Meeting of the Federal Open Market Committee on
June 29-30, 2004

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., starting at 2:30 p.m. on Tuesday, June 29, 2004, and continuing on Wednesday, June 30, 2004, at 9:00 a.m. Those present were the following:

Mr. Greenspan, Chairman
Mr. Geithner, Vice Chairman
Mr. Bernanke
Ms. Bies
Mr. Ferguson
Mr. Gramlich
Mr. Hoenig
Mr. Kohn
Ms. Minehan
Mr. Olson
Ms. Pianalto
Mr. Poole

Ms. Cumming, Messrs. McTeer, Moskow, Santomero, and Stern, Alternate Members of the Federal Open Market Committee

Mr. Guynn and Ms. Yellen, Presidents of the Federal Reserve Banks of Atlanta and San Francisco, respectively

Mr. Lacker, President-elect of the Federal Reserve Bank of Richmond

Mr. Reinhart, Secretary and Economist
Mr. Bernard, Deputy Secretary
Ms. Smith, Assistant Secretary
Mr. Mattingly, General Counsel
Ms. Johnson, Economist
Mr. Stockton, Economist

Messrs. Connors, Fuhrer, Hakkio, Howard, Madigan, Sniderman, Slifman, Tracy, and Wilcox, Associate Economists

Mr. Kos, Manager, System Open Market Account

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

Messrs. Clouse, Kamin,[1] and Whitesell, Deputy Associate Directors, Divisions of Monetary Affairs, International Finance, and Monetary Affairs, respectively, Board of Governors

Messrs. English, Gagnon,[1] Leahy,[1] and Sheets, Assistant Directors, Divisions of Monetary Affairs, International Finance, International Finance, 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. Thomas,[1] Section Chief, Division of International Finance, Board of Governors

Ms. Kusko[2] and Mr. Zakrajsek, Senior Economists, Divisions of Research and Statistics and Monetary Affairs, respectively, Board of Governors

Mr. Carpenter,[2] 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. Lyon, First Vice President, Federal Reserve Bank of Minneapolis

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

Messrs. Eisenbeis, Evans, Goodfriend, Mses. Mester and Perelmuter,[1] Messrs. Rolnick and Rosenblum, Senior Vice Presidents, Federal Reserve Banks of Atlanta, Chicago, Richmond, Philadelphia, New York, Minneapolis, and Dallas, respectively

Ms. Goldberg[1] and Mr. Thornton, Vice Presidents, Federal Reserve Banks of New York and St, Louis, respectively

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[1] Attended portion of the meeting relating to the discussion of prospective external adjustment.
[2] Attended portion of the meeting relating to the discussion of economic developments.

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June 29, 2004—Afternoon Session

CHAIRMAN GREENSPAN. Good afternoon, everybody. At the outset, I would like to welcome President Yellen and President-elect Lacker to their first FOMC meeting in their new roles. Janet Yellen, as all of you know—or at least those of us on this side of the table—served on the Board from August ’94 to February ’97. Jeff Lacker has been on the staff of the Federal Reserve Bank of Richmond since 1989 and has served as Director of Research since 1999. Welcome to the table.

On a less happy note, Virgil Mattingly has decided that his apprenticeship here as the General Counsel of the Board and the FOMC for the last fifteen years is coming to an end. Virgil has been in the Board’s Legal Division for thirty years. Virgil, your absence will be duly noted—I don’t need to tell you nor do I have to tell any of the members around this table about the value of the contributions you have made and that have been felt implicitly in the deliberations of this organization. The fact that we hear from you so rarely at these meetings is testimony of how well you keep us out of trouble! [Laughter] And that, in my judgment, is the fundamental role of the General Counsel. We wish you well in whatever activities you choose to pursue, and we trust you will come back and visit with us on occasion just to say hello.

MR. MATTINGLY. After one year! [Laughter] [Applause]

CHAIRMAN GREENSPAN. Virgil always gets the last legal zing. [Laughter] It has been a long run; you’ve been here as General Counsel of the Committee for almost my full term, and it’s getting long in the tooth also! Would somebody like to move approval of the minutes for the meeting of May 4?

MS. MINEHAN. So move.

MR. FERGUSON. I move approval.

CHAIRMAN GREENSPAN. Approved without objection. We will now move to the special presentation on prospective external adjustments, and I call on Karen Johnson.

MS. JOHNSON.[1] Thank you, Mr. Chairman. You should have a packet of charts labeled "U.S. External Adjustment" in front of you. Our topic today is U.S. external adjustment. The "adjustment" that is our focus starts with the recognition that the United States is running a large and growing deficit vis-à-vis the rest of the world in the use of goods and services—a deficit that makes obvious our interdependency with foreign economic behavior. As a result, some analysts are concerned that a change in foreign behavior at some point may have unwelcome consequences for us. But in today's interdependent global economy, such vulnerability is present even for those in external balance or surplus. In our presentation today, we will analyze the factors behind our growing external deficit and consider what circumstances might foster its reversal. Of particular concern will be the implications of various alternatives for U.S. asset prices, especially the foreign exchange value of the dollar.

One direct measure of our external deficit (shown in the top panel) is the balance of payments concept termed the "current account balance"—that is, the sum of the trade balance, net investment income, and net foreign transfers. For many years the U.S. current account balance has been driven for the most part by the trade balance. Both balances began a period of substantial decline in 1996 that was only briefly interrupted by the recession in 2001.

The price-adjusted exchange value of the dollar in terms of the currencies of a large number of our trading partners (the dotted blue line) is central to our story for two reasons. First, the dollar exchange rate is an important price variable in most, if not all, of the significant demand-and-supply relationships in our complex story. Second, the dollar exchange rate is part of the transmission mechanism of U.S. monetary policy and influences U.S. inflation determination. Note that the dollar began to appreciate from a low point in early 1995—in advance of the downturn in the trade balance—and generally continued to rise until early 2002. The nominal exchange value of the dollar in terms of the major foreign currencies (the green line in the middle left panel) has come even further off its 2002 peak than has the more inclusive broad real dollar, nearly returning to its 1995 level. This difference reflects the fact that, in terms of the currencies of our other important trading partners (the dashed red line), the dollar has risen somewhat in nominal terms since early 2002. The dollar exchange rates of the major currencies have tended to be more flexible and more market driven than some of the OITP currencies, such as the Chinese renminbi; and the dollar has appreciated against some of these other currencies, in particular the Mexican peso.

Persistent current account deficits cumulate to the net international investment position, shown to the right, which measures our growing stock of indebtedness to the

[1] The materials used by Ms. Johnson and Mr. Gagnon are appended to this transcript (appendix 1).

rest of the world. This large and growing stock of claims on the United States must be held at all times, and one intuitive perspective on the sustainability of our external position is that this stock cannot increase relative to our GDP forever. Every import and export transaction in the current account has a financial counterpart. Except for measurement error, the current account balance equals the net of all the international financial transactions. There are, of course, huge volumes of cross-border transactions between assets—unrelated to trade finance and driven by complex incentives of risk and return—that have consequences for asset prices, including exchange rates. Recent data for elements of those financial flows, reported in the bottom left panel, show that private foreign inflows to purchase U.S. securities (line 3) are very large, particularly in relation to private U.S. outflows to purchase foreign securities (line 4) and net direct investment (line 5). Moreover, these flows increased sharply in the first quarter. Nevertheless, foreign official inflows (line 2), which had about doubled in 2003, rose significantly further earlier this year.

From a macroeconomic perspective and with the public and private sectors combined, the extent to which the United States invests more than it saves corresponds to resources borrowed from abroad—the blue shaded region labeled "net foreign lending" in the bottom right panel. This is the NIPA analogue to the current account balance. As the rise in U.S. net domestic investment in the 1990s outpaced that in net saving, our external deficit rose. As our saving subsequently declined sharply, the external deficit widened further.

Unless and until the trade balance begins to narrow, adjustment is not yet occurring. Indeed, as was argued in the background paper circulated to the Committee, stability in the ratio of our foreign indebtedness to nominal GDP requires that the trade deficit eventually return to near zero. U.S. trade data are presented at the top of your next exhibit. The yellow shaded area represents the trade deficit, which has reached a record level. To the right of the vertical line, which is positioned at the latest actual data point, we have shown a simple extrapolation of imports and exports—based on standard partial equilibrium trade equations—for the case in which real GDP here and abroad grows at potential and the real value of the dollar remains at its current level. With imports already substantially larger than exports and with foreign potential growth reasonably robust but slightly less than U.S. potential growth, the change in imports tends to exceed that in exports, and so in this case there is no adjustment through 2010. The green bars measure the change in the trade balance. For the trade balance to narrow significantly, exports would need to grow rapidly relative to import growth for an extended period.

The middle panel provides a summary of the composition and magnitude of cross-border financial flows for the same period, expressed as a percent of GDP. The trade balance above accounts for most of the change in the current account balance, shown in yellow. U.S. private financial outflows, in tan, also must be financed; and the sum of these two is the counterpart to foreign private financial inflows (in blue) plus net official flows (in red). The extrapolation through 2010 incorporates the trade outcome from the top panel and plausible staff projections of U.S. and foreign private financial flows. Of course, private flows could behave differently, depending on the incentives perceived by investors here and abroad. To the extent that the flows shown in blue do not fully finance the current account deficit plus U.S. private outflows, foreign official intervention may fill the remaining gap, as shown here. Otherwise, exchange rates, other prices, and incomes here and abroad would change, resulting in a current account position and private flows that would satisfy the balance of payments norms.

The bottom two panels provide some detail on recent stocks of dollar holdings by foreign officials (the left panel) and foreign private investors (the right panel) that correspond to the flows in the middle panel. Estimates based on data through April show that, of the total foreign official holdings of more than $1,600 billion (line 1), about two-thirds consist of Treasury securities (line 2). The end of 2001 was very near the time of the most recent peak in the value of the dollar. Changes from then through April are shown in the column to the right and reveal that the change in the total is nearly accounted for by the change in holdings of "selected" Asia (line 3)—economies whose monetary authorities have engaged in substantial foreign exchange intervention. The incentives behind dollar acquisition by foreign officials, for the most part, relate to their objectives for their respective exchange rates and the competitiveness of their exports.

Foreign private holdings are significantly in fixed-income securities—lines 1, 2, and 3 in the right panel. These investors are thus exposed to dollar exchange rate risk and to U.S. market interest rate risk. Foreign holdings of U.S. equity (line 4) are also large but entail somewhat different risks. Over the period since the dollar began its appreciation in 1995, foreign investors have more than doubled their holdings of each of these categories of assets. Nevertheless, because U.S. securities markets are very large and quite liquid, changes in preferences on the part of foreign investors among these categories of assets need not have major implications for their prices. However, as long as the U.S. current account remains in deficit, net foreign claims on U.S. assets must continue to rise in total. Any diminution in the appetite of investors for U.S. assets would first trigger valuation changes, primarily via the exchange rate, that would lower the foreign-currency denominated value of their total claims on the United States.

Such a change in investor appetite could well be the first step in the external adjustment process. Some characteristics of an "orderly" adjustment are listed in the top left panel of your next exhibit. Although there are a great many possible alternative paths for adjustment that could be termed "orderly," in the sense that financial markets would continue to function within normal ranges, such an outcome seems more likely to occur if investors are attracted by improved returns abroad rather than discouraged by unfavorable changes in U.S. prospects. Various specifics along these paths would differ, but all would be characterized by continued, albeit declining, net financial inflows into the U.S. economy. In addition, because lasting correction of the U.S. external deficit cannot be achieved through cyclical slowing of U.S. GDP growth to below potential and the associated temporary restraint on imports, external adjustment such that exports increase more than imports almost certainly requires dollar depreciation.

The panel to the right expresses the data on foreign holdings of U.S. assets from the previous exhibit as shares relative to the total outstanding amount for each category. Foreign holdings of U.S. Treasury securities (line 1) amount to nearly 50 percent of the outstanding stock, with the official share about 30 percent and the private share (not shown) about 20 percent. Foreign holdings are more than 10 percent of agency securities. The percent held abroad is only slightly higher for equities, with 12 percent of U.S. equities owned by foreign investors, virtually all of whom are private. These numbers are large, and they have risen over time. But moderate financial inflows could continue over time even if these shares stabilize or edge down.

There appears to be ample scope for continued financial inflows, as reflected in the bottom left panel. For most of the foreign countries shown, in December 2002 domestic securities made up most of their total bond and equity holdings, in many cases more than 80 percent. Moreover, U.S. securities are generally just a moderate portion of their nondomestic holdings. Accordingly, it does not seem to be the case that foreign portfolios are already overly invested in U.S. assets.

If stronger demand for U.S. exports is to contribute to adjustment, from which countries might it come? The panel on the right reports that the economies with the largest average share of U.S. exports in 2003 were Canada and western Europe (lines 1 and 2) followed by Mexico (line 3). These regions accounted for a slightly smaller share of the increase in U.S. exports over the past two years, shown in the second column. Note the jump in the share for China and Hong Kong (line 7) when viewed from the perspective of the change in exports. This increase is somewhat offset by the drop in Japan’s share (line 5). Taken together, our Asian trading partners (lines 4, 5, 7, and 8) accounted for 30 percent of the gain in exports. Income growth in Asia is likely to remain quite vigorous, with domestic demand a major source of strength. To a lesser degree, this outcome is likely for Canada and Mexico. Strong domestic demand in those regions will be necessary if U.S. exports are to accelerate.

The panel at the top left of your next exhibit is constructed to illustrate the sense in which there is a tradeoff between relative growth here and abroad and the minimum pace of real dollar depreciation required for the trade deficit to narrow. The line separating the shaded and nonshaded regions was calculated using standard partial equilibrium trade equations, and its position depends importantly on the current starting conditions, in particular the initial size of imports and exports. Given those quantities today, for any foreign minus U.S. growth gap (the horizontal axis) the unshaded area indicates what the annual rate of dollar depreciation (the vertical axis) would have to be over the near term for the U.S. trade deficit to begin to adjust, following the usual lags. In 2003, we were well above the line, with a growth gap of minus 1½ percentage points and real dollar depreciation of 8½ percent. The panel shows that the stronger relative foreign growth is, the less dollar depreciation would be required. However, even for growth outcomes very favorable to foreign activity, some dollar depreciation would be needed to get adjustment started. The staff estimates that the gap for relative potential growth is currently about minus ½ percent, so we have plotted the corresponding point on the line, marked by the box, as indicative of how far to the right on the horizontal axis we might tend to be. At that growth gap, dollar depreciation of more than 8 percent per year would be needed to start the process of external adjustment.

Overall, the implications for the U.S. economy of extended, gradual external adjustment—listed to the right—include that demand on the part of U.S. residents and foreigners shifts in favor of U.S.-made goods and services, thus boosting exports and reducing imports. In order for the United States no longer to depend so much on foreign saving, the extent to which U.S. domestic demand exceeds U.S. production potential must decline. Contractionary fiscal policy could contribute to restraining domestic demand and increasing net saving. Monetary policy would need to maintain full utilization of U.S. resources and may need to offset the expansionary implications of increased demand for U.S. goods. Significant resource shifts across production sectors may be needed, which could entail adjustment costs for the economy.

We cannot rule out that adjustment will be disorderly. In that case the primary concerns are about conditions in asset markets, where there could be abrupt price changes, increased volatility, and impaired liquidity, triggered by changed sentiment on the part of foreign and domestic investors about the attractiveness of U.S. assets. Because of the role of the exchange rate in cross-border transactions, dollar depreciation is likely to be at the center of any disorderly event. Given that some depreciation is part of virtually any external adjustment, depreciation in the case of a disorderly outcome would likely have to be large in magnitude and abrupt in pace. With global asset markets now highly linked, any abnormal developments in U.S. markets would be likely to spill over to asset markets elsewhere.

Where are the effects of such asset-price swings likely to matter most? The bottom left panel contains data on balance sheet risk faced by U.S. corporations via their debt denominated in foreign currency. Foreign currency issuance is just 4 percent of the total outstanding, and a substantial portion of that foreign currency risk may well have been hedged in the derivatives market. So this channel is not likely to have significant consequences. Foreign holdings of claims on the United States are shown by region in the panel to the right. In European portfolios, especially those in the United Kingdom, and in Canadian portfolios, holdings of U.S. assets are quite large relative to their respective GDPs. Negative balance sheet effects through declines in the exchange rate or U.S. asset prices could be expected to significantly impair economic activity in those regions and to be not inconsequential for the other countries shown. Joe Gagnon will continue our presentation.

MR. GAGNON. Your next exhibit considers the implications for both the U.S. and foreign economies of an abrupt depreciation of the dollar that could be associated with a disorderly adjustment. As described in the top left panel, we examine three scenarios that build on each other using the staff's FRB/Global model. We note at the outset that these scenarios are illustrative of some of the issues that may arise and should not be viewed as forecasts or even as particularly likely outcomes.

In scenario 1, there is an exogenous permanent drop in demand for dollar assets that would cause the broad real index of the dollar's value to decline 30 percent over the next two quarters in the absence of any responses in domestic and foreign interest rates. The only decline of this magnitude in the history of the broad real index occurred over a three-year period from 1985 to 1988. In this and subsequent scenarios, we assume that U.S. and foreign policy interest rates follow a Taylor rule. The dotted black line in the panel to the right shows that the dollar actually depreciates less than the full 30 percent in this scenario, as higher U.S. and lower foreign interest rates offset some of the depreciation shock. Column 1 of the middle panel shows that U.S. GDP (line 1) is about 2 percent higher after six quarters. The effect on the level of U.S. output peaks at just over 2 percent in early 2006 and then gradually unwinds. Higher output is more than accounted for by net exports (line 3), as domestic demand (line 2) declines. By the end of 2006, core PCE prices (line 4) are 1½ percent higher. This price increase is stretched out over ten quarters, so the annualized inflation rate never rises more than a percentage point above baseline. Most of this rise reflects the direct pass-through of higher import prices (line 5), but a little is attributable to the rise of output relative to potential. On its own, this shock would not be considered disorderly, and it reflects a relatively benign response to such an abrupt dollar depreciation. Nevertheless, the negative effect on trade-weighted foreign GDP (the dotted black line in the bottom left panel) is a bit larger than the positive effect on U.S. GDP as policy rates in many important U.S. trading partners hit the zero bound on nominal interest rates. Foreign real consumption does not fall as much as foreign output because dollar depreciation lowers the cost of imports to foreign consumers. The opposite effect is at work in the United States, showing that even though dollar depreciation is good for U.S. production, it does have adverse effects on U.S. consumers.

In scenario 2, we posit that this abrupt dollar depreciation is associated with a widespread loss of confidence in U.S. economic prospects that leads to a 250 basis point increase in the risk premium on equities and long-term bonds in the United States. The higher premium and lower expected profits cause U.S. equity prices to fall about 50 percent. Because of the importance of the U.S. economy and U.S. financial markets in the global economy, it is likely that such a large drop in U.S. equity prices would spread to foreign markets. The overall effect on foreign financial markets would likely be muted by safe-haven flows to government bonds in major foreign countries. Thus, we set the size of the foreign financial shock to have half as much effect on foreign output as the U.S. financial shock has on U.S. output. Asset-price declines add contractionary impulses to the simulation, and now U.S. GDP, shown in columns 3 and 4 of the middle panel, declines on balance. At the same time, the upward pressure on U.S. prices (line 4) is reduced a bit, owing to slack in resource utilization. As shown by the dashed red line in the bottom left panel, asset-price declines in foreign economies and spillovers from the United States have a substantial contractionary effect on our trading partners. Policy rates in most of these countries drop to zero early in the simulation and remain there.

Scenario 3 considers the possibility that, when policy rates hit zero, foreign central banks might engage in quantitative easing or other nontraditional policy actions to stimulate their economies. Because the channels for such policies are not built into the model, we chose to relax the zero bound on policy interest rates and allow these rates to become negative, still following a Taylor rule. As shown by the solid green line in the top right panel, easier monetary policy abroad leads to less dollar depreciation. Nevertheless, the level of U.S. GDP (line 1, columns 5 and 6 of the middle panel) is essentially identical to that in scenario 2. The reduced stimulus to U.S. GDP from a smaller depreciation is roughly offset by the reduced drag from a smaller contraction in foreign GDP, shown by the solid green line in the bottom left panel. The smaller depreciation helps to damp the rise in U.S. prices (line 4 of the middle panel). The bottom right panel displays the classic J-curve effect of a depreciation on the trade balance. Most of the effects are completed by early 2006. The trade deficit narrows about 1½ percent of GDP from the exchange rate shock alone and about 2 percent of GDP when other asset prices also drop. These scenarios engender a substantial degree of external adjustment, though not enough to eliminate the trade deficit, which is currently around 5 percent of GDP.

All together, these simulations clearly indicate that disorderly adjustment of the U.S. external balances is likely to have a very contractionary effect on foreign economic activity. A large dollar depreciation—which is likely to be at the heart of any disorderly adjustment—provides a substantial stimulus to U.S. exports that offsets much of the negative effects of any financial distress on U.S. activity. Meanwhile, lower U.S. imports are a direct drag on foreign economic activity.

In light of the dollar depreciation that occurred over the past two years, exhibit 6 explores whether external adjustment is already under way. The last major period of external adjustment in the United States occurred during the late 1980s. We find it instructive to compare the recent experience with that of the 1980s. The dashed line in the top left panel displays the rise and fall of the broad real dollar between 1979 and 1990. The solid red line displays the broad real dollar in recent years, with the peak of February 2002 aligned with the earlier peak of February 1985. The amplitude of the cycle was greater during the 1980s, but the broad contours look similar. The recent interruption in the depreciation is more pronounced than in any comparable period in 1985-87. Should the recent break in the dollar's downward trend persist, it would be reasonable to expect any adjustment to be interrupted. The top right panel displays the trade balance over the earlier and later periods. Despite the smaller swing in the dollar in the current episode, the trade deficit as a percent of GDP has widened more than during the 1980s. Abstracting from the effects of the 2001 recession and 2002 recovery, there does appear to have been a flattening out of the trade deficit recently. In the 1980s, the trade deficit did not begin to narrow until more than two years after the dollar peaked—we are just now approaching the comparable point in the current episode. The middle panel shows that external adjustment in the late 1980s was associated with a sustained higher growth rate of real exports (the dashed blue line) relative to growth of real imports (the solid green line). In the current episode, the growth rate of real imports has exceeded that of real exports continuously from 1997 through late last year, but the gap has now closed. Adjustment will require a further rise in the export growth rate relative to that of imports.

The bottom left panel displays weighted foreign real GDP growth minus U.S. GDP growth. As shown by the dashed line, foreign economies grew faster than the U.S. economy in the late 1980s. Robust foreign growth undoubtedly contributed to a relatively smooth adjustment process during this period. In contrast, during recent quarters, foreign economies on average have grown more slowly than the United States (the solid red line), and we are not projecting a reversal of this relationship in the near future. The bottom right panel gives some indication that the willingness of international investors to fund our widening external deficits may be diminishing. Net private inflows of securities have failed to continue rising since the dollar's peak in early 2002; foreign official inflows have taken up the slack to finance the continued growth of the current account deficit. A similar rise in official inflows occurred at the beginning of the adjustment process in the 1980s.

