the probability that inflation would be above that consistent with price stability is about equal to that of it being below. That is, you essentially call out a point on the fan chart and characterize where you think the outcomes are relative to that. And that sentence would characterize it in terms of the next few quarters. It said “If the current amount of policy accommodation were maintained over the next few quarters, then the Committee assesses that...” It was stated in those terms.

CHAIRMAN GREENSPAN. President Minehan.

MS. MINEHAN. Thank you. I have a question, Vincent. My memory may not serve me well, but I recall our going through the communications process step-by-step. One of the reasons—though maybe not the only reason—we got into the discussion of risks for the future had to do with the fact that we had previously used a bias formulation, in part, to get consensus around the table. And that was thought to be information that ought to be communicated to the markets and, in fact, it was communicated, as I recall, inadvertently or advertently. Anyway, we ended up moving into the more formulaic approach to talking about the balance of risks.

What is your impression about whether we really have the option to do alternative 1? Has this long period we’ve had of speculating on probabilities gotten us into a bind? Communication is a very tricky thing. Is this one of those cases where after we’ve done it, we can’t take it back without looking as if we’re returning to the Dark Ages of nontransparency? Do we really have the

option of saying only what we did and why we did it, even recognizing that the explanation of why we did it would always have some forward-looking aspect to it because, of course, monetary policy works with a lag, and so forth. Is alternative 1 really something we can do?

MR. REINHART. I would say that there are tradeoffs possible. That is, if all you did was cut out the last paragraph, it would be seen and interpreted by markets as cutting back on the degree of transparency in a retrograde step. But if you wanted to, you could expand your characterization of the outlook in the previous paragraph, implicitly providing some sort of forecast and, therefore, hinting at the future direction of rates. You could be more numeric in your characterization of the outlook, say, by releasing your central tendency surveys more frequently. So, there are some possibilities. But I think that just dropping it outright would probably not be well received.

MS. MINEHAN. I've sensed from time to time that a couple of people around the table have agreed with the general premise that trying to tell the markets where policy is going—except when we really needed to do it, which is how I would characterize the situation in 2003 and 2004—isn't something they're necessarily comfortable with. I know I'm not comfortable with it.

MR. REINHART. But telling people you're not sure of the future direction of rates is giving them information, and it may be superior to being silent about that and leaving them to form potentially inappropriate expectations.

MS. MINEHAN. Yes.

VICE CHAIRMAN GEITHNER. Should we infer from your presentation that you would not change the structure of this paragraph until we reach the point where the probability of a move up equals the probability of a move down? Would you say that the point at which the desirable path of the fed funds rate is flat is the optimal time for evolution or would it be ahead of that point?

MR. REINHART. I think there are going to be a couple of speed bumps in the process along the way. The first is earlier in the rationale portion of the paragraph in your characterization of the degree of policy accommodation. One could imagine a succession of steps, as you continue to move the funds rate up, that will get you to a point where you can no longer confidently assert that

policy is accommodative. You'd therefore have to make that a qualified statement rather than an explicit statement.

VICE CHAIRMAN GEITHNER. You'd say that would be an obvious intermediate change.

MR. REINHART. That's the first speed bump that you think about if you try to walk through the changes that might need to be made in the statement going forward given, say, the Greenbook outlook. If you wanted to introduce new language, an opportunity to do so would come when you're just not quite sure of the direction of rates—when the funds rate is in a zone where the Committee can no longer be confident that it can remove policy accommodation at a measured pace. When you reach the point where that is no longer true, you're going to have to drop that sentence. You're going to have to ask the question: Should we try to change the risk assessment or try to write another sentence that characterizes the Committee's view that it is not sure of the future direction of rates?

VICE CHAIRMAN GEITHNER. I have one more question. Should one also infer from your presentation that you think the optimal path of monetary policy in the period ahead is to get behind us all the moves necessary to get the funds rate closer to the midpoint of the range of its equilibrium? Are you saying that we should steadily get those moves done, so we get more quickly to the point where one could expect a flatter path going forward, or are you not suggesting that?

MR. REINHART. I don't think there was advocacy in the two different interpretations of the federal funds curve, only a suggestion that if you are not of the view that the path will involve a  $\frac{1}{4}$  point move at every meeting, it would be helpful to define "measured" once again. I say that because there is a real risk that market participants, having extrapolated from six policy firmings by the end of today, are going to say that you are on a path to do so. Indeed, it may have come to the point where they wouldn't expect a pause unless you signaled a pause—that is, that you wouldn't feel that you could keep policy unchanged with the existing statement.

VICE CHAIRMAN GEITHNER. And yet if you repeat that language in the minutes again, as you suggested, reasonable people might interpret that as a conscious decision to try to signal in

some sense that a pause is approaching. That's a little awkward to justify, given that we're in a period of time where I think the probability the market is attributing to the next three moves is higher than it has been over the last six to nine months.

MR. REINHART. But you could make it a symmetric statement. You could say that the measured pace language is not inconsistent with a pause in the policy of 25 basis point moves at each meeting nor with a larger move. There was at least one member who indicated a sentiment for a firmer policy.