The top left panel of your final exhibit compares the recent behavior of import prices with the previous episode of adjustment. As shown by the red line, import prices have turned up with the dollar depreciation and the commodity price increases of the past couple of years. But the rate of increase is much smaller than that observed in the late 1980s. Moreover, unless the dollar depreciates significantly further, we expect that import-price inflation will drift down over the next year or so. The panel to the right shows that there was not a substantial increase in core consumer price inflation associated with the 1980s adjustment. We do not expect a major increase in core PCE inflation in the near future. Overall, the evidence to date points to a pause in the widening of the trade deficit, but that is far from a significant adjustment. Indeed, as Karen mentioned previously, if the dollar remains near its recent level we would project a renewed widening of the trade deficit.

In conclusion, we believe that recent levels of the U.S. external deficits are not sustainable indefinitely. However, we know little about the path that adjustment will ultimately follow, including how long our large trade deficits can be financed. The depreciation of the dollar in 2002 and 2003 has helped to slow the widening of the trade deficit, but there is no evidence that a sustained or significant adjustment has begun yet. Assuming that U.S. and foreign output remain close to our estimates of potential, a substantial further dollar depreciation is required just to get adjustment started. The relatively orderly adjustment of the late 1980s was associated with an acceleration of foreign economic activity and brighter investment prospects abroad. On the other hand, a disorderly adjustment process would more likely be associated with a loss of confidence in U.S. economic policies and prospects. In a disorderly adjustment, the contractionary effects on output could well be greater for foreign economies than for the U.S. economy. While asset-price declines tend to depress output both at home and abroad, dollar depreciation tends to boost U.S. production and damp foreign production. The effect on U.S. inflation of even a large depreciation is likely to be quite modest. Linda Goldberg will now continue our presentation.

MS. GOLDBERG.[2] I will be referring to the separate package of exhibits that you should also have in front of you. My portion of this briefing on U.S. external adjustment

[2] The materials used by Ms. Goldberg are appended to this transcript (appendix 2).

focuses on the exchange rate and trade exposure of U.S. industries. Some scenarios for closing the U.S. trade deficit involve depreciations of the dollar exchange rate against other currencies. Yet such depreciations do not affect all U.S. producers similarly. My background material provides various industry-level details. In my remarks today, I highlight four broad points. First, the most trade-oriented industries of the United States are in the manufacturing sector and account for almost half of manufacturing employment. There are also some high-trade-oriented raw-materials industries. Second, these trade-oriented industries are the ones expected to be stimulated most by dollar depreciation. Moreover, the currency that the dollar depreciates against is important; U.S. industries experience greater stimulus when the dollar depreciates against the euro or the yen, for example, than against the yuan. Third, for many industries, rates of exchange rate pass-through into import prices have been relatively stable over past decades. While there is evidence of reduced import-price responsiveness to exchange rates in some commodities, such declines in pass-through may have been temporary. My fourth point is that a few high-trade-oriented industries in the United States may account for the bulk of the import and export adjustments induced by dollar depreciation.

We begin by turning to the levels of international trade exposure of specific U.S. industries. We discuss three forms of trade exposure: (1) producer export orientation—the size of exports as a share of producer shipments; (2) the extent to which foreign producers have penetrated U.S. markets; and (3) industry use of imported inputs in the production processes—the share of production costs attributable to imported components and machines. We define high-trade-oriented industries as having export orientation above 20 percent and import penetration above 20 percent. These industries, shown in exhibit 1, are concentrated in our manufacturing sector and include chemicals; machinery excluding electrical; computers and electronics; electrical equipment; transportation equipment; miscellaneous manufacturing, such as toys and jewelry; and leather products, which is a small industry in the United States. Taken together, these industries account for 44 percent of U.S. manufacturing jobs. Outside of manufacturing, some raw materials sectors are also heavily trade oriented either in exports or imports. Moreover, if we broaden our criteria to allow a more narrow focus on import penetration, we can also include apparel, primary metal manufacturing, and furniture and fixtures. The dark blue bars in exhibit 1 show industry export shares, and the red bars display import penetration of these high-trade-oriented industries; both bars suggest producer revenue exposure to international trade. The yellow bars show the role of imported components in industry costs. The use of imported inputs means that producer costs rise when the dollar depreciates, as long as there is some pass-through of exchange rate changes into the prices of these imported components. To the extent that the same producers are exposed to the same currencies on the revenue and cost sides of their balance sheets, producer profits are partially hedged against currency fluctuations. All manufacturing and nonmanufacturing industries have revenue exposure in excess of their cost exposure to international trade. This leads to the expectation that a trade-weighted dollar depreciation would be stimulative, on average, for U.S. industries.

Exhibit 2 presents the countries that are the destinations for aggregate U.S. exports, as well as those that are the sources of our aggregate imports of goods. Canada and Mexico together account for more than 30 percent of total U.S. exports and imports. The euro area accounts for 15 percent. Our trade imbalance with China is suggested by the fact that that country accounts for only 4 percent of U.S. exports but 13 percent of our imports. These shares of countries in overall U.S. trade transactions are similar to those used by the Federal Reserve Board in constructing the aggregate exchange rate indexes for the United States. However, not all industries are exposed to the same trade partner countries or, consequently, to the same bilateral exchange rate movements. Aggregate exchange rate indexes, therefore, will not reflect the changing value of the dollar from the perspective of specific U.S. industries.

This point is made clear in exhibit 3, which shows the shares of the euro area, Japan, and China in the exports and imports of each of the most trade-oriented U.S. industries. As shown in the first column of the exhibit, the euro area is a key destination market for our exports. The implication is that the euro–dollar exchange rate figures prominently in the export competitiveness of, for example, chemical products, transportation equipment, and miscellaneous manufacturing products. In contrast, China is a relatively small destination market for U.S. manufactured goods but is larger in some import categories. The yuan–dollar exchange rate is significant mainly to the extent that it changes the competitiveness of U.S. producers relative to Chinese producers of goods being sold in the United States and abroad.

A policy-relevant issue here is whether a dollar depreciation against the yuan would stimulate U.S. industries. A stimulus would most likely occur in those industries where Chinese producers compete head to head with U.S. producers. I address this point in exhibit 4, which presents the amount of U.S. manufacturing employment in industries with different degrees of import penetration by China. The top row of exhibit 4 reveals that about 70 percent of U.S. manufacturing jobs are in industries where "made in China" goods account for a low share (less than 5 percent) of overall goods consumed by U.S. households. The bottom row shows that high levels of Chinese import penetration are strongest in those U.S. industries that account for very few U.S. jobs (only 2 percent of manufacturing). There are few industries where "made in China" accounts for more than 20 percent of our consumption of particular goods. In the middle rows of exhibit 4 are the industries with both import penetration by Chinese producers and sizable U.S. manufacturing employment. Industries such as furniture, electronic components, photographic equipment, and computers and peripherals are those that can potentially experience a switch in demand from Chinese goods to U.S. goods and are therefore the ones most likely to gain from a dollar depreciation against the yuan.

In evaluating industry exposure to dollar real exchange rate moves, let's first consider the progression of the dollar against five currencies since 2000. Exhibit 5, on the next page, shows that the dollar had strengthened against the yen, the euro, and the Canadian dollar through early 2002, before beginning its descent. Currently, the dollar is close to its weakest level in four and a half years against the Canadian dollar and the euro; it has had a more limited descent against the yen. By contrast, the dollar strengthened overall against the peso and the yuan. We use these different paths of exchange rates together with the weights of our trade partner countries in each industry to derive industry-specific export-weighted or import-weighted exchange rates. Exhibit 6 shows the dollar depreciation experienced by high-trade-oriented U.S. industries since February 2002, separately presented from the perspectives of U.S. exporters and U.S. import-competing producers. The recent dollar depreciation for high-trade-oriented industries has ranged from 7 percent to a little over 18 percent for U.S. exporters, as shown in the first data column of exhibit 6. The corresponding depreciation for U.S. import-competing producers has ranged from about 4 percent to nearly 27 percent. A key point here is that, compared with other high-trade-oriented industries, the industries that have China and Korea and even Japan as large trading partners have experienced relatively less depreciation and smaller changes in competitive conditions since February 2002.

As a final theme, in exhibit 7, I focus on exchange rate pass-through into U.S. import prices. This theme is central to knowing whether exchange rate changes can induce enough demand-switching out of imports and exports to make a dent in our trade balance. Pass-through is also important for understanding the potentially major distributional consequences induced by exchange rates within the United States. Exhibit 7 provides estimated rates of the pass-through of exchange rate changes into import prices for different bundles of imported commodities. The estimates in the left column are for regressions run using data spanning the late 1970s–early 1980s through the second quarter of 2004. The right-hand column estimates are for a more recent period, starting in 1990. The elasticities of import prices with respect to exchange rates that are statistically significant are in bold print. The first two rows of exhibit 7 show exchange rate pass-through into the prices of an aggregate bundle of United States imports. The historical relationship indicates that foreign producers generally absorb a high share of exchange rate changes in their profit margins in the short run (about 70 percent) and about half of exchange rate changes over the longer run (one year). A rule of thumb is that a 10 percent dollar depreciation raises U.S. dollar import prices by 5 percent. The stability of this relationship between exchange rate movements and import prices in the United States is actively debated, especially with regard to whether exchange rate pass-through has declined recently. The comparison between the full data sample estimates in the left column and the recent sample estimates in the right column is at the heart of this debate.

Exhibit 7 highlights three important points. (1) The U.S. dollar prices of beverage, tobacco, and mineral fuel imports are relatively insensitive to changes in exchange rates, with food prices only marginally sensitive. (2) Exchange rate pass-through rates into the import prices of food, chemical products, and some manufactured goods have been stable over time. A 10 percent dollar depreciation increases import prices of these goods by a cumulative 4 to 7 percent within a year. (3) Pass-through may have declined on U.S. imports of machinery and transportation equipment; the relationship estimated using historical data consistently overpredicted import prices for this commodity in 2002 through mid-2003. This category of machinery and transportation equipment has a heavy weight in the aggregate bundle of U.S. imports, which explains why we estimate lower pass-through since the 1990s on the overall bundle of U.S. imports excluding fuels. Overall, in my judgment, it is premature to assume systematic and persistent declines in exchange rate pass-through into import prices. The recent decline in pass-through may have been temporary. Import-price observations from late 2003 into early 2004 are back within the bounds of the longer-run historical relationships. We may see foreign producers reaching a limit on the extent to which they let their profit margins absorb the adverse exchange rate movements that have occurred. Therefore, more time needs to pass before we conclude that exchange rate pass-through into import prices is lower than what is implied by the rule-of-thumb estimate.

I conclude by combining these themes in a way that is directly relevant to the external adjustment process for the aggregate economy. Exhibit 8 shows the substantial role that the high-trade-oriented industries play in overall U.S. trade—accounting for more than 60 percent of our total exports and imports. These are the industries on the rightmost side and bottom of each pie chart. The significant pass-through of exchange rate changes into the import prices of these industries provides the scope for expenditure switching between domestic goods and imports. Such expenditure switching within the United States is particularly feasible in those industries where we continue to have a production and employment presence. In my opinion, these industries are likely to be the ones that bear the brunt of trade adjustment in the scenarios for closing U.S. external imbalances. Moreover, since industrialized countries are the dominant markets for our exports, adjustments to our international trade balance—and to U.S. jobs—will be most pronounced for changes in the dollar exchange rate against the euro and the yen rather than, for example, the yuan. Since Chinese imports compete directly with a much smaller portion of our products, dollar depreciation against the yuan would be less effective in the pursuit of a sizable shrinkage of our trade imbalance. Continual gradual declines in the dollar against the euro and the yen would lead to fewer U.S. imports and more U.S. exports. Changes in our trade balance will appear to be driven by the export adjustments. After cumulative large declines in the dollar, some U.S. producers might expand their market orientation to also focus on exporting instead of just U.S. markets, and this would then speed the overall adjustment of the trade balance. Although import quantities are changing in the background, too, the amount of total expenditure on imports will look relatively unchanged. Thank you for your attention and for the opportunity to present these points.

CHAIRMAN GREENSPAN. The last point that you made is particularly apt in the sense that we have a general tendency to evaluate these types of major adjustments in the context of historical relationships, and we don’t think in innovative terms largely because innovations are very difficult to anticipate. Let me just say that overall these presentations have provided an extraordinarily incisive view of the nature of the adjustment processes and a few of the potential avenues through which an ultimate solution can occur.

In your pass-through analysis, you made no reference to hedging characteristics. We do know, for example, that in very recent years the outstanding volume of dollar–euro foreign exchange swaps has gone up very dramatically. Clearly, to the extent that that is taking place, the greater return on exports is a combined function of hedging plus actual pass-throughs. And even though we may see a very sharp contraction in implicit profit margins of exporters out of Europe to the United States, for example, or anywhere, from the point of view of the exporters those losses may be fully offset through the exchange market. And the exporters' behavior doesn't change until ultimately as time goes on they cannot avoid the depreciation of exchange rates. So this is a process that slows the extent of adjustment but cannot alter it. I understand the data are really quite inadequate for any industry analysis, but we do have aggregate data, and I was wondering if you have come to any conclusion as to what we can learn from that.

MS. GOLDBERG. Let me start by mentioning the response of profits to exchange rate changes. First, at the industry level, if we use an aggregate trade-weighted exchange rate to look for the effects of exchange rates on profits of U.S. industries, we don't see anything that is statistically significant. If we use industry-specific weights, then we do get a significant relationship between exchange rate changes and the profitability of U.S. firms.

There is another effect of the dollar depreciation or appreciation on U.S. corporate profits that I didn't mention—in addition to the hedging story, which comes through multinational activities—and that is that, when the dollar moves, there is pretty much a one-to-one translation effect that shows up on the profits of multinational activities. That means, for example, that when the dollar depreciates, the foreign currency profits of these firms rise in value relative to their U.S. dollar profits. And that shows up as at least a temporary blip in the overall profitability of these firms.

I don't have any direct evidence on hedging activity and the effect that has had on pass-through and profitability, but some of the implications of exchange rates for profits are reduced by the increasing role of imported components used in production, which one can think of as another way that producers hedge foreign exchange rates.

CHAIRMAN GREENSPAN. We do see that the goods imported into the United States in dollars from Western Europe show a far smaller inflation rate than would be implied by the one-to-one corresponding foreign exchange rate. That implies either a significant decline in profit margins for European exporters or a very substantial shorting in effect of the euro in relation to the dollar. I gather, as I mentioned before, that this is a very short term phenomenon. I presume you have decided that its impact, while it may show up for a year or two, is really not a relevant consideration, largely because the foreign exchange currency swaps almost never go beyond a couple of years.

MS. GOLDBERG. Right.

MR. GAGNON. Mr. Chairman, may I?

CHAIRMAN GREENSPAN. Certainly.

MR. GAGNON. We have looked, partly at your suggestion, into whether the lags might have changed, because I think the mechanism you are talking about would likely show up as a longer pass-through lag. Obviously we don't have enough data to determine if this is a recent change in the past couple of years; we can't tell. We looked at whether the '90s were different from the '80s and couldn't find any evidence of a longer lag time. The lags are pretty short.

CHAIRMAN GREENSPAN. Thank you. Looking at the broader question of the very important impact in terms of contractionary effects on foreign economies, are the calculations here made interactive? In other words, are we getting two static estimates, or are we getting a dynamic estimate—a feedback from the United States to foreign economies and back?

MR. GAGNON. There would be dynamic feedbacks. We use the FRB/Global model, which will simultaneously capture both effects—from the United States on foreign economies and from foreign economies on this country. So, yes, it's a property of the model that things that happen in the United States have a bigger effect on the rest of the world than vice-versa, in large part because in this exhibit we weighted the rest of the world by U.S. trade weights to give greater weight to countries that trade with us a lot, such as Canada and Mexico and Asian countries. If we had done the weighting by market or PPP-GDP, say, we would get a smaller effect.

CHAIRMAN GREENSPAN. All of this says, at the end of the day, that the U.S. current account deficit is rising as a percent of our GDP, or in a certain sense as a percent of world GDP, implying that we must be getting comparably increasing surpluses elsewhere in the world. Or put another way, this implies that the dispersion of the world's current account balances is increasing. That is almost arithmetically necessary in the data that you have here. Are we seeing any signs of a slowdown in the globalization process? For example, in whatever time frame we wish to look, what do we see in the ratio of aggregate world exports to world GDP, aggregate external gross assets and liabilities as a percent of GDP, or any of these broader macro relationships that relate to the dispersion of current account balances worldwide? In short, granted the long delays on a lot of these types of data, which almost all come out of the IMF data system one way or another, is there any evidence that the rate of change here is slowing? What has been happening in the last couple of years, for example, to the data that are perhaps the most current—world exports as a percent of world GDP? How would you describe the quarterly pattern over the last several years?

MS. JOHNSON. To be honest, I don't have those numbers in front of me.

CHAIRMAN GREENSPAN. Could you get them?

MS. JOHNSON. We could certainly calculate world exports to world GDP. My guess is that it won't have slowed.

CHAIRMAN GREENSPAN. It slowed down very dramatically a couple of years ago.

MS. JOHNSON. Well, the recession.

CHAIRMAN GREENSPAN. Yes, but has it come all the way back?

MS. JOHNSON. I can't answer that exactly. Part of the problem, of course, is finding the units in which to add up world exports and world GDP; that requires us to use data sources that are not available on a timely basis. I don't have world GDP for Q1; that number doesn't exist.

CHAIRMAN GREENSPAN. You don't? What a shock! [Laughter]

MS. JOHNSON. But what is true is that the global recession and recovery tended to be more intensive in goods than in services. They tended to be investment driven, at least in the United States and to some extent elsewhere. And trade is more goods intensive than is GDP, broadly speaking. So we saw imports and exports react more than in proportion to our GDP or to our weighted average of foreign GDP; and presumably the rest of the world, added up, experienced the same phenomenon. I would assume that we are still on something of an uptrend and are washing through a cyclical phase, but we can look at that and get back to you on it.

Of the variables that relate to globalization in a somewhat more indirect way, the only ones that I know of that really slowed were the turnover measures on the foreign exchange market. I think, in part, the effect of the euro on foreign exchange turnover, as we measure it, probably explains why we saw declines in the volume of foreign exchange activity.

CHAIRMAN GREENSPAN. But isn't that also a function of the rate of change in the exchange rate itself?

MR. KOS. There were at least three components. One, there was an exchange rate effect. Two, there was the euro. And there was a third factor that had to do with the increased automation in terms of how the exchange market operated. Electronic brokering, for example, became very, very important.

CHAIRMAN GREENSPAN. It grosses up everything.

MR. KOS. Exactly. The numbers were down about 20 percent from '98 to '01, but all of the signals that we are getting now suggest that the survey just concluded in '04 will show another increase.

CHAIRMAN GREENSPAN. But the grossing doesn't tell us what the consolidated change in globalization is. The trade balances do, obviously, and the balance sheet changes do because they are all directly related algebraically to the current account balances and, hence, to the degree of dispersion. There is a chart in exhibit 2 of Karen's material, which has an extrapolation of the current account balances out to 2010, when it goes to over 9 percent of U.S. GDP. I'm looking at that and I'm saying, okay, why not? There's nothing in this presentation that says "no, that can't happen." It merely says that someday, somewhere, somehow, that trend is going to change. Let me just ask a quick side question. How did you conclude in that particular chart, the central one in exhibit 2, that foreign private financial flows would not add up to the gross flows and that, therefore, the net official flows had to fill in?

MS. JOHNSON. That was just imposed on the chart.

CHAIRMAN GREENSPAN. I see.

MS. JOHNSON. There were some assumptions made about continuing certain behaviors and extrapolating them and so forth, but I deliberately didn't want the red to have to go away, so I told the people who prepared the chart that it should have some red on it. [Laughter]

CHAIRMAN GREENSPAN. So the red is there first, and private financial inflows are the residual?

MS. JOHNSON. Well, these are hypothetical. Of all the pieces of the story, the composition of the capital flows that will finance the U.S. current account is the most subject to change and the least predictable. So it would be foolhardy for us to claim in any sense that we have written down a serious forecast. I simply wanted to show how the elements might interplay and what the pieces would be.

CHAIRMAN GREENSPAN. It's actually very helpful to see a base because you can always make your own adjustments. It's the orders of magnitude that I find really very useful.

MS. JOHNSON. Similarly, I didn't want the tan portion to grow too much or to grow too little either. It is important to realize that not only do we have to finance the U.S. current account deficit but we have to take into account the reality of U.S. investors buying claims on the rest of the world. The elements of globalization that are making foreign investment attractive—that are allowing people to diversify, reducing home bias, and adding to this dispersion to which you referred—apply to U.S. investors every bit as much as they apply to foreign investors. So that's an additional factor. And the flows must abide by simple accounting conditions—they have to add up—in order to make the process continue.

CHAIRMAN GREENSPAN. Could we have a hostile takeover of world statistical discrepancy, which would help? [Laughter] The issue that is unknown here, as far as the dispersion of the current account balances is concerned, is how far it can go. Unless the circumstances lead to unfinanceable ratios of net claims against a country relative to its GDP, there is no arithmetical limit to how far that dispersion could run. We are not seeing anything in this presentation per se that suggests a limit.

MS. JOHNSON. No, there's just the ultimate final condition that it can't continue forever.

CHAIRMAN GREENSPAN. That brings up Herb Stein's famous quote as usual.

MS. JOHNSON. Yes, indeed.

CHAIRMAN GREENSPAN. It's really quite a useful data system that you have set up to provide a sense of the orders of magnitude. Unfortunately, I was distracted when you were discussing exactly what the definitions were of the figures in the box in the bottom left-hand corner of exhibit 3. This is a share of the portfolio of what?

MS. JOHNSON. For each of these countries, it is the portfolios of their residents. In other words, line 1 refers to the portfolios of euro area residents, 85 percent of which are held in domestic euro area securities.

CHAIRMAN GREENSPAN. Okay, it's the residents of these countries.

MS. JOHNSON. Yes. And they hold 5 percent of their portfolios in U.S. securities, leaving 10 percent held in non-U.S. foreign securities.

CHAIRMAN GREENSPAN. Okay.

MS. MINEHAN. I'm sorry to interrupt, but is that the same measure of foreign holdings of U.S. assets shown under the disorderly adjustment scenarios? Is that the same thing?

MS. JOHNSON. Well, yes, in the sense that the figures in column 2 would be the same. But the denominator here is the portfolio per country.

MS. MINEHAN. And the denominator in the other is the country's own GDP?

MS. JOHNSON. Yes, their GDP.

MS. MINEHAN. So even though the euro area has only 5.4 percent of its portfolio in U.S. securities, that figure is equivalent to 37 percent of its own GDP?

MS. JOHNSON. Yes, but let me amend my answer to you a second ago. In exhibit 3, the figure in the column labeled "U.S. securities" is bonds and equities.

MS. MINEHAN. And this other one is all-inclusive?

MS. JOHNSON. This is all claims, including foreign direct investment holdings—claims in the United States through that channel.

MS. MINEHAN. So European-owned banks are part of it?

MS. JOHNSON. Yes, and Chrysler and all the other investment assets that Europeans have bought.

MS. MINEHAN. I'm sorry, I apologize for interrupting.

CHAIRMAN GREENSPAN. Theoretically, that figure could go well over 100 percent. In other words, you indicated that this struck you as an indication that foreigners are already heavily invested in U.S. assets, but a country like Belgium, say, could end up with gross net claims against other countries.

MS. JOHNSON. In exhibit 4, my point is that if there is a disorderly adjustment, the balance sheet effects are likely to be felt more by residents of other countries than they will be by residents of the United States.

CHAIRMAN GREENSPAN. I think that was well demonstrated. I congratulate you. It was an awful lot of work, and although there were no definitive conclusions here, I think you've set up a structure that gives us a detailed sense of what is involved in the funding of the international financial system. Questions? Governor Gramlich.

MR. GRAMLICH. First, I tend to be in sympathy with the view expressed by Karen and Joe that this growing external deficit is probably going to cause trouble at some point. It's hard to know when. But if I understand what you did in exhibit 5, the disorderly adjustment scenarios, it strikes me that you may have over-proved the point. If one looks at this, the real cost of the disorderly adjustment is the decline in foreign GDP. And that, in turn, seems to come about—you have everybody following a Taylor rule, but then the zero bound is a constraint—because countries can't lower interest rates as much as they have to in order to stabilize their economies. So the question is, What about fiscal policy? Would it be possible for fiscal adjustments, either here or abroad, to stabilize these foreign GDPs?

MR. GAGNON. Fiscal policy certainly could help. The models are such that if you want to hit a target, you can raise or lower taxes or raise spending enough to help to some extent. You might not like the other consequences. But the answer to your question is yes. While we did not actually run those types of simulations, the logic of the model is such that fiscal policy could help in that regard.

CHAIRMAN GREENSPAN. Has there ever been in the international arena any evidence that governments have responded to crises by appropriate use of fiscal policy? [Laughter]

MS. JOHNSON. And these governments, in particular, are already challenged with respect to fiscal policy. [Laughter] But it is hard to see anywhere on earth, with the possible exception of some Asian countries, where the governments themselves perceive the scope of using fiscal policy in that way, whether they could do it well or not.

MR. GRAMLICH. I am not here to praise fiscal policy. But suppose we have a disorderly adjustment. I think it is interesting, when you strip it all away, to ask, What is the problem with that? If the problem is really that policy either won't adjust appropriately in the case of fiscal policy or can't adjust in the case of monetary policy, then that's fine. That's interesting to know. I think that is what you are saying.

MS. JOHNSON. We take that point very seriously. And it may be one reason—maybe some of you have noticed it, too—that, when we go to international meetings, it is always the other people around the table who are complaining about the U.S. deficit and worry that it is going to cause a problem. That may be because, in fact, the problems from the point of view of the United States seem quite manageable relative to the picture we get of trying to figure out how this situation is going to work itself out in the rest of the world.

MS. GOLDBERG. Governor Gramlich, may I add that I agree with the outcomes of the scenarios, but there is also a lot of redistribution across industries going on in the background here. There's a shift from capital goods sectors toward export-oriented sectors and the ones that were competing with imports. I don't know to what extent the costs associated with those types of transitions are built in, but that could be an extra drag, at least for a while, that works itself through the economy.

MR. GRAMLICH. As long as I have the floor, could I ask Linda a question as well?

CHAIRMAN GREENSPAN. Of course. I don't know if you're going to get an answer! [Laughter]

MR. GRAMLICH. Well, I'm sure I'll get an answer. Actually, I'm not sure I have totally grasped all this. In looking at your exhibit 1, suppose the dollar changes a lot. There are three ramifications on industry that you've highlighted. One is that the costs go up, and that's bad; that's illustrated by the yellow bars. The import share is high, but it could come down if the dollar goes down, right? And the black bars, the export share, could go up. So you have three things going on for each of these industries, and unless I missed it, I don't see where you have put it all together. Have you done a simulation with a given percent change in the dollar and looked at the cost structure, the import competitiveness, the export competitiveness, and so forth, to see how these industries come out in total equilibrium?

MS. GOLDBERG. What I've done is a bit more limited in that I've looked historically at the effects of exchange rate movements on profitability and the net effects in terms of the first two bars, which are the revenue exposures versus their cost exposures. And I've found that those effects are a very significant issue for them, as is initially this point about the translation effects on multinational profits.

The other thing I've looked at, where there is industry-level detail, is the sensitivity of exports and imports to exchange rate changes. Those are the two pieces. What we see in that exercise is that, when the dollar depreciates, the exports of these types of industries respond significantly, so revenues get a really big boost. On the import side, though, for these industries it's a different story. If you look at the overall U.S. economy and at how much we are spending, say, on imports of transportation goods from abroad, you find that the sensitivity of that to exchange rates is pretty much zero. And the reason is that we end up having higher prices on imported cars, for example, and importing fewer cars, so the balance of those effects won't show up in our import balances. So import sensitivity, the amount we spend on imports, is a different story from the one conveyed by the production volume in these industries since the U.S. producers will still be expanding their own activities.

CHAIRMAN GREENSPAN. Incidentally, the input–output cost data you have are now for '92 to '97?

MS. GOLDBERG. Yes.

CHAIRMAN GREENSPAN. Were these numbers in exhibit 1 for a specific year?

MS. GOLDBERG. Yes. These numbers are, I believe, for 2002.

CHAIRMAN GREENSPAN. You've estimated the costs using the 1997 input–output data, which is close enough or should be.

MS. GOLDBERG. Right.

CHAIRMAN GREENSPAN. President Santomero.

MR. SANTOMERO. Just a quick follow-up on exhibit 5 and the disorderly adjustment scenarios. You indicate that for the United States you have a Taylor rule kind of reaction for policy. In the most benign case, scenario number 1, what kind of adjustment do we need domestically and—to the extent you can characterize the international adjustment—internationally to respond to this scenario?

MR. GAGNON. In scenario 1, we have the federal funds rate following a Taylor rule. The funds rate increases 70 basis points in the first half and gradually moves up about 200 basis points. I don't have a weighted foreign adjustment, but I can tell you that, in the case of our major trading partners, they hit the zero bound in that scenario.

MR. SANTOMERO. Even in scenario number 1?

MR. GAGNON. Yes, but just barely. In scenario 2 they are quite strongly constrained; in scenario 1 they just barely hit the zero-bound constraint. I could tell you how much they would have to lower rates if there were no zero bound: Japanese rates would be down 300 basis points, and euro rates would be down 400 basis points.

MR. GRAMLICH. If they didn't hit the zero bound, your scenario 1 line wouldn't go much below zero, would it?

MR. GAGNON. No, because they just barely hit the zero bound. So, it's true that if you're looking at the effect on their GDP—is that what you're looking at?

MR. GRAMLICH. Yes.

MR. GAGNON. In that case, in the bottom left panel, the dotted black line goes down to minus 1½ percent rather than minus 2½ percent.

MS. JOHNSON. In some sense, if monetary policy could work immediately and without friction, none of the GDP lines would move in this scenario 1.

CHAIRMAN GREENSPAN. President Hoenig.

MR. HOENIG. Just a follow-up. The orderly and disorderly adjustment scenarios are based on where we are today, if I understand correctly?

MS. JOHNSON. Yes. And in some sense, the elephant in the room is the size of the current trade balance.

MR. HOENIG. You're saying that this can continue, though you don't know for how long, and as it does—

MS. JOHNSON. The elephant grows.

MR. HOENIG. The consequences grow. And yet there is nothing we can do about it, which is an interesting conclusion.

MS. JOHNSON. In some sense, there's nothing we need to do about it. On the other hand, I do lose a little sleep over that conclusion. But I do believe that global capital markets are better at deciding where the world's capital ought to be put than almost any other mechanism I can think of.

MR. HOENIG. But we know that at times it gives us a terrible headache.

MS. JOHNSON. It can. And it's certainly true that factors like U.S. fiscal policy bear on the intertemporal consequences of allowing this deficit to run. It bears on a much broader issue of intertemporal resource utilization in this country that includes our borrowings from abroad and our repayments or servicing of those borrowings going forward. So, I am inclined to say when I look at exhibit 2—I agree with the Chairman—that it could happen. It is perfectly plausible that there will be no adjustment through 2010. But then I look at the diagram on the top left in exhibit 4, and every year that goes by that the deficit gets bigger, that line shifts. So what it would take to get us going in the other direction becomes a bigger and bigger hurdle over which we have to jump. The interplay of those things and whether the world's economic resources are being best allocated by all the millions of decisions that are being made by people everywhere is the conundrum in all of this. It is not an immediate issue. It is not going to produce a crisis tomorrow. It might not ever produce a crisis. But embedded in this situation are these issues that are a concern.

CHAIRMAN GREENSPAN. We have a long list of people who wish to speak, but I think we can break for coffee at this stage. Let's get back in ten minutes, plus or minus thirty-three seconds.

[Coffee break]

CHAIRMAN GREENSPAN. Governor Ferguson.

MR. FERGUSON. Thank you. I'd like to take us back to a point that Linda made in passing because it's one that worries me a bit. There is the sense not just that an adjustment between the consumption of foreign-produced goods and the consumption of domestic goods is involved but also that there would be a switch in the nature of goods, with a move toward fewer investment goods and perhaps more final consumption goods. As you've looked at this—particularly you, Karen—have you thought very much about what the implications would be for the U.S. economy before we get to the disorderly type of situation—in an even less benign case than described in the list of implications in exhibit 4? I suspect one of them would be less investment and potentially slower productivity growth here over the long term. Linda, maybe you could start by picking up on the points you were making just in passing to Governor Gramlich about investment goods versus consumption goods. How might that adjustment play into it, and more broadly, what are the implications of that?

MS. GOLDBERG. Well, if the dollar depreciation is part of the larger switch of investor sentiment, for example, out of asset holdings in the United States, we'd have higher interest rates and lower investment spending. In terms of the overall GDP effect, that is offset to a large degree in the simulations by the expansion of production in export-oriented and import-competing sectors. I don't think the scenarios get into how costly the period of dislocation is—involving the transfer of workers between industries or types of jobs or perhaps a temporary period of capital reallocations. I think that is the context.

MS. JOHNSON. Linda is referring primarily, at least in the last portion of her answer to you, to what we might call adjustment costs. The mix of U.S. GDP that would come out of this depends entirely on just where the shock starts, how it makes its way through the economy, and in particular, how monetary policy has to respond. In the event that the shock began because asset preferences turned against dollar assets, we would get one sequence of events. We would get stimulus. The United States in any scenario has to produce more tradable goods and fewer nontraded goods. So, in some sense, the shift has to involve a move into manufacturing and certain sectors that we all know and love, and against certain sectors that we may think we probably are overindulging ourselves in anyway. [Laughter]

MR. GRAMLICH. We've got a budding politician here! [Laughter]

MS. JOHNSON. That mix shift doesn't necessarily have to mean that it is somehow an unwelcome development in the U.S. economy and that we're going to have a smaller manufacturing sector. We may have a bigger manufacturing sector. We may have more investment in certain sectors, but we'll have less investment in other sectors.

Looking at the same set of relationships—and using the vocabulary of the national income accounts—we do have to shrink our savings–investment imbalance. We have to lower total investment and raise total savings so that they meet, or at least come closer to meeting than they do now. The lower dollar will be a terms-of-trade change to the United States. U.S. consumers will have less purchasing power over the world's goods, broadly defined, than before the dollar fall; that will be a force against consumption, and it favors investment. The really critical thing would be that monetary policy, even in some orderly scenarios I could imagine, would have to tighten to restrain excess aggregate demand that would otherwise emerge in the United States owing to the expansionary shock of dollar depreciation.

But if adjustment were to begin by fiscal tightening in the United States—if that were among the first things to happen—or by a spontaneous increase in U.S. saving rates owing to demographic effects or some such development that brought down interest rates and exchange rates and lowered domestic demand, monetary policy might even have to ease. In that world the mix of investment and consumption and government spending that we'd ultimately get would be different. So, that's not predetermined. The mix could come out a variety of ways. But the savings and investment imbalance has to close. That much we know for sure.

MR. STOCKTON. I would just add, though, that in the case of this asset preference shock that Karen noted, we are going to have higher real interest rates, which will crowd out a certain amount of interest-sensitive spending. Some of that will fall on housing investment and some on consumer durables, but some of it will fall on business fixed investment as well.

CHAIRMAN GREENSPAN. A lot of this adjustment takes the differential in productivity growth rates in the United States versus foreign economies as exogenous. And what those differentials are really has a great deal to do with the adjustment process.

MS. JOHNSON. Yes. Indeed, in the background paper we reported another model simulation, which we did not describe today, that makes the shock the productivity story. It involves a one-time productivity shock that works its way through the whole global economy. And you can see how that world looks different from the one in which asset preferences change.

MR. FERGUSON. But I think to some degree the conclusion from all of this, Karen—your point that exhibit 5 suggests that it's more the rest of the world's problem than ours—is not quite right. There's obviously a reason for all of us to be worried about the outcome from even an orderly adjustment. As you indicated, depending on the way the adjustment starts, we as a society might be relatively unhappy with the outcome or relatively happy with the outcome. So let's be cautious about saying it's no wonder that representatives from other countries ask us at various meetings we attend what we're going to about our external deficit. It's something we have to be asking ourselves as well.

MS. JOHNSON. Yes, right. But a stark case of that point is the difference between productivity opportunities emerging abroad that attract capital abroad, as opposed to just a widening of the risk premium because people become disheartened by the course of policy or the politics or the outlook for the United States for some reason. The whole mix of saving and investment globally and the accumulation of capital depends on just these kinds of factors.

CHAIRMAN GREENSPAN. President Minehan.

MS. MINEHAN. First, let me compliment everybody who made a presentation today and those who wrote the papers because I think they did an extraordinarily good job—for those of us who don't live in this arena all the time—of making a lot of complex things quite interesting and quite compelling. I want to ask a couple of questions, and then I just want to make a comment.

My first question relates to what seems to me a difference between the two papers regarding the impact of a depreciation of the dollar on overall price changes, as measured by the PCE as the Board staff does. It looks to me as though Linda's presentation suggests an impact that may be a third bigger. So I wondered if I got the numbers right there or not, and I may not have.

The second question was a reaction to Karen's statement about why people from other countries are concerned about this. It may be, in terms of portfolio analysis, that it is not a very big allocation to have in the euro area—let's say, 5.4 percent of the portfolio in the United States. I know that a broader definition of holdings of U.S. assets was used for that calculation than for the ratio of U.S. asset holdings to a country's own GDP. But I was struck by those latter figures. If you assume that something of a disorderly nature happens relative to the U.S. currency and the U.S. economy in terms of an adjustment on the trade side and 37 percent of a country's GDP is somehow involved, I can see where that could cause them to be concerned. People in other countries know that adjustments on our side will need to be bigger as time goes by, and the impact on them could get bigger as well. So, it is not surprising to me that they are every bit as concerned about this as they think we ought to be. It worries me that we are not that concerned.

Finally, I thought your first chart in the external adjustment material was very interesting. The chart on the bottom right-hand side on U.S. saving and investment shows that over time we had a great deal of net domestic investment and then we had the bust in 2000 with the stock market correction and so forth. And we had a substantial amount of net foreign lending. You made the point that, if net saving had continued at the level that it was in 2000, say, the current account deficit wouldn't be anywhere near as big now as it is. That, of course, corresponds pretty much in time with the swing of the fiscal deficit from something like plus 2½ percent of GDP to minus 4 percent or so of GDP. We recently hosted a conference where everybody was quoting Herb Stein all the time because of the fiscal deficits and trade deficits. Every speaker started off with a quote from Herb Stein. One of the speakers—actually it was Ted Truman—made the point that the twin deficits aren't twins but they share a lot of DNA, with the DNA being related to the national saving rate.

It seems to me that we don't have a lot of options in terms of correcting something that—though it is getting bigger and its consequences are in some sense more dire all the time—ultimately has to come to an end. In my view, one of the ways that policymakers would have the most control over the outcome would be to do something about the fiscal deficit. It was rather interesting to me that you seemed to tiptoe around the fiscal deficit in your paper. You talked about how that could be a correction mechanism, but there was no prescription discussed in the paper. That may be because we don't control fiscal policy; I suppose that's possibly why. But that seems to me something that may deserve a little more attention.

MS. JOHNSON. Let me answer your questions in reverse order, if you don't mind. There is a difference in some of the conclusions we draw about pass-through, and I think it would be worth airing that a little.

You might ask, What if we just extended that saving line, wouldn't everything have been wonderful? But the point of that panel on saving and investment and relating it to the other information on the same exhibit is to try to emphasize the general equilibrium nature of this process. It is true that fiscal policy could help. Fiscal policy is the one textbook answer to doing something in the right direction to resolve this problem. But let's say that government expenditures were cut for whatever reason—just hypothetically, in a thought process—to match whatever might otherwise have happened and we kept the saving rate sufficient so that the line for saving would have been horizontal. A lot of the cutting of government spending would have been on domestically produced goods, not internationally produced goods. There is no magic direct channel from fiscal policy to traded goods or to our trade deficit.

We do simulations asking what the outcome for external adjustment would be if we assumed a fiscal policy action of this or that size. If we put a contractionary fiscal policy in place that lowers domestic demand for an unchanged exchange rate and everything else, momentarily we have slack resources in the U.S. economy. The model then tells us that monetary policy should respond and should stimulate the economy to get utilization of resources back to capacity. But the mix of GDP will now be different. By construction, we cut G, government spending. The question is, Are we going to get more exports? Are we going to get more of some other component of domestic demand? And the answer to that question depends importantly on the interest elasticity of the components of domestic demand, the interest elasticity in our model of the exchange rate, and the exchange rate elasticities of exports. So as we do this exercise, filling that hole from fiscal policy, we get back a fairly substantial amount of domestic demand. And the adjustment that we get in the external balance is only a portion—and it could even be a small portion—of the change that was made to fiscal spending that started it.

MS. MINEHAN. So basically we would need three things to happen domestically and one internationally. On the international side, foreign economies have to grow faster. Domestically, we have to have more saving, hopefully not too much less investment, and the fiscal deficit has to go down a little.

MS. JOHNSON. Right. I think we're confusing endogenous and exogenous things here, which makes me a little nervous. But somewhere along the way there needs to be a mechanism that "crowds in," to use David's language, exports and helps to get external balance out of the fiscal action. The same story would have been true had the original shock just been a spontaneous increase in saving rates on the part of the private sector. What delivers the external adjustment is that the exchange rate changes; and it changes the relative price among the components of GDP. The result is that people, both producers and consumers, shift their behavior in a way that makes net exports fill that hole as opposed to other components of domestic demand. The interest elastic components also come in to fill that hole.

MR. GAGNON. And in the staff model, it would be about $1.00 of trade adjustment for every $3.00 of fiscal contraction.

MS. MINEHAN. You did have a 30 percent figure in there. But 30 percent is better than nothing.

MS. JOHNSON. I will take thirty seconds on this question about whether these numbers in exhibit 4 are big or little, and then we will turn to the pass-through question. It is true that the 37 percent of GDP for Europe or the 56 percent of GDP for Canada that are shown in that exhibit are big numbers. But remember, on this basis, capital output ratios for economies are numbers like 300. So, though these economies hold claims on assets that are multiples of their GDP—and their claims on the United States may be 60 percent of their GDP—you want to put it in that perspective.

MS. MINEHAN. Oh, okay.

MS. JOHNSON. We'll turn to the pass-through question. Linda.

MS. GOLDBERG. We do have a disagreement on what we think the pass-through is. I'm guessing that, in the end, there won't be as much disagreement about that going forward as it might appear. Let me go through what the difference is. When I talk about pass-through of exchange rates, I'm referring to the pass-through of exchange rate movements into import prices, and I'm giving as a rule of thumb a pass-through of one-half. In the Board's simulation model, I think it's about a third, or 30 percent.

MR. GAGNON. About 25.

MS. GOLDBERG. It's about 25 percent in the Board's simulation model. So we have a different sensitivity of import prices to exchange rate changes, and that has a number of effects in terms of what you see here in our materials. Looking at exhibit 5 in Karen's and Joe's material, the disorderly adjustment scenarios, if the pass-through of exchange rate movements into import prices were higher, there would be more import-price response and more core PCE response. We'd probably have as well a larger relative price adjustment between imported and domestic goods, and we would see more of a net export response, more expenditure switching going on in the model. That's how that change would manifest itself in that scenario; a higher pass-through would give you more inflation and more of a net export response.

So then the question is, Why do we have a disagreement? Part of it reflects how we estimate this, and part of it reflects how we view the current data relative to history. Is the recent history most relevant? Is the longer history most relevant? What I see is that the pass-through did decline; it seemed to be lower over the 1990s. But recent price observations, while on the low side, are still within historical bounds. So which is it? Do we have a permanently lower relationship, or are we on the low side of something that historically has been high and low? I tend to go with the longer history in part because, after we've had a strong dollar period, foreign producers have been able to be quite profitable and build up their margins. That also gives them scope for accepting lower margins for a while, but that's a finite process.

One interpretation is that, in 2002 or early 2003, foreign producers were living off the fat of a strong dollar period, and maybe that's not a long-run relationship to be locked in. Also if you think of the Asian countries, China's prices haven't been changing against the dollar because their currency is pegged to the dollar, so China's competitors might have been more constrained in moving their prices. Whether or not that is something that can persist is debatable.

MR. GAGNON. I think we agree on what we've seen in the past and, of course, we both are wondering what will happen in the future. I'd just like to say that I believe a lot of the differences in our views come from how we think about commodities. That's an issue to consider going forward. We both looked at import prices, disaggregated and aggregated. When we look at aggregated import prices, we tend to put commodity prices separately in our regression in addition to exchange rates. We, too, find that there was less pass-through in the

1990s. The question is, What is the story lately? I think that's where we may have some difference.

In the past few months we've been saying that more of the rise in prices has occurred because commodity prices are rising, which we think has some exchange rate component but also has a large cyclical component—domestic demands in China or, more broadly, a world demand component. To our mind, that may explain why the pass-through seems to be higher lately. Time will tell which will turn out to be right. Frankly, I have a lot of sympathy with perhaps a return to a higher pass-through in the future because I think, as Linda said, the lower pass-through in the '90s might have been because it was a time when China's economic growth was rising and their currency was pegged to the dollar. Even though a lot of countries in Asia had exchange rate movements up and down in the '90s, for those who compete with and integrate their production processes with the Chinese, there was an 800-pound gorilla that they couldn't really compete against. So they were forced to price along with China, and China's currency was tied to the dollar and thus our pass-through estimates would fall. When we've looked bilaterally at which countries seemed to have passed through less in the 1990s, it was Japan, developing Asia, and Mexico. So it's quite possible that, if China were to revalue or think of a change in that respect, all bets could be off. Maybe we'd go back to the historical pass-through. The jury is out on that.