CHAIRMAN GREENSPAN. We originally raised the issue of accommodation when we hit 1.75 on the funds rate on the way down. At what point do we begin to get responses? I haven't heard anybody raise the question as to a seeming asymmetry in our judgment of where accommodation is, unless it's perceived as a significantly moving target. One could argue that up to now there is no necessary inconsistency; one answer is that we forgot to mention that our policy was accommodative earlier on the way down. But we have to have some way of approaching this question because it's going to come up with the first speed bump that you were referring to. I think we have to address it, and hopefully we'll do so somewhat in advance.

Further questions for Vincent? If not, let me get started. I'll be very short because I don't have very much more to say that I haven't said previously. There is one issue, however, that I think does require continuous awareness. And that is that, as many of you have mentioned, the chance of our getting through to the end of 2006 with the economic outcome having the benign aspects of the forecast that we see has to have a very low probability.

There's something built in to both our econometric structures and, indeed, in the way markets function, that is giving us this continuous, smooth path coming off of Governor Ferguson's sweet spot. The reason we get that is, in part, because as an economy continues to grow in a seemingly balanced way, the rational projection includes an increased probability that growth will continue that way in the subsequent six months. That is, if you're in the early stages of an economic recovery, you're never quite sure that in fact you're in a recovery. So your estimate of the chance

that the next six months will continue to be favorable is lower than it is when you're much further into the cycle. The latter point is when you begin to have a projection that the recovery will continue. You think of it in terms of: Well, economic activity has been going up for the last two years, or three or four years, and what is the probability that it will continue to do so? And that gets built in to the decisionmaking process. You begin to see a quickening of capital investment. You see orders that begin to be a little forward-looking. The degree of confidence continues to be buoyed, stock markets rise, and yield spreads fall to exceptionally low levels.

The problem with that scenario is twofold: One, history suggests that it will come to an end; and, two, arithmetic in a way produces an end, largely because, when you get risk premiums down at very low levels, they can only go in one direction. It is the inverse of where you can go when you're at the top of the mountain. So this will break down at some point. Something is going to happen because it always has. And human nature never seems to have veered very far from this type of model.

Since the early 1980s, we seem to have been able to take these adjustments very smoothly. The imbalances occur, but there's sufficient flexibility in the system that the corrections seem to occur in a manner which essentially, at least in the past 20 years, has given us a business cycle of extraordinarily shallow dimension. There's no question that it's not only the experience of this most recent period that is driving risk premiums down but also the fact that nothing material has happened in the past 20 years. In other words, yes, stock prices have fallen, and yes, interest rates have gone up, but they've always reversed. And over the longer run, the rates of return in the past 20 years have been perceived as quite beneficent.

So, what concerns me about the outlook is that while I can't give you a better alternative than the Greenbook forecast—because that is, indeed, the presumed most likely outcome—it has built in to it the seeds of its own imbalances, and we don't know where they are. I'm not even talking about exogenous shocks. I'm talking about an endogenous system that creates a problem because human nature is such that people rationally tend to become increasingly confident that

stability will continue the longer stability is what they have perceived. We can't get that into our econometric models because there isn't an endogenous or even exogenous variable that would essentially be "human nature," and yet we know it's going to happen.

So, we have to be careful because something is going to go wrong here, and I think the most probable thing is that we're underestimating the potential inflation pickup. I'm not saying that the probability is for an inflation pickup; I'm just saying that our forecast of the probability of a pickup is too low. And that will change the dynamics of this whole situation. The sweet spot will turn sour. And until then, I suggest that we just sit around and enjoy what we have. [Laughter] It's not going to get any better and it's not going to continue indefinitely.

So, my bottom line conclusion is what everyone around this table, I presume, would prefer—namely, another 25 basis points on the funds rate and the same statement except for one word. I think when we look back, we will find that what we have been able to do—and are still able to do—really has been quite successful. But that will stop. And when it stops, we're going to have a lot of the problems we've just been discussing with regard to how the statement should be modified. I suggest to you that when it stops, our ability to forecast what's going to happen next will fall very dramatically, because we're not going to anticipate the stop.

I was looking at the weak figures in January, and they were sort of building up. So I was saying to myself over the last couple of weeks that there's something a little disturbing about the numbers that are coming in. Now that has stopped. We are beginning to get countervailing positive forces again. Presumably, we will look back at January as something of a pause, with retail sales not doing all that well, motor vehicle sales falling, and the purchasing managers' data in New York, Philadelphia, and for the country as a whole generally starting to look a bit less formidable. In other words, there's been the feel of an unreal significant slowdown and change. But that has been the way this whole cycle has evolved. It has had a pattern of pause/un-pause, pause/un-pause; it doesn't go flat. And this is the process by which the recovery has been moving forward. At some point, there's going to be a pause/un-pause, pause, pause, pause, pause, and then we'll know we're in the

soup. Something will happen. So, I merely put forward that very tightly analytical—[laughter]—empirical model of the outlook and make the recommendation I've been making for quite a while, namely, an increase in the funds rate of 25 basis points. And, in this case, the statement I'm proposing is literally almost wholly unchanged from the previous statement. Comments? President Gynn.