CHAIRMAN GREENSPAN. President Moskow.

MR. MOSKOW. Mr. Chairman, my question was asked already, so I'm going to pass.

CHAIRMAN GREENSPAN. Governor Bernanke.

MR. BERNANKE. Thank you. Joe, in modeling the current account deficit, you have to explain where it came from. A big part of your story is that U.S. assets and foreign assets are imperfect substitutes, and there was a big exogenous increase in the foreign demand for U.S. assets. I understand why you did that, but that's a very important assumption. The elasticity of substitution between our assets and foreign assets is going to affect many aspects of the model. For example, if it's inelastic, a change in the demand for U.S. assets on the part of, say, foreign central banks would have a large effect on the value of the dollar. So I guess my question is, Do you accept that implication? What would be the effect of assuming a much more elastic relationship in demands between different assets? How central is this to your basic story?

MR. GAGNON. You are referring to the background paper that we circulated?

MR. BERNANKE. Yes.

MR. GAGNON. In that we had a somewhat different model simulate a rise and fall in the current account balance. I'm not sure that we are here to hang our hat on one explanation for the rise and fall of the current account; clearly a number of things were going on then. I wouldn't say that the portfolio preference shock is entirely the story. But one reason that I chose to highlight it, to some extent, was that, if you look at a number of variables in the U.S. economy at the time—interest rates, output, inflation, the exchange rate, the trade balance, and so forth—it's the one shock that sort of moves things jointly together well. That doesn't mean that some other combination of shocks might not also have worked out that way. But it is one that does work out that way. So in that regard it has some nice features. Another obvious shock that we highlighted was the productivity shock, and the reason we didn't use that alone is that it just doesn't do enough. You'd need a much bigger productivity shock in our model for any reasonable calibration to explain the trade balance.

MR. BERNANKE. I was also pointing out that this assumption has important implications for the way the model works. For example, relatively small changes of demands in the portfolio can have large effects on relative asset prices. How sensitive are your simulations to that assumption?

MR. GAGNON. That's a very good question. I don't sense that it is that important. A movement in foreign exchange intervention of, say, $100 billion or so in the model is not going to swamp the exchange rate, if that's what you're saying. Is the portfolio balance built to do that? No, I don't think it would do that. I actually can't point to specific evidence, though, so maybe we should look into that. But my sense is no—that the simulations are not sensitive to that assumption—because these are very large numbers. Even intervention of large amounts by the standards we are used to is not going to be large enough to make a difference. We're talking about a trillion dollars. But your point is a good one. As a modeling convention, it really helps in terms of actually solving these models. It's quite normal in these kinds of models to put in something like this because the model can be stable and you get to a steady state you can understand. So it's not unusual to do that, but it's a good point.

CHAIRMAN GREENSPAN. Governor Olson.

MR. OLSON. Coming back to the point that several have made about the frustration with the absence of a response to the external imbalance issue, there has been talk about a fiscal policy response and even a monetary response in the instance of a disorderly threat. My question—and I asked this of Joe at the break—is what the effect would be if the United States signaled a change away from a strong dollar policy. That is a posturing change, assuming we are not actually intervening. What would be the impact of the Secretary of the Treasury saying, à la John Connally, "We've thought this through again, and actually a 10 percent drop in the value of the dollar would seem to be appropriate at this time"?

MS. JOHNSON. The one stumbling block in trying to analyze this problem that we've encountered since we began—we have a little cottage industry here, and I have been doing this for eight or nine years of my life now—is that we don't have the capacity to relate exchange rates, in real time or hypothetically in a model, to a number of variables and have a deterministic relationship among those variables and exchange rates that works very well at all. So we are always forced to pose the problem and structure the answer in ways that don't require that we claim that we can forecast exchange rate developments. We talk about relationships, but we don't say that the dollar will do this at a certain point in time or even that the dollar will do this in response to the current account, which is an open issue that we didn't even raise here. We have lots in here about how the dollar affects the deficit implicitly. In Joe's simulation, the dollar is driving these things. We don't really have anything about how the deficit is feeding back on the dollar because being able to explain determination of exchange rates is the weakest link in international economics going. We don't have an answer, and others don't have one either. I'm inclined to think that, if Secretary Snow rented out Yankee Stadium and made the announcement you indicated, the dollar would move. But I wouldn't be basing that on an understanding of economics. [Laughter] It would be more my understanding of the politics in the United States and what I think traders would do because that's what they think other traders would do.

MR. OLSON. Well, let me come at it from the other direction. What is the impact of staying pretty close to the position generally espoused by the Secretary of the Treasury—except for O'Neill who was somewhat more flexible on it—of being supportive of a strong dollar position? The current Secretary has maintained that position, at least as I understand it, of being supportive of a strong dollar.

MS. JOHNSON. Part of me clings to the hope that oral intervention of whatever sort has a marginal and only transitory effect on exchange rates and that deep down the economic fundamentals drive the process, regardless of what anybody says.

MR. OLSON. So that ought to work the other way also, on the downside?

MS. JOHNSON. It should.

CHAIRMAN GREENSPAN. Vice Chair.

VICE CHAIRMAN GEITHNER. I have a question for Karen and Joe. Karen, do you want to hazard a view on whether the probability of a benign adjustment exceeds that of a malign disorderly adjustment?

MS. MINEHAN. Ask her to predict the exchange rate!

MS. JOHNSON. We're just not in the business of predicting crises here. Down deep the things that make the U.S. economy different from the rest of the world I think are overpowering in terms of the role of the dollar, notably the size of the economy, the flexibility of the markets, and the depth and size of the asset markets. The notion that the world's investors will truly become so disheartened about the U.S. economy that they will produce something that would look like a disorderly adjustment strikes me as remote. On the other hand, I was an adult in the 1970s and early 1980s, and I remember periods when the dollar was thought to be a very weak currency. And I remember periods when Federal Reserve policies weren't well regarded. So I'm not about to say that could never happen. I just don't see it happening any time soon.

VICE CHAIRMAN GEITHNER. So in a sense, you think we control the risk?

MS. JOHNSON. If U.S. macroeconomic policy remains well grounded, if the value of goods in terms of U.S. dollars is well maintained by this Committee, if nature doesn't impose some truly exogenous crazy event on the U.S. economy, and if U.S. fiscal policy could get a little better, I think those are the things that will determine how this situation evolves. But, you know, when I read my own briefing I realize what it means—that this problem is going to continue to grow. And I remember Herb Stein's admonition and say that this situation can't go on; at some point, in some way, an adjustment has to occur. The paper had a rather benign outcome in which the productivity differential just worked its way through the system and things more or less corrected. I can certainly imagine, if the same sort of productivity shock that hit the United States were to become evident abroad—which we keep looking for—that it would accelerate that process even more. And those stories do exist. Those adjustment paths are very credible.

VICE CHAIRMAN GEITHNER. I want to come back to scenario 1 in your exhibit 5, in which you have the dollar falling 30 percent in a year. Certainly an outright cliff of that magnitude in a year—

MS. JOHNSON. It's in two quarters actually.

VICE CHAIRMAN GEITHNER. In two quarters. And you assume that comes with no increase in risk premiums on other U.S. financial assets. I'm asking how realistic is that?

MS. JOHNSON. No, no. You should think of scenario 1 as just an initial description of an element that is in the whole set of scenarios. We didn't really mean for you to take scenario 1 seriously without scenario 2 coming along as well. That was more an analytical clarification. We think that much dollar depreciation would roil markets.

MR. STOCKTON. In that short a time period.

MS. JOHNSON. Yes, in that short a time period. As indicated in exhibit 6, starting in 1985 a depreciation of that magnitude occurred over 2½ years.

MR. STOCKTON. And in 1986 we sat here and had a conversation—one in which I actually participated, sort of in Linda's role—and tried to ferret out what the consequences were going to be of the dollar depreciation that was in train and how much dislocation there would be. We were all concerned about whether there would be enough domestic capacity to meet the shift in demand that was going to take place toward tradable goods and away from other goods. We wrung our hands a fair amount about that. But in retrospect, it's clear that there's a lot of flexibility in the U.S. economy. And given that the shock took place over 2½ years, there was in a sense plenty of opportunity, therefore, for the private economy to respond more smoothly to it. So there was less risk associated with the rising risk premium in financial markets. That process occurred more smoothly, I think, than we thought was likely to be the case ahead of time.

MS. JOHNSON. In my own mind—Joe actually did this page, so he might have a different way of explaining it—I don't think of the shock in scenario 1 as causing the shock of scenario 2. If people were to wake up and decide that they didn't want to hold claims in the United States, that would mean that all those things would occur at once. People simultaneously do not want to hold dollar claims but also do not want U.S. equity or U.S. bonds, et cetera.

VICE CHAIRMAN GEITHNER. So you've drawn no particular policy implications in terms of things we could do to mitigate the risk of an adverse outcome beyond what we would do anyway, such as try to keep monetary policy credible, inflation expectations low, and rediscover fiscal virtue. Another question is, Does it matter at all what happens to exchange rate policies in greater Asia?

MS. JOHNSON. I see that as affecting the path. In other words, those countries are in some sense financing our deficit. Official finance is a variant of private finance; it has different incentives behind it and perhaps works through other asset markets a bit differently. But what the Asian official sector is now doing is in part financing a continuation of the deficit as opposed to triggering or even participating in the adjustment process. There are some risks embedded in that. There are some who feel that the decisionmaking in the official sector is a bit more political; it is not comparable to the kinds of decisions and thought processes made by those in the private sector. Also, the sums are getting very large so that the holdings of foreign claims on the United States are becoming concentrated in a very few spots. Huge sums are held in the Central Bank of Taiwan and the People's Bank of China; that in and of itself sort of changes things a bit. On the other hand, I'm inclined to think that those official entities are not likely to shoot themselves in the foot if they can help it. So there are pluses and minuses, I guess. If they change their exchange rate strategy, I would expect them to change their reserve management strategy; I think those two things will go hand in hand. While it will matter to the specifics of the path, I don't think it's a deal breaker.

MS. GOLDBERG. May I just add one point? I fully agree, but in addition to the exchange rate policies in greater Asia, there's the question of whether demand management there can ultimately help push toward the benign outcome. If we get increased openness and thus greater consumption of U.S. goods—so that basically those markets become more of an export destination for us than they have been—that can help facilitate the export expansion that would produce a more satisfactory outcome. That said, Asia is still a pretty small share of overall world spending and that effect isn't going to be tremendous; but it could help on the margin.

CHAIRMAN GREENSPAN. Governor Kohn.

MR. KOHN. Actually, I was going to ask about this last point, the Asian dollar block. Let me just ask one variant on that. The Europeans sometimes complain that the Asian dollar block forces more adjustment through them. But I would say that that is not necessarily the case. It could mean that the Asians, by absorbing these claims, are stopping the total adjustment from happening. It's not necessarily true that they—

MS. JOHNSON. That is certainly the attitude that the staff has taken. We've even written those points down, and we've asked the Chairman to say them out loud, and he has. [Laughter]

CHAIRMAN GREENSPAN. And nobody knocked me down!

MR. KOHN. You're just following orders, I know. [Laughter]

MS. JOHNSON. In part, it goes back to this unanswered question of exchange rate determination. In essence, that conclusion follows from a kind of portfolio balance theory of the exchange rate. What it says is that, when the Chinese, for example, take dollars off the market and out of the hands of the private sector, they make dollars less abundant relative to Chinese renminbi. That is true, but they also make dollars less abundant relative to European currencies. So in essence, they absorb some of the dollars that would otherwise be putting pressure on the euro and any other currency you care to name. That's because there is this big portfolio balance issue and relative supplies are a factor; so anybody who buys dollars in some sense is helping the other currencies, not hurting them. But that isn't the only theory of exchange rate determination that one might want to adhere to. And given that none of these theories is empirically very satisfactory, it is possible to construct the story another way and get a different conclusion.

MR. KOHN. While I have the floor, let me make one comment on fiscal policy and the exchange rate correction—the fiscal rectitude point. I've told the same story that we're telling here, but I also remember the lively discussion that Chairman Greenspan started in Jackson Hole about ten years ago, when he said that he thought narrowing the federal deficit would strengthen the dollar. I think the channel he was thinking of was confidence. So if we had a circumstance where the fiscal situation looked explosive and we started narrowing the deficit, it's very hard to tell what the effect on the dollar would be. The models say one thing, but who knows in real life?

MS. JOHNSON. There are time-varying and policy-varying risk premiums on most of those equations, and we can get different outcomes.

CHAIRMAN GREENSPAN. Governor Bies.

MS. BIES. I have two questions. The first one is for Joe and Karen because I was thinking about financial markets as they apply to the analysis that you did, especially in the first paper that was distributed to us on June 16. When I look around the world, the United States has really been very innovative compared with other countries in terms of the types of private securities traded in our markets in part because of the depth and liquidity of our markets. We have been innovative in securitizing duration and credit risk—and in every other way that one can cut and slice risk—and in creating derivatives, too. My question is whether in your analysis of the private securities flows you see something of a supply-side impact on those flows. If someone is sitting in another country doing good portfolio analysis, and the depth, liquidity, and variety of risk exposures they can acquire in U.S. securities is more attractive than the alternatives, is that in and of itself a tradable good that attracts them to the U.S. markets?

MS. JOHNSON. I would say it's not. The fact of the matter is that most of the securities of at least private corporations—not U.S. Treasuries, obviously—that foreigners buy are marketed in Europe and are sold in the euro markets. They are not sold in New York. I'm not saying that there aren't any sales of the type you asked about, but there's a huge offshore market for corporates in which the securities are denominated in various currencies and the lenders can vary. And that market is for the most part in London—in Tokyo, too, and to a limited extent in Frankfurt—not New York. What foreign buyers of U.S. corporates purchase is a security issued in their own jurisdiction and in some sense governed by their own jurisdiction's practices. So, while I see your point and I'm sure that some part of what you are saying is accurate, it's not as if these people truly are participating directly in the U.S. corporate market. The U.S. corporations are going overseas to the euro market.

What is true is that foreign corporations haven't followed those in the United States in choosing to offer corporate tradable securities that have a range of alternatives. The secondary markets haven't developed, and the derivatives markets haven't developed as much, in part because of the universal banking tradition that they have. They've gone a different way. It's true that they might change. Those corporations could become more multinational so that their taste for how to finance themselves in different places changes. If European corporations start to offer a richer mix of high quality corporate debt in their own markets, European or Asian or other non-U.S. investors will see more competition with U.S. bonds and equities, and that could have an effect.

MS. BIES. My other question is for Linda and goes back again to exhibit 7 and is about the pass-through. One of the changes that international corporations have made involves replacing trade by going into customer markets—actually putting in facilities and manufacturing in the resident country where the ultimate sale occurs. When I look at the data in exhibit 7, the industry where the pass-through has come down the most is transport, which I guess is composed primarily of autos and small trucks. Clearly, we've seen German and Japanese auto manufacturers moving into the United States more of their production of vehicles destined for this country. By putting more of their production in the resident country, does that in effect reduce their inherent exposure to foreign exchange risk? Is the amount that is still being imported into this country small enough that they don't need to push it through as they might have done twenty years ago, when all of their U.S sales were being imported?

MS. GOLDBERG. I think that's certainly a possibility. When I think about what the import-price response to an exchange rate change is going to be, I think of the producer who is doing the exporting looking at his own costs and his margins over those costs. Based on that and the markups in the industry and so forth, he then determines how much he has to change prices. So that part doesn't change even if the company has facilities in the United States or has diversified the locations of its production. There's another part to your question about whether production diversification across markets is in part induced by exchange rate volatility, and people really differ in their view of the importance of that. I tend to think that diversification occurs in part because firms want to offset some of the risk by having the ability to move operations between markets. So I agree with that, but I don't know how big that is relative to the total amount of investment and the total amount of trade that goes on.

CHAIRMAN GREENSPAN. President Lacker.

MR. LACKER. First, let me add to Cathy's commendations for Joe and Linda and the excellent background papers. My question relates to Tim's in a way. It has to do with the locus of disorderliness. The prospects for disorderly adjustment seem to motivate and animate a lot of this analysis. And it strikes me that a lot of the risk regards the rest of the world. Some of our trading partners have been known to resist the appreciation that accompanies the type of international adjustment that we're looking at here. In particular, some developing countries often resort to macroeconomic commitments like exchange rate pegs that they have only a limited ability to follow through on in a consistent way. These commitments are not perfect substitutes for the credibility that comes with deep and resilient markets and a credible commitment to low inflation. It strikes me that those kinds of commitments by these countries enhance the prospects of their being susceptible to domestic macroeconomic instability in response to changes in U.S. macroeconomic conditions and the type of adjustment that we're looking at here. I wonder if you've given any thought to that or what your general reactions to that notion are.

MS. JOHNSON. Well, a certain variation of that theme is to rerun the Asian crisis in one's head over and over and ask, What if this or that or the other thing had been different? Indeed, many people now argue that some of the Asian countries are recreating conditions comparable to those that existed in 1996 and 1997, in particular the stability that they are trying to achieve in their exchange rates. Are those kinds of conditions being recreated? I think there is a clear risk.

Now, it is also true that one of the lessons that those countries drew from the Asian crisis is that large holdings of reserves are a good insurance policy. Also, they realize that running a current account surplus removes the need to go to the market to finance their activities in any given month, day, or quarter, if conditions get a little adverse. I think they are quite explicitly seeking to build large quantities of reserves both to impart confidence to the market, which sees that they have all these wonderful reserves, and to use if needed—though I would say it's probably more the former than the latter. And they exhibit a certain bias in the direction of keeping their exchange rate from appreciating in real terms because that's what generates the surpluses that protect them from the need to go to the market. So they don't have a large outstanding stock of debt; and, if anything, they are running down their net debt position and might have positive claims on the rest of the world at the rate they are going. They don't have a flow problem, and thus they feel better positioned to manage the ups and downs of being globalized into the world's capital markets.

The problem they face involves the consequences for their domestic economies if these strategies ultimately get uncomfortable. One thing that could happen through the back door is that they may end up with their money supplies growing and they may have domestic inflation; so they get real exchange rate appreciation even while they are maintaining nominal exchange rate stability. They may at the same time lessen the chance to strengthen and develop their banking systems and their capital markets because they are constraining prices in the domestic financial system more than is attractive. So they may be encouraging their private citizens to diversify out of the domestic market, even though they are trying to reassure those private citizens through the exchange rate stability. These countries might be better served in the long run not just to hold on to the resources they are requiring as reserves but to use them to come up with a stronger banking system and more competitive capital markets. Ultimately that strategy of trying to achieve exchange rate stability is not going to prove to be a long-run winner. It could be a good adjustment strategy, buying time to accomplish the domestic reforms and to strengthen their financial systems—doing that carefully over a period of time. But it does have the capacity to put us back in a world in which the emerging-market countries, even successful ones, lack some of the features that the developed countries have, particularly on the investment side. So these emerging-market countries are still subject to concerns about sudden reversals of capital flows or capital flight from their own residents, and those sorts of things. Indonesia, for example, has had a lot of pressure on its exchange rate lately—shades of a return to 1997. It's a real issue. And I think it's one of the reasons that we can finance a 5 percent deficit when they probably can't and that we can probably finance a 6 or 7 percent deficit when they surely couldn't. Does it mean that we can finance a 9 or 10 or 15 percent deficit? I don't know.

VICE CHAIRMAN GEITHNER. I know it's about time to end this discussion, but I have one more question. Does it matter what happens to the projected foreign share of the U.S. Treasury market under a scenario where our external imbalance is substantially larger—maybe getting larger than the increase in the net borrowing requirement of the government? Is there a point at which you would worry about the implications of these lines going on indefinitely, with a growing foreign share of the outstanding stock of U.S. risk-free assets?

MS. JOHNSON. Within the kinds of numbers we've experienced to date we're inclined to be relatively relaxed about that. Dino might want to comment on that issue, too, though.

CHAIRMAN GREENSPAN. Doesn't it depend on the interaction between U.S. Treasury securities and private securities in total?

MS. JOHNSON. Yes.

VICE CHAIRMAN GEITHNER. You assume that the preference would change?

CHAIRMAN GREENSPAN. Yes. In other words, if there is literally zero preference difference, then the 50 percent foreign holdings of U.S. Treasuries is the wrong ratio. The denominator has to be the aggregate. And it's probably closer to that than not, so that number falls from 50 very significantly.

VICE CHAIRMAN GEITHNER. You assume that their preference would change as their share increased?

MS. JOHNSON. I think what we're talking about are the preferences of everybody else. Let's assume that foreign officials, because of laws written into their books, their regulations, their procedures, or whatever, always want U.S. sovereigns but that the vast majority of global investors regard U.S. sovereigns and U.S. corporate triple-As as perfect substitutes. Then this tiny group called foreign officials can do whatever they want, and it really doesn't matter to the pricing of the assets involved.

CHAIRMAN GREENSPAN. And if the yield spreads are relatively stable, then the substitutability, for all practical purposes, is without limit.

MR. REINHART. Now as a taxpayer, Mr. Chairman, it would probably be churlish to complain that the foreigners are buying our debt at high prices.

CHAIRMAN GREENSPAN. I agree. It would be churlish. [Laughter]

MR. REINHART. I think there are consequences for market liquidity within the Treasury market because some of these foreign purchasers do act differently in the primary and secondary markets than private holders. In particular, there are differences in terms of participating directly in the auction and not putting in competitive bids and in the secondary market not putting the securities out to lend.

CHAIRMAN GREENSPAN. Aren't these second-order effects generally?

MS. JOHNSON. This reminds me of the debate we had when we thought U.S. debt was going to disappear. While that has consequences, it was not something we regarded as a bad thing because we had surpluses. So, surely it is manageable.

CHAIRMAN GREENSPAN. We started a whole new discussion! [Laughter] Anyway, the clock has run out on us, and I just want to congratulate Karen, Joe, and Linda. It has been a very interesting seminar, which is really what this has been, and I hope it engages us. One little thing that went by unnoticed as you were talking about "nature's" effect or an exogenous event: Is Osama bin Ladin part of nature?

MS. JOHNSON. Yes.

CHAIRMAN GREENSPAN. I say that because there is a very interesting phenomenon here, in terms of what happens to all of this adjustment process in the event of a significant terrorist attack within the borders of the United States. That's a whole different scenario, which we really haven't addressed in any material way, except to presume that, if we can manage a high degree of flexibility in our markets, it will somehow get absorbed. But how it will be absorbed, I'm not sure we know.

In any event, as you are all aware, we have our annual reception at the U.K. Embassy this evening. Cocktails are at 7:30, and usually we sit down for dinner about a half-hour later. Transportation has been made available for Board members already. For the Presidents staying at the Watergate, vehicles will be available at your hotel at 7:15.

MR. REINHART. Mr. Chairman, I was wondering if there would be enough time for Dino to give his report from the Desk. That way we can start tomorrow with the chart show.

CHAIRMAN GREENSPAN. I'm sorry. I didn't realize that we did have some time. I think that's an excellent suggestion. Dino, why don't you get started and see if you can finish.