MR. GYNN. I support your recommendation, Mr. Chairman.

CHAIRMAN GREENSPAN. Governor Kohn.

MR. KOHN. I support the recommendation.

CHAIRMAN GREENSPAN. President Minehan.

MS. MINEHAN. I support the recommendation also.

CHAIRMAN GREENSPAN. President Lacker.

MR. LACKER. I do, as well.

MS. PIANALTO. I support the recommendation.

MR. SANTOMERO. I support the recommendation.

MR. HOENIG. I support it.

MS. YELLEN. I support your recommendation.

MR. MOSKOW. I support your recommendation, but I do want to make a couple of brief comments. While we're sitting around enjoying this, as you put it, I think it would be helpful to flesh out these three alternatives—probably within the Bluebook. I think that would be the appropriate way to start looking at this.

CHAIRMAN GREENSPAN. I've been impressed with what Vincent has been doing here; I think this has been very helpful. And I think it's a useful way of coming at the problem—anticipating inevitable changes and being sufficiently ahead of the curve so that we can all come to an agreement as to what we will do, when we have to do it, because we may not have all that much lead time.

MR. MOSKOW. So, fleshing them out in the Bluebook would be my suggestion. Also, with regard to the Microsoft dividend, I do want to assure Governor Ferguson that we're hoping to move it to Michigan. [Laughter]

MR. STERN. I support the recommendation.

MR. POOLE. I support the recommendation and the reasoning. [Laughter]

MS. HOLCOMB. I support the recommendation.

MR. BERNANKE. I support the recommendation, and I promise to try to be happy.

[Laughter]

MR. OLSON. I support the recommendation and I am happy. [Laughter]

MS. BIES. I support your recommendation.

MR. FERGUSON. I support your recommendation, but I must say you leave us all feeling like a frog in water—[laughter]—with the temperature of the water gradually rising. The water gets hotter but it's not so hot that it's boiling. You have to let us know when it really starts to get too hot.

CHAIRMAN GREENSPAN. I would say that that econometric model rivals the one that the staff has built up over the years!

MR. GRAMLICH. I support your recommendation.

VICE CHAIRMAN GEITHNER. I support your recommendation.

MS. DANKER. I'll read the directive and the risk assessment language from page 29 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 increasing the federal funds rate to an average of around 2½ percent." "The Committee perceives the upside and downside risks to the attainment of both sustainable growth and price stability for the next few quarters to be roughly equal. With underlying inflation expected to be relatively low, the Committee believes that policy accommodation can be removed at a pace that is likely to be

measured. Nonetheless, the Committee will respond to changes in economic prospects as needed to fulfill its obligation to maintain price stability.”

CHAIRMAN GREENSPAN. Call the roll, please.

MS. DANKER.

Chairman Greenspan	Yes
Vice Chairman Geithner	Yes
Governor Bernanke	Yes
Governor Bies	Yes
Governor Ferguson	Yes
Governor Gramlich	Yes
President Guynn	Yes
Governor Kohn	Yes
President Moskow	Yes
Governor Olson	Yes
President Santomero	Yes
President Stern	Yes

CHAIRMAN GREENSPAN. Before we close, Vincent has a few remarks he'd like to make.

MR. REINHART. Over the intermeeting period, I surveyed you about whether the summary of your economic projections should be expedited—that is, released next week rather than three weeks later when the Chairman delivers the Monetary Policy Report in testimony to the Congress.

My experience in surveying you has been that if I ask the 19 of you “What is the color of an orange?” I couldn't be sure of getting a majority on a single answer. [Laughter] This most recent survey was no exception. Almost as many of you strongly endorsed an expedited release of your projections as strongly opposed it. An equal number of you endorsed it as opposed it, and there were two lonely people who were indifferent. [Laughter] Thus, since expediting the release of the forecast is a decision that cannot be reversed, it doesn't seem appropriate to move forward with a discussion of it today. But let me add that one argument in favor of expediting the release of the forecast seems particularly pertinent at this time: There's a risk that if those forecasts are particularly stale when the time comes for the release of the Monetary Policy Report, it will be harder to convey

a consistent message to the public. This is pertinent now because the employment report will be released this Friday, raising the possibility that material changes in your economic projections will be necessary. It seems appropriate, then, to give you a little more time than usual to revise your projections. So I would ask that you get your final forecast to Dave Stockton by the close of business next Monday.

MS. MINEHAN. We get an extra day.

MR. REINHART. You get the weekend. Feel free to use it all!

CHAIRMAN GREENSPAN. The next meeting of this Committee is March 22. Before we close this meeting, let's take a brief recess while the Federal Reserve Board deliberates on the requests we have for discount rate changes. We shall return.

[Recess]

CHAIRMAN GREENSPAN. I wish to announce that in record time the Federal Reserve Board acted expeditiously to change the discount rate, and you all know the direction and the amount. As a consequence, I now adjourn this meeting and suggest that we go to lunch.

END OF MEETING