> MR. KOS.[3] Thank you, Mr. Chairman. I'll be referring to the charts that Carol circulated a short time ago. I'll try to proceed quickly. During the intermeeting period the market's focus was on the anticipated start of the tightening cycle. As shown in the top panel on page 1, three-month deposit rates (the black line) increased nearly 50 basis points and forward rates three, six, and nine months forward (the dashed red lines) rose more than 50 basis points. The nine-month forward rate now is above 3 percent. Treasury yields moved higher. The middle panel graphs the two-year yield since January 2002 along with the target fed funds rate. Two-year yields have nearly doubled since late March to about 2.85 percent, and their spread to the funds rate is at its highest since the spring of 2002. Much of the focus in markets has been on recent inflation reports, and the short end of the curve has responded. The long end has not risen as much. The coupon curve, represented by the spread between two-year and ten-year Treasury yields, has flattened to below 190 basis points, as shown in the bottom panel. One thing that market participants have pointed out is that, if expectations were for sharply higher inflation, one would expect to see that curve steepen, but it has not.

[3] The materials used by Mr. Kos are appended to this transcript (appendix 3).

Another way to look at inflationary expectations is through the TIPS market, though here the usual health warnings about interpretation of TIPS yields and breakevens apply. As shown in the top panel on page 2, breakeven yields have tended to rise in recent months as the economic data have improved, oil prices have stayed elevated, and the CPI index has risen. A noteworthy feature of recent trends is the convergence of breakeven rates between shorter-dated TIPS and the longer ten-year TIPS. One possible interpretation is that inflationary expectations in the near term have risen.

While that could be a contributing factor, there are technical factors that may be having a disproportionate effect on these relationships. TIPS are tied to the not-seasonally-adjusted headline CPI rate, which does create some interesting dynamics in the pricing of the TIPS themselves. The recent rise of oil prices has increased investor demand for TIPS because of the anticipated additional inflation accrual on TIPS principal. This may not reflect expectations for broader inflation to take hold. A second technical reason is related to the calculation of the inflation accretion; shorter-dated TIPS outperform longer-dated ones during a period when the CPI index is rising. This will reduce the real yields and, in turn, widen the breakeven. Third, the TIPS market is beginning to mature. Pension and investment consultants have discovered TIPS and are increasingly viewing them as a separate investment class. The movement of funds into TIPS from that source may be exaggerating the price movements and lowering real yields for the time being. We don’t know how much money has been allocated to this asset class. But we can look at what is happening with regard to the dealers. In the early years of the market, the dealers tended to be long TIPS. One has to assume this was voluntary on their part and that they found the yield attractive. This is depicted in the middle panel. In recent months inventories have been near zero, or net short TIPS, presumably as the real return has become less attractive to this group of informed agents.

With such technical factors making interpretation of TIPS difficult, another place to look at is in one-year forward inflation rates derived from CPI swaps. CPI swaps are an exchange of fixed for floating payments based on the consumer price index. As shown in the bottom panel, the forward inflation curve has shifted upward—in a largely parallel fashion—by about 25 basis points since early April, which is supportive of the notion that there has not been a disproportionate shift in the level of concern about near-term inflation performance.

Looking at fixed-income markets more broadly, there has been a lot of comment about the degree to which positions have been adjusted in advance of the expected tightening. Or put differently, the issue is, How much of the carry trade has been closed out? Unfortunately the data to answer this question are not available, and the information that is available is ambiguous.

The top panel on page 3 graphs primary dealer position data since May 2003. Dealers typically are long credit products that are in turn hedged by being short Treasuries. And typically dealers, as a group, are somewhat net long. In the past few months, dealers have extended their short Treasury positions (the dark line), and their overall positions are close to flat. This is suggestive of one key constituency taking steps to reduce risks ahead of an anticipated tightening. Another perspective is provided by position data made available by the CFTC, which are shown in the middle panel. While these data have their own definitional problems, they suggest that noncommercial users were going short Treasury futures, presumably either to hedge other positions or to extend speculative short positions. This is also consistent with an unwinding of leverage. Other bits of evidence are not as definitive. Bankers suggest that hedge funds are still able to secure very favorable trading terms. And while individual hedge funds are less leveraged than they were several years ago, there are more of them around and it's not at all clear that their strategies are so different—notwithstanding assurances from some about the heterogeneity of those strategies. In addition, sectors of the fixed-income market where the carry trade was said to be crowded have shown only a modest widening of spreads. As shown in the bottom left panel, the investment-grade corporate and MBS spreads are somewhat wider, but the price action does not suggest large-scale liquidations to date, and anecdotal reports suggest that banks and hedge funds are still holding on to large positions in mortgage-backed securities.

The bottom right panel graphs the EMBI+ and high-yield spreads. Interestingly, spreads—after widening around the time of the last FOMC meeting and after some negative news out of Brazil—have narrowed to below 400 basis points for high-yield instruments and to below 500 basis points for the EMBI. There are certainly some fundamental explanations for the recent narrowing: improved corporate outlooks, lower oil prices in recent weeks, and some improved emerging-market news. But none of these developments in and of themselves suggests that the leveraged trades have necessarily been liquidated.

Price action in foreign exchange markets has had traders scratching their heads. The top panel on page 4 shows the dollar's movements since April 1 against a few major currencies—but this time not including the New Zealand dollar! [Laughter] Despite the sharp movements of interest rates since early April and the shift in expectations, the dollar has barely moved; and since the last FOMC meeting it has tended to fall. Foreign exchange traders have taken that as a bearish sign, which suggests to them that the dollar will fall once the tightening cycle actually begins. Several have noted that the dollar fell from about 1.75 to 1.50 against the DM during the 1994 tightening cycle. Japanese markets have performed well; equity prices have outperformed as the outlook for Japan has brightened. The yen has been under modest upward pressure again, and some in the market are speculating that the Ministry of Finance will return to intervention fairly soon if the yen continues to face upward pressure. The middle left panel shows the recent rise in the ten-year JGB yield. The rise in yields has been generalized across the curve. As can be seen in the middle right panel, which depicts the Japanese yield curve as of yesterday and as of roughly a year ago, the entire yield curve is sharply higher and steeper. While the authorities have been talking yields down the past few days, many in the market are beginning to think about the Bank of Japan's transition back to a more normal operating structure. In Europe, the data have tended to be mixed and somewhat disappointing given growth in other regions. Reflecting this divergence of performance, yields there have risen only slightly and not as much as comparable U.S. yields—as shown in the bottom panel.

Turning to page 5, I'd like to spend a few minutes updating the Committee on the reduced volatility in the fed funds market that we have observed in recent years. The type of rate volatility I will be describing is very short term: intraday standard deviations of the funds rate around the daily effective rate and the deviation of the daily effective rate from the funds target. The top panel on page 5 graphs the annual average standard deviation of the funds rate around the effective rate in blue and gives the annual median in red. In general, the standard deviation of the funds rate measured by the annual average was in a range of between 15 and 25 basis points until 1999, and it was somewhat less than that using the median. The spikes in the early 1990s were linked to a variety of factors, such as financial problems in the banking system that created tiering and the elimination of reserve requirements on nontransaction and Eurodollar deposits. The decline in volatility began in earnest in 1999 and has been maintained in subsequent years—with some notable exceptions such as September 11, 2001, and the days after. The bottom panel takes the same data and presents them in a different way; it depicts the medians of rolling ten-day periods of daily standard deviations of the fed funds rate. This graph shows the regular spikes associated with the year-end, which have now all but disappeared, as well as the somewhat higher volatilities in the fall of 1998.

Page 6 takes a different perspective by looking at the absolute deviations, expressed in basis points, from the fed funds target. This measure suggests that most trading is increasingly very near the target, with very little deviation. The precise reasons for this notable decline in volatility are not clear and my colleagues at the New York Fed are doing some research on this question. No single explanation by itself is compelling, but some combination of the following probably would get us most of the way there. First, among technical factors, was the shift to lagged reserve requirements in 1998 that helped make reserve demand more predictable both for the banks and the Desk. Second, the Desk expanded the number of banks from which it collects daily reserve position data—also to help it better estimate reserve demand. Third, banks have developed better internal control and information systems for managing their reserve positions. And fourth, at the margin, the Desk is probably intervening more often now than it did in the late '80s or early '90s, given the explicit rate targeting regime—though this does not explain the continued decline in volatility since 2000.

But the lurch downward in observed volatility is hard to explain with technical factors alone. Two other factors that probably played a role are the lower absolute value of interest rates and the introduction of the primary credit facility. Lower rates directly limit the absolute amount by which rates could decline; so with the target at 1 percent, the scope of deviation on the downside is only 100 basis points at present. Indirectly, low rates have lifted reserve requirements (by boosting growth in transactions deposits) and have created more room for banks to increase their clearing balance requirements consistent with their use of priced services. And possibly the experience with much lower volatility has affected market expectations to the point that the trend has become self-reinforcing.

The impact of the primary credit facility is hard to assess at present. It has limited the extent of upward spikes in rates on individual days, as shown on page 7. But since we saw few occasions when rates reached close to 100 basis points above the target in the year or so preceding the creation of the new facility, it's too early to conclude that the facility's creation has been a major factor in explaining the reduced level of volatility. At some point the impact of lower rates, including the impact on reserve requirements, will be reversed. When this happens there will be some increase in rate volatility. But many of the other factors mentioned persist, so even if volatility increases, there are reasons to expect that it will not rise again to the levels we saw in the 1990s. Two wild cards that could affect this picture include the possibility that the Congress will permit the Fed to pay interest on reserves and, second, the ways in which the new daylight overdraft rules for GSE payments of principal and interest are implemented. Either of these has the potential to have a major impact on fed funds volatility trends in the future.

Mr. Chairman, there were no foreign operations in this period. I will need a vote to approve domestic operations.

CHAIRMAN GREENSPAN. I haven't looked at the primary dealer data system in recent years, but the net outright positions, as you point out, have essentially come down to zero from a significant plus. What are the missing items in the balance sheet that account for the difference?

MR. KOS. I'm not sure I fully understand your question.

CHAIRMAN GREENSPAN. Well, on the asset side, the primary dealers have positions, long and short. There is a net position with a value. What is on the liability side for capital?

MR. KOS. What we try to do is to look at the position data to see what the longs and the shorts are, excluding certain things such as TIPS, bills, and discount notes. That basically gives us a sense of what securities are there. Now, there will be a big repo book on both sides of the balance sheet, so those have been subtracted as well. So this is one way of giving a picture of the position—

CHAIRMAN GREENSPAN. The tradable positions.

MR. KOS. Yes, without cluttering it up with a matched book, which would tend to balloon the balance sheet. That would tell us something about the financing, how this on net is being financed. But the matched book operation is its own business—

CHAIRMAN GREENSPAN. And you don't have the derivative positions net in this at all?

MR. KOS. That's right.

CHAIRMAN GREENSPAN. One other thing. On the chart showing Japanese three-month to thirty-year government yields, are these the absolute values and the actual yields? These are not the yields of the one-year maturity ten years out?

MR. KOS. No, these would be the actual yields.

CHAIRMAN GREENSPAN. They are the actual yields. That leads me to conclude in looking at the ten-year, twenty-year and thirty-year yields that the more implicit one-year maturity ten years out is yielding very significantly above these numbers. What is that yield, do you know offhand?

MR. KOS. I don't.

CHAIRMAN GREENSPAN. In our case, we've got 6½ plus percent, and this doesn't look all that different.

VICE CHAIRMAN GEITHER. This goes to thirty years.

CHAIRMAN GREENSPAN. I know, but look at the ten-year. It's the rate of change in the yield curve.

MS. JOHNSON. There's a risk premium in that as well as an expectation.

CHAIRMAN GREENSPAN. I would hope so. [Laughter] Questions for Dino? You traumatized everybody!

SPEAKER(?). I move approval of the domestic transactions.

CHAIRMAN GREENSPAN. Without objection they are approved. We will adjourn until tomorrow morning. Is anyone not coming tonight to the dinner? Good, I'm glad everyone will be attending. So we'll see you all at the British Embassy at 7:30.

[Meeting recessed]

June 30, 2004—Morning Session

CHAIRMAN GREENSPAN. Good morning everyone. Mr. Oliner, would you start us off?

MR. OLINER.[4] Thank you, Mr. Chairman. We have received a lot of information about economic activity since the April FOMC meeting. Focusing first on the data in hand when we closed the Greenbook, the top left panel shows that labor demand has clearly strengthened. Private payrolls increased at an average pace of 300,000 per month in April and May, building on the improvement in the first quarter. These gains were broadly based and included an upturn in the manufacturing sector that accompanied a surge in factory output. As shown to the right, manufacturing IP rose at an average annual rate of nearly 9 percent in April and May, up from the already brisk 6 percent pace in the previous two quarters. Despite the rapid rise in goods output, inventory–sales ratios (the middle left panel) have moved sharply lower outside the auto sector, and we anticipate that stockbuilding will gradually pick up, adding support to production in coming months. In addition, housing activity has been stronger than we anticipated. As shown to the right, starts of single-family homes remained elevated in May, and sales of new homes shot up to a record high.

However, the key data released after we finished the Greenbook have been softer than we expected. After folding in the new data on consumer spending, we now project that real PCE, shown in the bottom left panel, rose at a 2½ percent rate this quarter, down from the 3½ percent pace in the Greenbook. No doubt, some of the recent weakness in spending reflects the hit to real income from the larger-than-expected rise in consumer prices of late. After the Greenbook closed, we also received new data on orders and shipments of nondefense capital goods. As shown to the right, both series dipped in May, indicating slightly less robust demand for business equipment than we had anticipated.

Taking this new information on board, the table in your next exhibit shows that we currently estimate real GDP (line 1) to have increased at a 4¼ percent rate this quarter, ½ percentage point below the Greenbook forecast. Combined with the downward revision to first-quarter GDP in BEA's latest estimate, growth in the first half of the year now appears to have been less vigorous than we had thought, and we have marked down the second-half forecast a bit as well. Nonetheless, the basic contour of our projection is little changed from the Greenbook. We continue to project that GDP growth will move up in the second half of the year—on the strength of faster increases in consumer spending and some inventory restocking—before dropping back to about 3½ percent next year as monetary policy becomes less accommodative and fiscal policy turns slightly contractionary. With real GDP increasing a little faster than potential over the forecast period, we project that the unemployment rate (line 3) will drift down to about 5¼ percent by the end of 2005.

David will discuss our outlook for inflation in a few minutes. At this point I would simply note that the price data released since the Greenbook contained some further

[4] The materials used by Messrs. Oliner, Wilcox, and Sheets are appended to this transcript (appendix 4).

upward surprises, and we now project that the core PCE price index (line 5) will rise 2 percent this year and 1.6 percent next year.

In light of the less favorable news on inflation that we received since your last meeting, we have incorporated a greater degree of policy tightening in the current forecast. As shown in the middle left panel, we assume that the federal funds rate reaches 3 percent by the fourth quarter of next year, compared with 2¼ percent in the April Greenbook; this change results in a slightly higher assumed path for long-term interest rates. The thrust of fiscal policy, shown to the right, is essentially the same as in April. Among the other key background factors, the bottom left panel shows that we have shifted up our assumed path for crude oil prices by roughly $3 per barrel, in line with the revision in futures prices. Moving to the right, equity prices were a tad weaker than we had expected over the intermeeting period, prompting a small downward adjustment in the path going forward. Taken together, these revisions to interest rates, oil prices, and stock prices shaved a few tenths from our projection of GDP growth for 2005.

Your next exhibit reviews the current state of asset valuations, beginning with the equity market. The top left panel plots the forward earnings–price ratio for the S&P 500 (the red line) and the real yield on long-term Treasuries (the black line). The gap between the two series reflects the combined effect of the equity risk premium and the market's outlook for earnings growth. This gap has changed little over the past few years, holding at a level around the average in the first half of the 1990s. By this metric, stocks appear to be reasonably priced. We believe the same is true for corporate bonds. The shaded area in the panel to the right shows our estimate of the risk premium in the high-yield bond market, which we calculate as the difference between the observed high-yield spread over Treasuries (the red line) and the part of that spread that compensates for expected future defaults (the black line). Although the implied risk premium has come down a lot from its peak in 2002, it remains well within the range typically observed during periods of economic expansion.

The valuation picture for housing appears somewhat less sanguine. As shown in the middle left panel, prices of existing homes have risen 7 to 8 percent annually for the past several years. Meanwhile, housing rents have increased much less, which has caused a steep decline in the ratio of rents to prices, the analogue to the earnings–price ratio for equities. The panel to the right plots the rent–price ratio against the same long-run Treasury yield that we used to assess equity valuations. Note that the rent–price ratio can be calculated only as an index number, so its absolute level cannot be compared with the level of the Treasury yield; nonetheless, changes in the relative position of the two series over time shed light on valuations vis-à-vis historical norms. Currently, the rent–price ratio is very low relative to the Treasury yield, suggesting that valuations are rich. Accordingly, we anticipate that the gains in home prices will slow sharply over the forecast period; for 2005, we have penciled in an increase of only 2½ percent, which would be the smallest annual rise in a decade.

The bottom panels present similar data for commercial real estate. As shown in the left panel, prices for these assets have risen slowly, on average, over the past three years, reflecting the soft demand for commercial space. The net operating income from these properties has been even weaker, falling about 4 percent in 2002 and 5½ percent last year. As a result, the ratio of net operating income to price, shown by the red line in the right panel, has plummeted over the past few years, which has compressed the spread over the long-run Treasury yield. Currently, this spread is narrower than it has been for more than a decade but is still wider than it was throughout the 1980s. At this point, we don't think commercial valuations are as stretched as those for housing, but the situation bears watching, and we anticipate only small increases in commercial real estate prices over the forecast period.

The top left panel of your next exhibit shows the implications of this analysis for household wealth positions. As you can see, we project that the ratio of net worth to income will edge off a bit over the forecast period, as the subdued rise in real estate prices holds down the gain in net worth. However, this anticipated downdrift offsets only part of the increase in the wealth-to-income ratio since the middle of 2002. Taking account of the lagged response of spending to changes in net worth, we expect wealth effects to make a small positive contribution to real PCE growth this year and to be about neutral in 2005.

The key factor shaping our outlook for consumer spending is the path for real disposable income. As shown by the blue bars in the right panel, we expect real DPI to rise at a pace of more than 4 percent over the forecast period, reflecting a combination of sizable employment gains and increases in real compensation per hour. Our projection for real spending growth (the red bars) is slightly below that for real income, as we expect the saving rate to move up toward its longer-run target level over the forecast period. In the housing market, higher mortgage rates are expected to damp activity, causing residential investment (shown in the middle left panel) to post a small decline next year.

Some commentators have expressed concern that a firming of monetary policy will dramatically raise interest payment burdens for households. We believe that such concerns are overblown, in large part because most household debt carries a fixed interest rate, which slows the adjustment of interest costs to rising short-term rates. The middle right panel illustrates this point for mortgage debt. The black line shows the thirty-year fixed mortgage rate, while the red line displays the average rate on the outstanding stock of fixed-rate mortgages. As shown, the policy tightening from mid-1999 to mid-2000 boosted the thirty-year mortgage rate more than 150 basis points, but the average rate on the stock of debt barely budged. We expect a similar pattern to hold over the forecast period. To be sure, interest rates on adjustable rate mortgages will move up, but even for these loans, the average rate will rise gradually because many ARMs start off with a fixed rate for several years. The bottom left panel shows the staff's broadest measure of household financial obligations, defined as the sum of required principal and interest payments, auto lease payments, and rent payments, all scaled by disposable income. As shown, this ratio has come down from its peak, largely reflecting the wave of mortgage refinancing that reduced the average interest rate on mortgage debt. Going forward, we expect the ratio to remain about steady, as the slow rise in the average interest rate on outstanding debt is offset by some further substitution of mortgages for higher-cost types of debt. Our relatively upbeat view about household financial conditions seems to be shared by market participants. One indicator, shown in the bottom right panel, is the interest rate spread on securities backed by credit card receivables; this spread has narrowed quite a bit over the past few years.

In the business sector, the subject of your next exhibit, all signs point to healthy financial conditions. As shown in the top left panel, firms have continued to deleverage, reducing the debt-to-asset ratio for nonfinancial corporations (the black line) to the lowest level in many years. With the lighter debt load, the share of cash flow devoted to meeting interest expenses (the red line) has fallen dramatically as well. Reflecting this improvement in financial ratios, the delinquency rate on C&I loans at banks (the red line to the right) has retraced much of the run-up from 1998 to 2002, and the default rate on corporate bonds (the black line) has dropped even more sharply.

Some analysts believe that businesses—like households—will suffer significant financial pain from a rise in short-term interest rates. The middle left panel presents a key part of the argument against that view. The black line shows an estimate of the interest rate that corporations face on new debt, calculated as a weighted average of bond yields and bank loan rates. This rate jumped during the tightening episodes that began in 1994 and 1999 and has plummeted in recent years. However, the average interest rate that firms pay on their stock of debt (the red line) has been far more stable. In particular, this average rate increased only about ½ percentage point during each of the two tightening cycles. More recently, the average interest rate has held steady despite the drop in the cost of new debt. This unusual pattern largely reflects the fact that the latest downswing in borrowing costs was driven by shrinking credit spreads on corporate bonds rather than by declining short-term rates. The reduced spreads had no direct effect on interest costs for the large volume of fixed-rate debt sitting on firms' balance sheets.

The financial health of the business sector ultimately depends on its capacity to generate profits. As shown to the right, the profit share of GNP now stands at its highest level in more than three decades. Although we expect earnings to soften somewhat over our forecast period, the profit share should remain quite high by historical standards. Thus, firms have the wherewithal to support solid increases in capital outlays, and the caution that had been holding down spending now appears to have faded, as illustrated in the bottom left panel. This panel plots the well-known relationship between the acceleration in business output and the growth in real outlays for equipment and software. The line drawn through the dots shows the fitted relationship for the period from 1985 through 2000. As indicated by the red dots below the line, E&S spending was exceptionally weak during 2001 and remained soft in 2002 and 2003. However, the strong gains recorded so far this year suggest that 2004 will end up above the fitted line, and we expect the same to be true in 2005. The table to the right summarizes our forecast for total business fixed investment. As shown, we project that total BFI (line 1) will expand 12 percent in real terms this year and another 9 percent next year. This contour reflects the pattern for spending on equipment and software (line 2), which we expect to be boosted this year by the partial-expensing tax benefit that expires at year-end, after which spending hits a temporary pothole. For nonresidential construction (line 3), we expect a gradual upturn in activity this year, which should strengthen in 2005 as the sizable amount of vacant space gets worked down. David will now continue our presentation.

MR. WILCOX. Chart 6 presents the broad contours of our outlook for the labor market. As shown in the top left panel, we expect that, as firms shed the last vestiges of the unusual caution of the past few years, they will continue to add significantly to their payrolls, partly to relieve some of the pressures on workforces that currently appear to be a bit overstretched. On our estimates, monthly increases in nonfarm payrolls will average a little more than 300,000 jobs through the end of this year before tapering off next year. As shown in the top right panel, one implication of relieving pressure on the workforce is that productivity is likely to come back into closer alignment with its structural trend. A consequence of the last few months' worth of data is that the discrepancy between the level of private employment reported in the establishment and household surveys, as shown in the middle left panel, has largely closed. For reasons that are not fully understood, the establishment survey tends to rise more on the upswing of the business cycle and to soften more in the down phase. Nonetheless, having come full cycle, so to speak, since 1994, the two measures are in close alignment, at least momentarily. Even with a robust pace of hiring, we have the unemployment rate (the middle right panel) remaining slightly above our estimate of the NAIRU throughout the projection period, for two key reasons: First, as shown in the bottom left panel, we expect that, as job opportunities continue to open up, the labor force participation rate will move most of the way back toward its long-term average. Second, we expect that the workweek (the bottom right panel) will continue its cyclical rebound. If either of these developments were to fail to materialize, pressures on labor resources could be more intense than we have assumed in the baseline. I will come back to this risk shortly.

Your next chart turns to the issue of inflation. As illustrated in the top left panel, and as you are all well aware, PCE price inflation has stepped up this year from the very low rates registered last year, both for the overall index (the black line) and for the core (the red line). In recent months, the overall index—shown in the first column of the table to the right—has been rising more quickly, on average, than the core, reflecting the direct contributions from food and especially energy. The middle left panel decomposes core PCE inflation, and highlights that the largest part of the pickup in core PCE inflation during the first half of this year relative to the comparable period last year reflects the development on line 3, namely faster inflation in the prices of goods other than motor vehicles. As shown on line 2, firmer prices of motor vehicles also have contributed to the acceleration this year, as have the prices of nonmarket-based services (line 6), most notably the imputed price of banking services.

The panel to the right takes a step away from pure arithmetic and attempts to attribute the acceleration in the core index to some underlying causes. According to our models, some of the pickup in core inflation this year can be attributed to the indirect effects of higher energy prices. Another chunk, according to the models, can be attributed to the acceleration of import prices, an attribution that seems consistent with sizable contribution of goods prices shown in the left-hand panel. The remainder of the pickup, shown on line 3, likely reflects the influence of a slowly narrowing margin of slack and perhaps a diminishing productivity dividend, as well as the aforementioned larger contribution from nonmarket-based services and a variety of other factors not well captured by our models. As shown in the bottom left panel, commodity prices escalated sharply through the early months of this year but have retreated somewhat in recent weeks. We expect the pass-through of higher production costs already in train to continue to boost core consumer price inflation through much of this year, before beginning to reverse course around year-end. As shown to the right, near-term inflation expectations, which tend to react to recent trends in overall consumer prices, have stepped up noticeably in the last few months. Even so, longer-term expectations, shown by the red line, thus far seem to have remained reasonably well anchored.

Despite the recent upside surprises on the inflation front, our forecast continues to anticipate that inflationary pressures will remain fairly well contained; chart 8 lays out some of our thinking as to why this is so. As shown on line 1 of the table, we expect overall PCE inflation over the next six quarters to run at a pace of about 1¼ percent. In part, this reflects, as shown on line 3 and in the middle left panel, a partial unwinding of the substantial run-up in energy prices last year and this. And as shown on line 5 and in the middle right panel, we expect food price inflation to moderate, as farmers step up their production in response to recent high prices. Moreover, we expect core PCE inflation to edge back from its upswing in the first half of this year. A number of factors combine to keep a lid on core inflation in our projection: a persistent, albeit narrowing, margin of slack in labor and product markets; the good behavior of long-term inflation expectations; and the pass-through of the more moderate turn of energy and import prices into core inflation. That said, as Yogi Berra once remarked, "it's tough to make predictions, especially about the future." With that in mind, the bottom right panel shows 70 percent and 90 percent confidence intervals around our baseline forecast. As you can see, the 70 percent interval around our forecast for inflation in 2005 extends from ¾ percent on the low side to nearly 2½ percent on the high side, and the 90 percent interval is correspondingly wider.

One source of uncertainty in the outlook that has garnered a great deal of commentary lately is the gap in resource utilization. Chart 9 turns to this topic. The basic idea of this chart is to compare our benchmark measure of the gap—the difference between our estimate of the NAIRU and the actual unemployment rate—with a number of alternative indicators of the pressures on productive resources. In every panel, the unemployment gap is plotted as the red line. For ease of plotting, all series in the chart are standardized to have zero mean and standard deviation equal to 1, and all are normalized so that high values indicate relatively intense pressures on productive resources. The top two panels compare the unemployment gap with two alternative measures from the labor market. In the panel on the left, the black line shows the employment-to-population ratio. In the panel on the right, the black line shows the

Conference Board's measure of whether survey respondents think that jobs are easy or hard to get. These alternative measures from the labor market track the contour of the unemployment gap very closely. Moreover, the latest readings on all three series are right in line with the values that they registered in 1994—a time when labor still seemed underutilized.

The middle panels compare the unemployment gap with two alternative measures of capacity utilization—the one on the left being the index produced here at the Board, and the one on the right being the measure published by the Institute for Supply Management. As we have noted on a number of occasions, the FRB series has, for some time, been signaling considerable remaining slack in utilization rates in the manufacturing sector. By contrast, the most recent reading on the ISM's index of capacity utilization seems to indicate much tighter conditions. We believe, however, that this apparent tension reflects the fact that the ISM is measuring a different concept than we are. In particular, in responding to the ISM survey, firms appear to take account of the current availability—or lack thereof—of labor and materials. Accordingly, the ISM series reflects short-term production bottlenecks. In contrast, we ask respondents to focus on their maximum sustainable production given the capital in place and to assume the availability of sufficient labor and materials.

The bottom left panel compares the unemployment gap with the output gap, and demonstrates that we continue to rely on the regularity of this relationship to inform our assumption for the growth of potential GDP. Indeed, the recent—albeit small—errors in Okun's law were one factor in our reassessment of the current level of the output gap in this forecast. The panel on the bottom right of the page steps outside the realm of gaps and presents the Chicago Federal Reserve Bank's National Activity Index. Despite the fact that this series is an indicator of growth rather than the gap in resource utilization, I present it here because Stock and Watson and some others have reported that it outperforms the unemployment gap as a forecaster of inflation, though we have not met with as much success. Clearly, though, the recent signals from the NAI have been much hotter than the ones from the unemployment gap. The messages that I take away from this chart are, first, that the bulk of the evidence suggests that some slack—even if only a relatively slim amount—remains in the utilization of productive resources. Second, not all plausible indicators sing in unison on this question, and we have to be open to the possibility that actual pressures are quite different from those that we have assumed in the baseline forecast. In other words, we are uncertain about our estimate of the gap in resource utilization.

Chart 10 examines the implications of that uncertainty for the inflation outlook, and places "gap" uncertainty in perspective by comparing it with two other important sources of uncertainty. Before delving into the specifics of this chart, let me sketch the general approach. The idea of this chart is to decompose the Greenbook confidence intervals that I showed earlier to give you a rough idea of where that uncertainty might be coming from. For a variety of technical reasons, the decomposition here is partial, not exhaustive, and most assuredly is less precise than it appears on this chart.

Nonetheless, at least in broad strokes, we think it represents a reasonable first approximation.

The top pair of panels considers the implications of uncertainty pertaining to the gap in resource utilization. Specifically, as outlined in the bullets in the top left panel, we consider a confidence interval of plus or minus ½ percentage point around our baseline NAIRU assumption, which we believe should encompass about two-thirds of the probability mass. Then, as noted in the second bullet, we layer on top of that the assumption of some coefficient uncertainty, equivalent to a plus or minus one standard error band around the slope coefficient translating a given unemployment gap into its implications for future inflation. As noted in the third bullet, we refer to the combination of NAIRU uncertainty and coefficient uncertainty as "resource utilization uncertainty." The last step, then, is to have FRB/US tell us how important resource utilization uncertainty might be in generating uncertainty in the outlook for inflation. The result of that exercise is plotted in the top right panel as the innermost cone, which is shaded red. To put that uncertainty in perspective, I've plotted it against the same Greenbook confidence intervals that I showed you earlier.

The middle panels consider the implications of our uncertainty about energy prices. Again, two forms of uncertainty are considered—uncertainty about the prices themselves and uncertainty about the pass-through into core price inflation. The striking result here is that energy price uncertainty is an even greater source of uncertainty about the outlook for inflation than is resource utilization uncertainty, according to FRB/US. Similarly, the bottom pair of panels considers the implications of our uncertainty about import prices. And once again, the results from the model indicate that we should be at least as concerned about this source of uncertainty as we are about uncertainty generated by the gap in resource utilization.

In sum, uncertainty about resource utilization is certainly not the only important source of uncertainty about inflation over the next year or two, and it may not even be the most important one. In part, this conclusion stems from the fact that we believe the pass-through coefficient from changes in the unemployment gap to inflation is pretty small. As well, it reflects the fact that the model thinks it knows that coefficient to within plus or minus 30 percent or so. That combination of circumstances implies that resource utilization uncertainty will have only limited implications for inflation uncertainty. On the other hand, energy prices move a great deal, and so can leave a big imprint on core inflation even with only a small pass-through coefficient.

Your next chart takes a different approach to exploring uncertainty and summarizes two scenarios from the Greenbook illustrating upside and downside risks to the inflation outlook. These are the same two scenarios discussed in the Board briefing on Monday. In the first scenario, as you will recall from the Greenbook, we consider the possibility that we are too optimistic about the supply side of the economy. Specifically, we suppose that the NAIRU is 5¾ percent rather than 5 percent as in the baseline projection, and we assume that the bounceback in the participation rate that I showed you a few charts earlier will be only half as large. In addition, we allow long-term inflation expectations to gradually rise 1 percentage point relative to baseline over the forecast period. As shown by the dashed red line in the panel to the right, these assumptions generate a markedly worse inflation outcome, assuming a fixed nominal funds rate, with four-quarter core PCE inflation rising to about 2½ percent by the end of next year.

That said, we believe the inflation projection that we put forward in the Greenbook has the risks well balanced on both sides. One of the downside risks that we see is illustrated in the middle panel, which shows the markup of price over unit labor costs. The most recent readings on this variable have been the highest since at least the end of the Second World War. And while our projection calls for the deviation of the markup from its long-run average to narrow, it certainly could narrow by more and at a faster pace. In particular, in the course of ramping up production, firms may bid up wages faster than in the baseline. At the same time, competitive pressures may be so strong that they more than offset the price effects of higher unit labor costs. In the alternative scenario, we assumed that the markup moves halfway back to its long-term average. And as shown by the dashed red line in the bottom right panel, the downward pressure on inflation of even a partial return along those lines over the next six quarters could be quite powerful. Nathan Sheets will now continue our presentation.

MR. SHEETS. Your first international chart focuses on developments in international financial markets. As shown in the top left panel, yields on long-term government bonds in the major industrial countries have moved up over the past several months, in line with mounting evidence of global recovery and prospective monetary tightening in some countries. The rise in U.S. bond yields has been particularly marked, and Japanese rates have risen to their highest levels since late 2000. Rates implied by three-month Eurocurrency futures contracts, shown on the top right, have also shifted up—most noticeably for the dollar and for sterling but to some extent for the euro and the yen as well. These moves in long-term and expected short-term interest rate differentials have provided some support for the dollar. As seen in the bottom left panel, the broad trade-weighted dollar has strengthened a bit since January, as the dollar has posted gains against the euro and the yen.

As displayed on the bottom right, equity markets have treaded water in most industrial countries since late January, with improving growth prospects and rising interest rates having broadly countervailing effects. Japan has been a notable exception, however. Equity prices there have powered ahead, supported by the economy's remarkably strong recent performance. As shown in the top left panel of your next chart, we estimate that Japanese growth (line 1) hummed along at a 5 percent rate during the first half, as the rebound that began last year has continued to broaden. We expect growth in Japan to moderate through the forecast period, to around 2½ percent. Growth in China (line 2) is also expected to moderate from its recent sizzling pace, as the authorities there seek to engineer a "soft landing." As shown in lines 4 and 5, during the first half of this year, growth in Germany has trailed even the sluggish recovery posted by other euro-area countries, and we see German growth continuing to lag through the forecast period.

All told, we expect foreign growth (line 8) to proceed at a solid 3½ percent pace through the rest of this year and next. As noted on the top right, a sustained global recovery is now under way. The deflationary risks that plagued the foreign outlook a year or so ago have generally abated, but inflation is also likely to remain well contained. In short, our baseline forecast expects the foreign economies to put in a favorable performance. Nevertheless, new risks have emerged. First, amid intense geopolitical uncertainty, oil prices have recently been high and volatile, and this may threaten price stability and growth in some countries. Second, rising interest rates and tightening global liquidity conditions may pose risks for emerging-market economies or heavily indebted sectors in the industrial countries. Third, the possibility of a hard landing in China carries significant risks for other Asian economies (including Japan) and, perhaps, for the rest of the world as well.

The remainder of my remarks examine several of these issues in greater detail. I turn first to the recent performance of the Japanese economy. As shown on the middle left, Japanese exports have grown rapidly over the past couple of years, as exports to China and other emerging Asian economies have surged, and manufacturing profits have rebounded in lock-step with exports. More recently, nonmanufacturing profits have risen as well—to the highest rate in a decade—suggesting that the recovery is expanding across sectors. Rising profitability along with improving conditions in the corporate sector more generally have allowed investment (the black line on the middle right) to rebound from its recent trough. Labor markets have also revived, with the offers-to-applicants ratio rising sharply and the unemployment rate (not shown) declining from a peak of 5.5 percent early last year to 4.6 percent at present. Despite these positive developments, it should be kept in mind that Japan has experienced false dawns before—in 1996 and again in 1999-2000. Moreover, as shown on the bottom left, Japanese consumption has inched ahead over the past decade, outpacing advances in employee compensation (the dotted blue line). The result has been a marked decline in the household saving rate (in red). We expect the saving rate to move up as economic conditions improve. If this happens abruptly, consumption might lag the recovery even if compensation begins to rise. The bottom right panel highlights two long-standing sources of stress within the Japanese economy. First, although real estate prices in certain parts of Tokyo have stabilized or even begun to rise, the decline in broad measures of urban land prices has not abated. Second, bank credit has continued to contract.

The top panels of your next chart focus on the sustained economic weakness of Germany relative to other euro-area countries. As shown on the left, over the past decade German private consumption per capita has grown at a rate of only 1 percent a year, while per capita consumption in the rest of the euro area has expanded nearly twice as fast. Germany's lagging performance is due to a number of factors, but the inflexibility of the country's labor markets—and the resulting inability to create new jobs—has played a key role. As shown on the right, German employment has been essentially flat over the past decade in the face of an unemployment rate currently above 10 percent. The fact that other euro-area economies—hardly poster children for labor market flexibility—have successfully created jobs during this period underscores the potential benefits of even incremental progress toward labor market reform. However, the political support in Germany for such reform is limited and, if anything, has diminished of late.

As shown in the middle left panel, four-quarter inflation rates in a number of countries have stepped up during the second quarter, as the prices of oil and other commodities have approached or exceeded ten-year highs. Inflation in the euro area (line 2) has recently moved above the ECB's 2 percent ceiling. Inflation in the United Kingdom (line 4) has increased as well but remains below the government's 2 percent target. Even so, the Bank of England has tightened policy 100 basis points since early November in response to concerns that rising real estate prices and diminishing slack will stoke inflationary pressures. As shown in line 6, Chinese inflation moved up during the second quarter, largely reflecting a double-digit rise in food prices.

Average foreign inflation should remain around 2½ percent through the second half of this year and then decline to just over 2 percent next year. Our forecast for lower inflation next year is conditioned on the expectation that oil prices (shown on the bottom left) will move somewhat lower, as is now embedded in futures prices. Nonfuel commodity prices are likewise projected to moderate through the forecast period. As shown in the bottom right panel, the prices of several key commodities have already retreated from their recent highs. In addition, foreign central banks are committed to keeping inflation in check. With recoveries abroad becoming firmly entrenched, we see the ECB and the Bank of Canada as likely to start raising rates late this year or early next year, and the Bank of England will continue its gradual tightening. As shown in the middle right panel, deflation in Japan—as measured by the CPI—appears to be ebbing, and our forecast calls for slightly positive CPI inflation going forward. In contrast, the Japanese PCE deflator has recorded steady declines. We expect the BOJ to leave its policy of quantitative easing in place through the forecast period until there is clear evidence that deflationary pressures have abated.

The top panels of your next chart present data on corporate and household indebtedness. If borrowers have gorged themselves on cheap debt during the recent period of low interest rates, they may find it difficult to service or roll over their increased debt burdens as interest rates move higher. As shown on the left, Japanese firms have aggressively paid down debt and strengthened their balance sheets in recent years, while the indebtedness of euro-area firms has remained about constant since the ECB began easing policy in May 2001. Corporate debt levels in the United Kingdom have climbed during the past few years, as bank borrowing by the real estate sector has risen sharply, but such borrowing by manufacturing firms has actually declined.

Data on household indebtedness (shown in the top right panel) indicate that the debt levels of Japanese consumers have been about flat in recent years. In contrast, the debt burdens of U.K. households have increased significantly, driven largely by rising mortgage debt in line with the red-hot real estate market. As such, the assets of these households have risen along with their indebtedness. As most mortgages in the United Kingdom are variable rate and are directly linked to the Bank of England's policy rate, the recent monetary tightening has translated into higher debt-service burdens. To date, however, households have absorbed the tightening of policy with few signs of strain. Household indebtedness in the euro area has also risen somewhat during the past few years, as mortgage debt in some euro-area countries has posted considerable increases. This discussion suggests that interest rate vulnerabilities in the United Kingdom, and to a lesser extent in the euro area, are likely to hinge crucially on the persistence of the recent rise in real estate prices.

The rest of this chart focuses on the vulnerability of Latin American countries to an increase in global interest rates. As shown on the middle left, EMBI+ spreads are now above their lows early this year but remain narrow, suggesting that investors are relatively optimistic about these countries but perhaps also reflecting some willingness to "reach for yield" in a low interest rate environment. As shown on the middle right, over the past year or so Latin American countries have responded to the narrow spreads by stepping up their issuance of external debt, but the pace of issuance has remained modest in historical terms.

The bottom panel compares recent readings on the vulnerability of major Latin American countries against readings taken on the eve of interest rate tightening a decade ago. For Mexico (line 1), these indicators show a striking improvement. The country's current account deficit as a percent of GDP has narrowed more than 4 percentage points, and external debt has fallen to low levels. Similarly, Chile (line 2) seems well positioned to withstand higher global interest rates. The country's external indebtedness has risen over the past decade, but its foreign reserves have moved up as well, and most of the country's debt is of long maturity. Brazil (line 3) is now running a small current account surplus, which limits the need for new external financing. Nevertheless, the government's heavy debt burden—including both its external debt and its hefty stock of short-term domestic debt (not shown)—leaves the country exposed to shifts in the economic environment, especially in the event of policy slippages by the Lula government. Finally, Argentina has defaulted on its massive external debt and remains at loggerheads with its creditors. With these developments, inflows of foreign investment have come to a halt, and a marked rise in global interest rates could further complicate Argentina's financial situation.

Your final international chart examines the possibility of a hard landing in China. As shown on the top left, Chinese real investment has surged more than 30 percent during the past year, and this, in turn, has fueled double-digit GDP growth. To slow the pace of investment, the Chinese authorities have ratcheted up reserve requirements and implemented a number of administrative measures. Notably, recent data suggest that these actions are having significant effects. While our baseline forecast incorporates a soft landing for China, the measures that the authorities have put in place may yet prove too heavy-handed. Thus, as we discussed in an alternative simulation in the Greenbook, a much steeper falloff in Chinese growth than we presently envision is distinctly possible.

The table on the top right focuses on two channels through which a hard landing might spill over to the global economy. The first column reports a given country's exports to China as a share of GDP; the second column reports a country's net exports of commodities worldwide, also scaled by its GDP. Certainly those economies that export heavily to China—such as Taiwan, the ASEAN countries, and Korea (lines 1-3)—would be significantly harmed by a hard landing and an accompanying decline in Chinese import demand. However, for importers of commodities—such as Taiwan and Korea—there would likely be some offset, if a cooling in China took pressure off global commodity prices. In addition, a large share of China's imports from emerging Asia is eventually re-exported. Chinese demand for such imports depends on global conditions and might weather a hard landing relatively well. Outside of emerging Asia, countries such as Chile (line 4), Argentina (line 6), and Russia (line 7) would be hurt by the hard landing both because they have sizable exports to China and because they are net exporters of commodities. Among the industrial countries, Japan (line 5) would be the most affected by a hard landing, with exports to China now accounting for 2.1 percent of its GDP. The fallout for the euro area (line 9) and the United States (line 12) would likely be much smaller than for Japan. There are other channels through which a hard landing in China might be felt. For example, it could sour business and consumer confidence in other emerging Asian economies and Japan and weigh on sentiment in global financial markets. Indeed, as shown on the middle left, over the past few months, as concerns about China have come to the fore, equity markets in some emerging Asian economies—most notably in Taiwan and Korea—have moved down significantly. A hard landing would probably also weaken capital flows to emerging Asia and thus reduce upward pressure on the renminbi and other currencies in the region.

The bottom panels sum up my remarks by assessing the implications of our foreign outlook for the U.S. external sector. Although growth abroad (the blue bars on the left) is likely to put in a solid performance through the end of next year, it will trail the pace of U.S. expansion. This growth differential—along with the greater income sensitivity of U.S. imports—should boost U.S. imports relative to exports. However, the lagged effects of the dollar's depreciation since 2002 will work in the opposite direction, boosting exports relative to imports. With these factors about balancing out, our forecast calls for exports and imports (both shown on the right) to grow at roughly comparable rates, rising at a double-digit pace during the second half of this year and then tempering to 8 percent growth next year. Nevertheless, as the level of imports far exceeds the level of exports, net exports will become more negative, subtracting about ½ percentage point from U.S. real GDP growth during the second half of this year and in 2005. David Wilcox will now conclude our presentation.

MR. WILCOX. Your final chart displays your economic projections for 2004 and 2005. As shown in the top panel, the central tendency of your projections for the growth of real GDP this year is only slightly different than it was at the February meeting, and the central tendency for the unemployment rate in the fourth quarter is unrevised. For inflation, no February comparison is available because this is the first time that you have been asked to forecast core rather than overall inflation. For next year, your central tendencies indicate a moderation in the pace of growth, a slight decline in the unemployment rate, and little change in core PCE price inflation.

As we have already noted, some important information became available after the close of the Greenbook. In response to that information, the staff trimmed our projection for real growth this year and lifted our forecast for core PCE price inflation. For reference, the figures in the final column—labeled "Staff"—pertain to this updated projection rather than the Greenbook forecast. Over the next several days, you may wish to consider whether to update your projection; if you decide to do so, we request that you submit your revised forecasts to Dave Stockton and me by the close of business on Friday of this week. We would now be pleased to take any questions you may have.

MR. LACKER. I have a question for David. First, I want to applaud the analytical focus on the behavior of the price markup since it obviously has swung a lot in the last couple of years and it is a key swing determinant in the inflation outlook. I was wondering to what extent the markup is a forward-looking variable in the models you use. In many analytical or theoretical models of price determination it is, in the same sense that the saving rate is a forward-looking variable in the permanent-income model. Second, I was just curious: What kind of error bands or uncertainty band charts would it be possible to construct about the price markup?

MR. WILCOX. We have a new specification of FRB/US that incorporates explicitly forward-looking behavior in the setting of prices by firms. In a manner that's often referred to as a neoclassical synthesis, we have some sort of momentum-based or backward-looking influence on price setting as well as some explicitly forward-looking behavior. That forward-looking behavior in the wage–price block in FRB/US is rational in the sense that it's model consistent within that three-equation block. And roughly speaking, both are about equally influential. So if you thought about a coefficient of 1 in the context of accelerating inflation, you'd have about half on the backward-looking portion and about half on the forward-looking portion.

With respect to constructing error bands, we wrestled with that issue fairly hard in putting together the exhibit that explored uncertainty, and we decided not to do it because the markup itself isn't a fundamental variable in the model. It derives from and reflects a lot of other more fundamental influences. The conclusion we arrived at was that, if we had shown you confidence intervals that might be generated by markup uncertainty, we would have ended up sort of double-counting sources of uncertainty. So in that framework it's difficult to put a confidence interval around uncertainty. More impressionistically, just eyeballing this chart suggests to me that there is a lot of uncertainty about the future behavior of the markup. We've wrestled as well with whether that variable is best thought of as a stationary variable that returns to a well-defined mean. You can see from the chart in the middle panel in chart 11 that, depending on what sample period you chose to draw the blue line, you would get a different number for the average to which it should be returning. So I think in general there is a good deal of uncertainty surrounding the future behavior of the markup even though we have a hard time actually quantifying it for you.

CHAIRMAN GREENSPAN. With respect to chart 5, I notice that the profit share is shown as the ratio of economic profits before tax to GNP. Why not to corporate GDP? Or if you want to include the foreign earnings, put that in on the denominator as well. Why are you using GNP?

MR. OLINER. I think just because that's a convention we've had for a long time, but we can plot it to GDP.

CHAIRMAN GREENSPAN. Let me put it this way. Some conventions get outmoded. We are no longer driving the Model T Ford, so why are we doing this?

MR. OLINER. We can certainly change that.

CHAIRMAN GREENSPAN. I know the Greenbook uses this measure. It has always struck me as a fairly historical practice from a time when we didn't have data sources.

MR. OLINER. We'll be happy to change it. The impression that one gets from alternative measures of the profit share using a denominator of the type suggested basically—

CHAIRMAN GREENSPAN. Well, it's slightly different. In the chart, the 2001 low is higher relative to 1980, and a few other relationships here are different. That's because there is a significant moving share involving lots of noncorporate GDP trends. Second, with respect to nonresidential structures, I haven't looked at the relationship between the stock of nonresidential structures in constant dollars and potential. How do those two variables run against each other these days? I'm raising the question in the context of one measure of whether we're running into capacity restraints and whether or not structures per se are as reflective of that as they used to be many years ago. I was curious: How should one be looking at industrial construction, for example, or broader private nonresidential construction as an indication of whether there is ample capacity relative to potential?

MR. OLINER. I would offer a couple of observations. The first is that there is a long-term trend over the past twenty to thirty years for corporate investment to be shifted toward shorter-lived assets and away from structures because of pronounced price declines in real terms. So the stock of structures in the NIPA has not been growing very rapidly, and I'm confident it has been growing less rapidly than potential.

CHAIRMAN GREENSPAN. I think it always has.

MR. OLINER. Yes, I think that's right. And in the past couple of years the stock has been growing particularly slowly because construction has been at a low level. At the same time, there's a lot of unused space out there. When we look at vacancy rates for the office sector, they are still close to the highs that we saw in the last couple of quarters, and industrial vacancy rates are still pretty high. Really only in the retail sector does it appear that vacancies are at relatively low historical levels.

CHAIRMAN GREENSPAN. If you combine all the vacancy rates—well, we don't have data for the service sector, which is growing. The reason I raise the issue is that, if we're getting concerned about our measures of gap, there are alternate tests of shortages and we ought to look at them because that's obviously crucial to our assessment of the outlook and our policy decisions. Governor Bernanke.

MR. BERNANKE. Thank you. It didn't pass my notice that the first part of the presentation was in the form of a financial stability report, which I found very useful, and I commend the staff for that. I have a question about chart 4 for the household sector and about chart 5 for the business sector, where you show the average interest rate on the stock of debt vis-à-vis the rate on new debt. I just note that that's an average and, if we're thinking about financial distress, we might be concerned about the tails of the distribution. Do we have any information about the 90th percentile or anything of that sort that would describe whether a significant portion of households and firms are in a danger zone?

MR. OLINER. In the household sector, we definitely think there are pockets where financial problems still exist. The bankruptcy rate has come down over the past half year from where it was at the end of last year, but it is still quite high. Most delinquency rates have been coming down as well, but the levels of some of them are still relatively elevated. So there is certainly a component of the household sector in which financial stress is a consideration. As for the business sector, our feeling is that the tail has probably gotten quite small at this point. We do look at the most distressed part of the speculative-grade universe of nonfinancial firms, and for them there has been a marked improvement in the types of financial ratios that I showed here.

MR. BERNANKE. Thank you.

CHAIRMAN GREENSPAN. President Minehan.

MS. MINEHAN. I want to follow up a bit on what Jeff was asking—not so much on the markup question but on the uncertainty analyses regarding inflation. I notice that in the Greenbook the path for the CPI is similar to that for the PCE—i.e., there's a blip up this year that fades off toward the end of the year and into next year, for similar reasons. If you were to do the uncertainty calculations using core CPI instead of PCE, would they look different? And what would the numbers look like on the upper end of that?

MR. WILCOX. No reasons come immediately to mind on why the main qualitative findings of chart 10 wouldn't hold true with respect to the CPI as well. Energy prices have an important influence on core CPI.

MS. MINEHAN. The mechanics of it don't make the result look any different?

MR. WILCOX. There are differences in weights, so I'm sure that there would be small changes, but I can't think of why qualitatively it wouldn't be quite similar.

MR. STOCKTON. My recollection is as well, from the general Greenbook projections we do, that the sizes of the confidence intervals around our core CPI forecast are similar to those around our core PCE forecast.

MS. MINEHAN. Just looking at the most recent three-month change in the core CPI, an annual rate number beginning with 3 has an impact on the way people think about future inflation. I still think people look more at the CPI numbers than at the PCE numbers just because people are used to seeing the CPI and it is more relevant to them. So, I'm wondering whether numbers that could potentially stay on the high side might have a greater impact—because of their effect on inflation expectations— in terms of this distribution of uncertainty.

MR. WILCOX. That could be, through an expectations channel. As I noted with respect to the channel in the bottom right corner of chart 7, that's one of the reasons we think the Michigan survey results for the short-term expectations have moved up as sharply as they have. It reflects the inflation that individuals are experiencing.

MS. MINEHAN. Yes. There's hardly anybody who believes that prices for them are increasing at only a 1½ percent rate.

MR. WILCOX. Right, but that was true even when we think prices really were increasing at 1½ percent!

MS. MINEHAN. That's very true because for most people the things they care about most were going up more than that.

CHAIRMAN GREENSPAN. President Moskow.

MR. MOSKOW. Thank you, Mr. Chairman. I just wanted to compliment the staff on the work in the chart show on inflation. I thought it was quite thorough and shed a lot of light on an obviously very important area of concern for this Committee. I was hoping that you would shed a little more light on the expectations side, which you didn't talk a great deal about here. We're going through a period now when final price increases have accelerated. Some of the increases are being passed through to the core measure, which is going up in part because of temporary factors that hopefully will phase out so that the core rate will be going up at a somewhat slower pace but still at a rate higher than we've seen in the immediate past. I was wondering if you've thought at all about how this affects expectations for inflation. The upward shift is explained now in terms of temporary factors, but when we get past this—if we're correct about these temporary factors and they are indeed transitory and cease—what impact will this have on inflation expectations?

MR. WILCOX. Again, with reference to that panel in the bottom corner of chart 7, we would expect to see short-term inflation expectations come back down as commodity prices and energy prices moderate. When we run a very simple regression of this short-term inflation expectation on some lagged values of actual top-line consumer price inflation, we can explain most of the recent run-up in the Michigan survey on inflation expectations. So it looks about roughly in line with what one would have expected, given historical experience and the influence of those prices on the expectations that people report to the survey takers. If the energy-price moderation that we anticipate comes to pass, we think those inflation expectations will come back down. We view inflation expectations as a pretty important part of the dynamics and the challenge that you confront as monetary policy makers. And we think one thing that's making your job a little easier than it would otherwise be is that longer-term inflation expectations haven't moved up as yet. But as everyone around this table is aware, the credibility associated with that is not something that can be taken for granted.

MR. MOSKOW. We'll be watching this very carefully.

MR. WILCOX. As will we.

CHAIRMAN GREENSPAN. President Hoenig.

MR. HOENIG. Thank you. I think the discussion of the inflation outlook has been helpful, but it does raise some questions about the sense of optimism in the projection in terms of inflation coming back down as quickly as it does. I'd just like to ask for your reaction because it has been our experience, both when inflation comes down and when it goes up, that we underpredict the change either way. It is on its way back up now, and we're saying it's not going to continue at a very strong pace, and yet history tells us that we sometimes get behind the curve ourselves. Part of the reason I worry about that is that the output gap is actually fairly small and closing rapidly, I think; at least, that's what some projections are showing. And the difference between the unemployment rate and the NAIRU is fairly small; in fact, depending on what the NAIRU really is, the difference could be zero. Looking at where policy is right now, the fed funds rate is so low relative to where neutral most likely is, and we get to neutral so slowly in this projection, that I think this inflation outlook is fairly optimistic—even with the error bands around it. I just have a sense that we perhaps need to be less optimistic on this. My view is based upon the degree to which I think the projections are overstating the difference between the NAIRU and the actual unemployment rate and are not taking into account just how accommodative policy is right now and will be in the near-term future. I guess I'm asking you to be somewhat defensive on this, but it would be helpful for me if you could do that.

MR. WILCOX. Let me try to give you some defensive content without the defensive overlay.

MR. HOENIG. Fair enough. Thank you.

MR. WILCOX. First of all, I think one way to phrase your question would be to say, How sure are you that inflation is going to come back down? I'd say that is about a 60–40 bet, which is pretty close to even money. But given the range of those confidence intervals, I'm trying to point out to the Committee that there's a lot of uncertainty surrounding that question, in terms of how the baseline will evolve. A second piece of evidence I would throw out comes down to essentially the same observation. With regard to how well our models can account for the evolution of inflation, we think an r^2 for an equation for the change in inflation is something like 0.5. This means that half of the variation is not explained by the econometric equation, imperfect as it is, even though we've had a lot of time in the workshop to tinker with the models.

Third, recognizing that there's a wide error band around the baseline forecast, I still think that, on balance, the considerations that went into the construction of the forecast make it a somewhat better bet that inflation is going to moderate from here forward than pick up or stay the same. Again, those considerations include the reversal of a number of factors that we believe to be transitory, which were pushing inflation up in the first half of this year. We anticipate, as you note, some continued modest downward pressure from resource utilization. We think we may see a little benefit from a continuing solid productivity performance and the reversal of the trajectories for food prices and import prices. So those are some of the factors that we think line up to make moderating inflation a better bet, though not by a wide margin, than intensifying inflation.

MR. HOENIG. Thanks.

CHAIRMAN GREENSPAN. Governor Ferguson.

MR. FERGUSON. I have two types of questions. First, on the inflation topic we've been talking about, I was struck that in chart 10 you are arguing that the inflation we've seen derives from primarily two sources. One involves a gap-type analysis that you're evaluating in terms of the NAIRU, and the other involves elements of pass-through. You have not put forth any concept that what we may be dealing with is basically some sort of fundamental speed effect, maybe indirectly related to the NAIRU. Essentially a speed effect versus a potential growth rate concept hasn't come through in your analysis. And in some sense, a simpler view of inflation as purely a monetary phenomenon also hasn't come through. You have chosen the three sources of uncertainty shown in the chart, I think, because they reflect recent history. But as you consider other ways of forecasting and thinking about inflation, do these other theories or approaches to predicting inflation or understanding inflation have any role in your models or in the way you think about inflation going forward?

MR. WILCOX. First, with respect to the two types of channels, I would like to underscore that the decomposition that is presented here in this chart is partial. It is not an exhaustive decomposition of all sources of uncertainty. In particular, one thing that we didn't display was a confidence interval associated with the error term. The reason is that the error term embeds so many different influences, including inflation expectations, which President Moskow referred to, commodity price pass-throughs that may occur through channels other than just energy prices, competitive pressures, and regulatory influences. It's the bucket into which everything in the "all else" category goes. So I would not want to characterize our view as just two channels—gaps and these other variables.

On the absence of a speed effect, we looked pretty hard for a speed effect and disposed of a lot of degrees of freedom in the statistical world in that search. We think there is a discernible speed effect in the prices of items that are in relatively inelastic short-term supply. But for final core PCE prices, we can't find it. And we're reassured in that by reference to some particular historical episodes like the recovery from the very deep recession of 1980-82, when the unemployment rate was rising very rapidly and yet inflation continued to decline. Now, if there were a strong speed effect, it should have shown up during that period, and it didn't. So we've looked hard on the econometrics, and we've done some case studies, and neither approach leads us to think that there's much there.

With respect to direct monetary influence—whether money itself shows up in inflation—we think it's important, but we think it's important in setting the background factors that we believe influence the inflation dynamics more fundamentally. We think that what monetary policy is doing is altering the balance of factors like the gap and resource utilization, for example. When we have moved to test a direct influence of money in our price equation, it's a little like a mirage on the highway: Sometimes it's there a little bit, and sometimes it disappears. We can't find a reliably strong statistical relationship. So we think this is a good, albeit imperfect, framework to use for the entire analysis.

MR. FERGUSON. The other question I have deals with chart 3, on housing prices. My question is about the footnote, which says that the rent–price ratio is adjusted for biases in the trends of both rents and prices. Is that where you pick up demographics and lifecycle factors? What are these biases in the trends, and how does one think about changing demographics and the relative attractiveness of owning a home versus renting? Give me some sense of whether or not the shape of the curve that you show here is likely to reverse, as you imply, or likely to stay relatively low.

MR. OLINER. The biases referred to in that footnote were really technical biases in the construction of the two measures shown here, the rent measure and the price measure. Had we not adjusted for them, the rent-to-price ratio would have been much lower at the end point. So it would have looked more alarming. In part we think the published data have some technical problems that need to be taken care of before this analysis can be done in a way that is meaningful.

With regard to the question of owning versus renting, it depends to some extent on what is happening to interest rates because that changes that calculation at the margin. So it's really important to plot any kind of valuation measure relative to an opportunity cost. Just showing the rent-to-price ratio I think would have been somewhat misleading; it's really that gap that we think is the meaningful measure of valuation. And it looks somewhat rich, taking account of the fact that interest rates are relatively low and income growth has been relatively strong. I don't want to leave the impression that we think there's a huge housing bubble. We believe a lot of the rise in house prices is rooted in fundamentals. But even after you account for the fundamentals, there's a part of the increase that is hard to explain.

CHAIRMAN GREENSPAN. Governor Gramlich.

MR. GRAMLICH. I, too, thought the presentation by the staff was very good this morning. I must say, as one who is going to talk about similar things in my own remarks, mine is going to sound a little lame in comparison! But there was one issue that you didn't talk about this morning, and not much was said about it in the briefing on Monday or in the Greenbook either. And that is, despite the low utilization rate, wages have kept up. Does that worry you? Is this something that is a reversion to normal in a regression equation, or is this the start of something that we ought to worry about?

MR. WILCOX. We think wages are being supported by the rapid productivity growth that we've had over the last few years. We think that is adding a tenth this year, for example, compared with last year and another couple of tenths next year. On the other hand, overall we don't see ECI compensation accelerating greatly. One of the influences on the ECI that we believe will hold it down is health insurance costs, which we expect to contribute less to the rise in ECI this year. Also, we actually think that in 2003 the growth of ECI was a little stronger than we could account for in our models, and we project that that puzzle will go away. So the balance of all those factors leaves our projection just slightly flat this year compared with last year and up only a little next year. There are risks. One of the risks to that compensation projection, which we've highlighted, is the decline in the markup. If workers bid more aggressively for their share of the pie than we built into the baseline or if firms are more eager to ramp up their production than we've assumed, that compensation trajectory could turn out to be too optimistic.

MR. STOCKTON. Governor Gramlich, those figures did get our attention, though. There were upward revisions to the nonfarm business comp hours starting in the fourth quarter of last year, and we also missed on the ECI in the first quarter—it came in higher than we had projected. That was one of the factors that prompted us to go back and look at our estimates of both the NAIRU and potential output. We made a very marginal, almost cosmetic, upward revision to our estimate of the NAIRU—we raised it by just a tenth—but we also revised down potential output just because we thought the overall constellation of wage and price data was more negative than we had anticipated, given our previous estimates of the levels of potential output and the gap. So I think we've tried to respond to that, but it was something we found troubling vis-à-vis the views that we held in April.

CHAIRMAN GREENSPAN. President Pianalto.

MS. PIANALTO. I want to follow up on what you just said, David. You mentioned that less slack wasn't the major contributor to the bulk of the rise in inflation, but you didn't comment on exactly how much your estimate for slack has changed. Can you tell us how much you reduced that estimate from the time of the May Greenbook? You made a few remarks about that, but is that the sole explanation for the change in the fed funds rate path from the May Greenbook to the current Greenbook? There is a significant change in that path. Is it all a reflection of the change in that estimate for slack?

MR. STOCKTON. I'd say that two factors are behind the revisions we made to the federal funds rate assumptions that underlie our forecast. One, importantly, was the downward revisions we made to potential output. In essence, those downward revisions suggested to us that you needed to be closer to neutral by the end of our forecast period than we had previously assumed. A piece of that—and these are all simultaneously determined within our forecasting system—was that the inflation figures were higher as well. We didn't think that revising up our inflation forecast as much as we did, without making a corresponding adjustment to the federal funds rate—and therefore allowing the real federal funds rate to be on a weaker path than we had in the last forecast—would be warranted. So the higher inflation and the lower estimate of potential output suggested to us that the underlying path for the funds rate probably needed to be steeper than we had been assuming previously.

CHAIRMAN GREENSPAN. President Stern.

MR. STERN. Dave, one thing that surprised me about the baseline forecast and also about most of the simulations was the flat ten-year Treasury rate. If I want to take, say, the market-based funds rate scenario and assume that the ten-year rate goes up about half as much as the funds rate over that period, then as a first approximation should I just extrapolate or interpolate the real growth and unemployment numbers based on that? Or do you think there's more going on there?

MR. OLINER. Maybe I'll just start off by talking for a moment about how we got the assumption for the ten-year rate. We begin by asking ourselves where we think the ten-year rate would go by the end of our forecast period under the market-based assumption for the funds rate. Our guess is that it would be up about ½ percentage point from where it is now, just using the usual term structure arguments that relate short-term rates to long-term rates. So we deviated from that by holding the ten-year rate essentially flat. That reflects our belief that, if our view for inflation turns out to be correct, there will be a favorable market surprise that will keep the ten-year rate from rising along the path that it otherwise would have taken.

MR. WILCOX. In our alternative simulation for that market-based funds rate, we have the ten-year Treasury bond rate coming up 20 basis points by the end of the forecast period.

MR. STERN. Right. I was speculating that it might be more than that. Presumably you've got a greater impact on the ten-year rate in the market-based scenario.

MR. STOCKTON. Obviously, it depends a little on whether rates move up earlier in our projection period or later. My guess is that if there were a significant surprise on long-term interest rates next year, most of the impact of that would probably be felt late in the year and moving into 2006.

MR. STERN. Okay.

MR. BERNANKE. President Stern, I asked the staff to calculate for me if we followed exactly the path of the funds rate that is now built into markets, where the ten-year rate would be a year from now. And their answer was 30 basis points higher than it is today. So, it is not 50 percent of the rise in the funds rate.

CHAIRMAN GREENSPAN. Governor Bies.

MS. BIES. I have a question on chart 3 on the commercial real estate valuation. Having lived through the 1986-91 period when the NOI(net operating income)–price ratio was down to the levels it is today, I look at that period as abnormal because we had tax changes that were retroactive, which basically put a lot of real estate projects and ownership under water. So we had a tremendous upheaval in the real estate market, with people filing for bankruptcy and dumping properties. It worries me that we're back down in a sense to a situation that is comparable to that severe turn in the real estate market. I really look at that as a good example of how retroactive taxes affect people's return targets when they enter into long-lived projects.

MR. OLINER. I was actually here at the Board during that period, and I remember that we were concerned as well in the late '80s about real estate valuations and the amount of construction still going on given that the tax benefits had been withdrawn in 1986. We did not really understand what the rationale was in the market. Ultimately it turned out that there was a massive amount of over-construction and lending standards that were too lax. I think there are some reasons to be watchful of developments in the commercial construction sector at this point. It is clear that the compensation for risk has gotten somewhat thinner in this market than it was throughout the 1990s, presumably after market participants had learned some lessons from the very thin compensation that they accepted through the '80s. On the other hand, we do see some rather substantial differences in the structure of the commercial real estate market at this time. Lending standards do seem to have held much firmer. And there's a lot more transparency in the market now because of the more widespread availability of data on prices and rents to market participants. So we think the decisionmaking is better. I wouldn't say it is perfect. We do feel that there is some reason to be alert to developments in that market.

CHAIRMAN GREENSPAN. President Lacker.

MR. LACKER. Just to follow up on what Roger was asking about the panel in chart 3 on housing valuations. In that panel the relative movement of the two measures is somewhat key to at least the intuitive persuasiveness of the argument that housing might be overvalued. I understand the units of the real long-term Treasury yield. I don't understand the units of the rent-to-price ratio.

MR. OLINER. The rent and the price data come from different sources; they are not part of an integrated system. The rent data are from the CPI, which is itself only an index number. So there is no way to say the rent–price ratio is 8 percent—like an earnings–price ratio, for example.

CHAIRMAN GREENSPAN. It is proportional to whatever that number would be.

MR. OLINER. Yes. We could make the level of the red line anything we wanted to, but we could only move it in a level adjustment up and down.

MR. LACKER. But you set the scale, too, right? You could set it so that the zeroes are the same on both axes?

MR. OLINER. Right. With creative charting we could make the relationship between the two series shift up and down however we wanted. That's why we're stressing—

CHAIRMAN GREENSPAN. But that's not so for the ratio between those two series. That is invariant to the scale.

MR. LACKER. Yes, that's true; they ought to have the same zeroes it seems.

CHAIRMAN GREENSPAN. No, no. If you have a relative measure that is an actual ratio, the ratio of the two numbers is invariant to what the relative number is.

MR. LACKER. That's right. But in the chart, the staff has the zero set at very different places on the two scales.

CHAIRMAN GREENSPAN. You can't trust them to do it right! [Laughter]

MR. LACKER. I'm just wondering, how did you decide where to put the zero? If you put it much closer to where the zero is for the long-run Treasury rate, the squiggles in the red line would be a lot smaller.

MR. OLINER. You can make the squiggles as small or as large as you want.

MR. LACKER. Right. And your argument has to do with the size of the squiggles?

MR. OLINER. No, I think the argument has to do with the size of the gap between the two. And the current gap relative to its average over history—

CHAIRMAN GREENSPAN. The scale will not change the fact that the gap is closing. The conclusion is independent of the scale. You could try any variation you want, and that gap will always close.

MR. LACKER. The gap between these two lines?

CHAIRMAN GREENSPAN. Yes.

MR. OLINER. No matter what we used for our charting convention, the gap would be relatively narrow now compared with its historical average.

CHAIRMAN GREENSPAN. Just take the ratio of the two ratios, and it will be going down.

MR. LACKER. That's fine for now.

CHAIRMAN GREENSPAN. Further questions? I noticed in some of the monthly data that the productivity numbers in the second quarter seem to be coming in under the 2.4 percent Greenbook forecast. Is that your sense? I note that the compensation per hour seems okay, but the figures implicit in the personal income data at least suggest that we would be getting a somewhat higher unit labor cost than is in the Greenbook.

MR. WILCOX. In the Greenbook we had nonfarm business productivity at 2.4 percent. A quick update of that based on the information that we received on Friday and Monday would put it at 1.9 percent.

CHAIRMAN GREENSPAN. So it's a somewhat higher unit labor cost?

MR. WILCOX. Unit labor costs are up 0.4, right.

CHAIRMAN GREENSPAN. Okay. Who would like to start the Committee discussion? President Moskow.

MR. MOSKOW. Thank you, Mr. Chairman. The expansion in the Seventh District now appears extremely broad-based. Very few sectors are weak, and some are booming. This may be hyperbole, but several of our contacts said that the business climate was as strong as they can remember. One of our directors, whose private S corporation shows about forty different businesses, said that he can't recall when so many companies in so many different industries were doing so well. Similarly, the national temporary-help firms headquartered in our District report that their business is finally following a classic recovery growth path. And the Chicago Purchasing Managers' report, which is being released this morning, continued to show expansion, albeit with a sharp decline from 68 in May to 56.4 in June. We recently held our annual automotive outlook symposium, and the overall mood was upbeat. Thirty-five industry experts submitted forecasts, and their consensus was for light motor vehicle sales to increase to 17 million units in the second half of this year and be at about the same pace in 2005. These numbers are lower than the Greenbook forecast, especially for ’05. And a truck industry analyst forecasted that production in medium- and heavy-duty trucks would rise from about 300,000 last year to 370,000 in 2004 and to 460,000 in 2005.

So, given that the expansion in real activity seems to be on such a solid footing, I’d like to focus on what we’ve heard about emerging inflationary pressures. Certainly, more firms are reporting price increases. Euphemisms like “price restoration” and “fuller pricing” are common. Some price increases are related to higher energy costs and strengthening worldwide demand for steel and other commodities. We know that prices for many commodities have come down of late, as was mentioned before, but it is still too early to know whether they’ve peaked. Many other reports suggest bottlenecks in sectors where sales have increased rapidly, such as construction equipment, agricultural equipment, and fiberboard packaging. In some cases, inventories of raw materials and parts were low; in others, supply chain bottlenecks led firms to use higher-cost alternatives like air freight to avoid parts shortages and production delays. So will these price increases become permanent? We obviously don’t know yet. One good sign we’ve heard is that, while a number of our contacts said they were willing to accept recently imposed price surcharges from their suppliers, they were still resisting base price increases. This may be a distinction without a difference, but many of our contacts seem determined to keep pressure on their suppliers. As soon as commodity prices fall, they expect the surcharges to come off. And their plans still assume lower input costs. Most contacts report that their profit margins are good, so they may have quite a bit of room to absorb cost increases without raising prices. Indeed, I get the feeling that many of them do not expect their hefty profit margins to continue indefinitely.

Turning to the national outlook, with labor markets firming, the expansion appears to be on a solid self-sustaining track. Our own outlook for economic growth is a bit weaker than the Greenbook's for '04 and a bit stronger for '05, but the differences are small. We now see core PCE inflation rising this year and settling down to around 1½ percent next year. We interpret the recent increases in inflation as largely reflecting temporary effects rather than more-sustained price pressures. And this view seems consistent with comments from our regional contacts, which suggest that the economy is not running into fundamental capacity constraints.

With regard to unit labor costs, we expect to see a sustained pickup as labor markets tighten, but I don't think that the bulk of these increases will be passed on to prices. Rather, as I mentioned earlier, I expect that most will come out of currently elevated markups as labor's share of income moves back up toward more normal levels. Of course, there is a lot of uncertainty surrounding this scenario. I am hearing increasing concerns that the Federal Reserve might be behind the curve. I personally think our credibility is solid, but if higher inflationary expectations become entrenched, that would obviously make our job much more difficult.

If inflation remains on the moderate path that I expect, then a measured pace of policy moves would likely be appropriate. However, the Committee must have the flexibility to act more aggressively if inflationary pressures intensify. We think financial markets as well as the nonfinancial sectors could handle aggressive moves, if needed. This was also the view of academic and business economists we met with last week. So the policy statement should reiterate what we've all been saying in public—that we will do whatever is necessary to maintain price stability. The statement should not give the appearance of constraining the Committee's freedom of action at subsequent meetings.

CHAIRMAN GREENSPAN. President Minehan.

MS. MINEHAN. Thank you, Mr. Chairman. By almost any measure, economic activity has picked up in New England and shows signs of being on a solid upward trend. Regional employment grew for the third consecutive month in May, bringing the region's job count even with its year-ago level. Only in Massachusetts has the employment level continued to be below that of a year ago. Similarly, the unemployment rate in the region, while bouncing from month to month, is well below both its high and the comparable data for the nation as a whole. Consumer confidence has been off of late, possibly reflecting lower wage gains in the region than nationally, and spending is growing more slowly than elsewhere as well. Quite possibly both of these will pick up as the employment situation continues to brighten. In that regard, business confidence is good. Business spending is reported to be solid. Merchandise exports have been growing strongly. And the stock indexes that Bloomberg does for the region have outperformed their national counterparts. Even the fiscal picture for state government is brightening, with revenue growth above budget for the first half of fiscal year 2004, though structural deficits and prospective funding challenges remain.

Anecdotally, most contacts report strengthening in current business conditions and in their outlook for the future—moving, as one said, from cautious optimism to more optimism than caution. Most of our contacts, including members of our New England Advisory Council and attendees at recent economic forums we've held, reported increases in sales, orders, or revenues in the first quarter of the year. Virtually all of them also mentioned input cost increases, including for steel, oil and oil-related products, and transportation and delivery costs. President Poole might want to inform his contacts at UPS and FedEx that, at least among small businesses in New England, there is a revolt building because of the high cost and service restrictions related to FedEx and UPS package deliveries. One gift and specialty manufacturer, whose peak periods include Valentine's

Day and Mother's Day, was surprised to find her next-day volume capped on the day before those holidays. Not a good thing for a business that she says is built on love and guilt. [Laughter] Despite these and other rising costs, even smaller firms report that they have more pricing power and are able to pass on cost increases. Even in the highly competitive world of supplying car manufacturers, price increases related to steel and oil costs were passed on, and those increases stuck. Finding sufficiently capable labor even for entry-level positions has become a problem as well. In particular in the hospitality industry, the limits on H-2B visas are a serious problem for seasonal firms. A lack of labor supply continues to encourage, if not inspire, the search for productivity improvements at firms large and small.

In sum, the situation is better in New England now than at any time since late 2001 and there seems to be little reason to suspect that the pace of overall progress will diminish much, at least over the next year or year and a half. New England has lagged the United States a bit in the recovery, but I expect it will catch up this summer or later in the year.

Looking at the national data and thinking about the worries at this time last year, one can only marvel at how fast things can change from job loss to job growth, from policy-induced to what looks like self-sustaining demand, and from worries about deflation to real concerns about inflation. Incoming data suggest that both consumer and business demand are solid, and the pace of hiring has surpassed expectations. The rest of the world is growing, and fiscal policy is likely to remain expansionary this year. Assuming curtailment of the investment tax credit next year, fiscal policy will be less expansionary. But who knows about continued spending on the military or otherwise?

Boston's forecasts for the next year and a half don't differ much from those of the Greenbook when done using similar funds rate assumptions. That is, we see what one could view as a near perfect combination of quite solid growth, continued strong productivity trends, slowly falling unemployment, and rates of inflation that moderate after the pickup in the first half of '04. This forecast is shaped by the assessment of slack remaining in the economy and the belief that growth will not be constrained by resources for some time, perhaps not until year-end 2005. Thus, broad-based inflationary pressures—not just those associated with what is seen as a temporary blip in oil prices—should not be an issue. Under both Boston's and the Board's staff forecasts, policy should begin to tighten but can move up slowly to a level below that of market expectations by the end of 2005.

However, I think this forecast outcome is about as good as it gets. Even if it is the most likely outcome, the risks around it seem to me to be substantial and appear to be weighted on the upside, at least to the extent that such risks don't involve unpredictable geopolitical events. That is, it is hard for me to feel particularly confident about a sizable remaining output gap when inflation data for both the first and second quarters, whether measured by the CPI or PCE and whether looked at overall or on the basis of core estimates, show a substantial uptick. The best guess may be that this sharp upturn is temporary, but two things about inflation seem undebatable: It has flattened, and its near- to medium-term trajectory is up. Just as the speed of the pickup in employment has been a surprise this year, so too could we be surprised on the upside by inflation. The Greenbook alternatives capture this in the higher inflation expectations scenario, but I suspect that some combination of stronger demand, less room to grow, and rising inflation expectations could work together to produce an outcome more negative than that alternative. That's perhaps not a high probability event, but it's one that does concern me.

In that regard, I think the time has come to start moving the fed funds rate up and to get real short-term rates first to a positive position and then to a more neutral level. The markets expect this. If we don't start doing it, I think the yield curve probably will steepen with a rise in the inflation premium. Moreover, I also think it's time to remove from our statement any characterization of how we will act in the future. Let's say what we are doing, why we are doing it, and comment on the risks, but let's not make any implied commitments about the pace of our actions going forward. The risks are real. We may or may not want to characterize them as mostly one-sided but we ought to reserve the capability to deal with them as we see fit when, and if, they materialize.

CHAIRMAN GREENSPAN. President Santomero.

MR. SANTOMERO. Thank you, Mr. Chairman. Economic activity in the Third District continues to expand and, in contrast to the last time we met, I can now report that we've seen solid job growth in the region. Payroll employment in our three states rose 0.6 percent from the first quarter to the first two months of the second quarter, matching the national increase. Each of the states has reported employment gains, and the gains were widespread across industries, with employment up in all of the major sectors except manufacturing. The most recent data show that in New Jersey and Delaware payroll employment has recovered from the recession trauma. But Pennsylvania still has a way to go to make up for jobs lost since the start of the recovery; specifically, Pennsylvania payrolls remain about ½ percentage point below the recession trough. The three states' unemployment rates edged down to 5.1 percent in April and May. We are still receiving some reports that firms are having difficulty finding qualified workers, a point we just heard from Boston.

The other sectors in our District continue to perform well. Retail sales and general merchandise remain on a fairly consistent upward trend, although auto sales have slowed somewhat and appear to be softer than elsewhere in the nation. Most retailers have become more optimistic about sales in the second half of the year. Commercial real estate markets in the region remain soft, but residential construction activity and home sales have been strong. Home prices in our region continue to appreciate at a steady rate, but our contacts in the residential real estate market said that some homes are taking longer to sell now than they did earlier this year. Manufacturing activity in the region continues to expand. Our business outlook survey index of general activity increased to 28.9 percent in June, up from 23.8 percent in May. The index has been in positive territory for over a year now. The more forward-looking indexes of new orders and shipments also improved in June, with all industry classifications except food and transportation showing positive readings. The head of a large trucking company in our region reports that orders from March to early June have been as strong as is usually seen during the peak transportation months preceding the Christmas holidays—a phenomenon he says is extremely rare. Indeed, it is very rare to see successive strong months at peak levels during a nonpeak period.

We continue to get readings of rising prices in our region. The same trucking company contact I just mentioned said that fuel surcharges are common and that even his largest customers are now willing to pay these surcharges. So transportation costs are rising significantly. He also reported that labor is in very short supply. And he expects truckers' wage rates to rise substantially this year, following the first-ever successful strike by independent trucking contractors. That strike occurred in California and, according to the press, is spreading across the country. The prices-paid and prices-received indexes in our manufacturing survey eased a bit in June but remained at nine-year highs. In response to a special survey question in May, nearly half of our respondents said they had raised prices since the beginning of the year, and more than half expected to raise prices in the third quarter. The expectations among contacts in the business community are for continued improvement in the region's economy, and I share their view.

Turning to the nation, incoming data have confirmed that the recovery has reached the point of being self-sustaining. Production activity continues to expand at a good pace, business investment is accelerating, and consumer spending continues to rise at a moderate pace. With the confirmation that solid job growth is finally at hand, it is my view that the economy has left the recovery phase and is now in what we could call an economic expansion.

When I compare the Board staff's forecast with ours, I find that the Greenbook projection, even the most updated one, sees a little less underlying strength in the economy than our forecast. We achieve similar outcomes, but the Philadelphia staff thinks that those outcomes are consistent with a steeper funds rate path than that in the Greenbook. We see a bit faster growth this year than the Greenbook does—4.6 percent compared with the updated 4.4 percent—and somewhat stronger growth of 4.0 percent next year compared with the Greenbook's 3.6 percent. The Greenbook projects slower productivity growth and thus faster job growth than in our forecast. While we expect job growth to average around 200,000 jobs per month for the second half of the year through 2005, the Greenbook projects that nonfarm payrolls will rise at an average rate exceeding 300,000 per month during the rest of this year before slowing to 200,000 a month for much of 2005.

Yet our most significant difference with the Greenbook is our view on inflation. It is obviously the subject of this meeting, as we can see from the charts and the discussion. We agree that the first-quarter spike in core inflation, especially core CPI inflation, will not be repeated. However, even given our steeper funds rate path, we see a rising trend in inflation while the Greenbook has a deceleration. In particular, we see the core PCE price index accelerating from 1.5 percent this year to 1.9 percent next year, while the Greenbook sees it decelerating from 2.0 to 1.6 percent. Our forecast reflects the historical evidence that extended periods of negative real rates are followed by rapid real growth and rising inflation, and that forecast is supported by anecdotal evidence that a growing fraction of firms report that they are raising or planning to raise prices. We could be wrong, but it is hard for me to believe that the Greenbook has it exactly right.

As with all forecasts, there are risks. On the growth side, I see the risks as balanced. We have a conservative view of oil prices, assuming a modest drop from the levels of the past few months followed by essentially flat oil prices from the fall of this year through 2005. My reading of the Board's memo on energy and our own staff's work suggest that we need not be too concerned about the effect of the rise to date in oil prices. The increase in real terms has not been as large as past shocks, although it appears to have been more prolonged, and the economy is less reliant on energy for production. There is some risk of a larger, more persistent rise in oil prices than we have assumed, which could be both contractionary and inflationary. On the other hand, oil prices could drop appreciably for any number of reasons.

On the inflation side, I see the risks as balanced, provided that we begin to take the necessary steps on the path back toward neutrality. The Fed has already provided a lot of liquidity for the financial system, and that degree of liquidity will become increasingly unnecessary and counterproductive as the expansion proceeds. I believe that we now need to take the necessary steps to ensure that the recent acceleration in inflation does not become embedded in inflation expectations. That means taking action today. Let's start this process of putting the funds rate on an upward trajectory. At this point, I do not really know the speed at which we will need to move the fed funds rate up in the future. We all know it will depend upon the incoming information we receive on economic conditions and on our assessment of the outlook at subsequent meetings.

Given the uncertainty surrounding inflation dynamics, I believe we should put ourselves in a position of maximum flexibility with respect to policy going forward. In this regard, the less we say now about future actions, the better I would feel. In my view, we should be in the position to respond to the incoming data without having to consider whether a particular action is at variance with what we said at our last meeting. That suggests simplifying our statement today and/or limiting our commitment to the expected speed with which we think we will have to adjust policy. Such language was useful when we faced unusual economic circumstances. Today, in my view, language as policy has overstayed its welcome.

CHAIRMAN GREENSPAN. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. Business conditions in the Fourth District began to improve noticeably just before our last meeting in May, and the outlook remains somewhat positive. After a long period of relative quiet, my business contacts are now busy adjusting to higher sales volumes. They are installing new capital equipment and reorganizing business processes. They are also coping with the volatile pricing environment and, in a few cases, are beginning to add to payroll. So most people in the Fourth District are expecting a solid year. I don't really see much evidence that the pace of economic activity is poised to accelerate further as we head into the second half of this year. So the Greenbook projection for real GDP growth in the 4½ to 5 percent range this year, with the pace slowing somewhat next year, seems consistent with what I hear from my business contacts in the District.

CEOs remain disciplined about adding to their payrolls. They are not allowing the stronger demand for their products to shift their focus away from improving productivity. I hear consistent stories from business persons, whether they're from large companies or small companies, that they continue to see opportunities to add to their productivity gains today and into the future. Many of the company executives that I speak with are talking more and more about "lean" manufacturing. They are using these lean manufacturing strategies to significantly increase the through-put in their facilities by taking unproductive steps out of the production process. And the end results include greater flexibility in their scheduling and enhanced customization of their products for their customers. They find that they are holding smaller inventories and that their customers need to hold smaller inventories, and they are able to produce more volume with almost no additional employees. In some cases, after companies "lean out" the factory floor, they move on to lean out their back office operations. So I've seen, at least in the manufacturing sector, continued growth in productivity.

The CEO of a very large global producer of pneumatic and hydraulic equipment told me that his company's productivity has been increasing at 10 percent annual rates recently and that he sees that continuing for the next several years. I know that might be an extreme case, but I'm hearing that kind of story from lots of CEOs I talk to, again because of their use of some of these lean manufacturing techniques. So I will not be surprised to see the elevated levels of productivity that we have been witnessing in the manufacturing sector continue for a while. Now, on the one hand, the strong productivity growth has enabled firms to keep their unit labor costs lower than otherwise, and that, they say, has enabled them to limit price increases. On the other hand, economies do tend to display a close correspondence over time between the rate of productivity growth and the rate of return on capital and the equilibrium real rate of interest. Consequently, and especially since we've been talking about the low rate of domestic saving in the United States, as I look ahead I do expect to see forces at work that are consistent with a rise in the equilibrium real rate of interest. I'm less confident about the magnitude and timing of that rise than I am about the general direction.

At our last meeting, I expressed some concerns about the significant increases in commodity prices and the message that I was getting from CEOs that they had more pricing power. I was becoming concerned that those were the first signs of a fundamental change in the inflation process. So I spent a great deal of time during this intermeeting period talking with business leaders about this issue. The result of my conversations is that I am not seeing strong evidence that the recent upsurge in commodity and consumer prices is foreshadowing a buildup in inflationary pressures. My business contacts report that, while many of the recent commodity price increases will stick, others will not. Energy prices have come back down from their highs, as have some other commodity prices. In some cases the raw materials price increases can be passed along the supply chain, but a lot of my contacts still say that others cannot. And unit labor costs have not been rising. So, in general, business persons do not talk as though they are expecting any worsening in the inflation climate from where we are today.

I think there are good reasons to expect that we can keep the trend core PCE in a range close to1½ percent for the next several years, if we get monetary policy back toward neutral within a reasonable period of time. At the moment, I think the inflation risks facing us have shifted from a balanced position toward an environment in which inflation could gradually creep up over time if we aren't vigilant. But I will feel less anxious about this imbalance of risks if we move the fed funds rate up today and continue to do so for a while, at a pace in tandem with the expansion and consistent with getting policy back toward neutral. Thank you, Mr. Chairman.

CHAIRMAN GREENSPAN. President Hoenig.

MR. HOENIG. Mr. Chairman, the Tenth District economy has continued to expand at a very solid pace since the last meeting. The labor market shows substantial signs of improvement. The District's employment rose in May, and I think the numbers in June are also very strong, and jobs are above year-ago levels in all seven of our states. Manufacturing activity rose in May, and the preliminary numbers coming in for June are very solid. Production and new orders continue to increase, and most plant managers that we talked with reported that their rates of capacity utilization were back to pre-recession levels. Expectations are that activity during the second half of the year is likely to cool somewhat but will still be at historical levels. Year-over-year production and new orders indexes actually are setting new highs in our region as we move through June. Consumer spending continues to rise at a moderate pace. Retailers report steady gains in sales, and we are optimistic about the summer outlook. Housing activity also remains strong. So far, home sales and homebuilding have shown little adverse effects from the increases in mortgage rates we've seen to date. Energy activity has continued to expand in response to the high oil and gas prices, and actually some drilling has been constrained because of the shortage of labor in that particular sector. Commercial real estate, as others have reported, remains our weak spot as well.

On the inflation front, wage pressures remain constrained in the region, but manufacturers are continuing to raise output prices in response to what they say are higher energy and raw materials costs that they feel they need to pass on. Most manufacturers do expect these costs to moderate; however, many of them are now telling us that the strong demand has made it easier for them to increase prices and to have the increases hold.

Turning to the national outlook, the economy obviously continues to expand at a solid pace. We expect that GDP growth will be around 4¾ percent this year and just slightly below 4 percent next year. The important point, I think, is that the continued strong growth largely reflects the fact that we have an accommodative monetary policy and a stimulative fiscal policy and that strong growth around the world is facilitating growth in our GDP. The slowdown in growth that we're projecting for next year is related, of course, to some back-off in fiscal policy and a presumed tightening in monetary policy.

Let me talk a bit about inflation. Core inflation, as we all know, has increased. Although we talk about important transitory elements to that increase, I still think that the core price indexes now have embedded in them some inflationary updrift that is due to our earlier accommodative monetary policy. And while fiscal policy may back off, it is still going to be stimulative, and we are going to be in an accommodative policy stance for some time. So as I think about policy going forward, I would join those who encourage us to have in mind moving back toward neutral at a more deliberate pace and in a very systematic fashion. We should move to neutral more quickly and avoid having to go above neutral later to contain inflation, which I think is now threatening in light of our easy policies in the past. As far as the statement is concerned, I think we should be very sparing with our words regarding our likely future policy course. I'd let the economy define what our future policy will be and not our words today. Thank you.

CHAIRMAN GREENSPAN. Shall we break for coffee? See you all shortly.

[Coffee break]

CHAIRMAN GREENSPAN. President Yellen.

MS. YELLEN. Thank you, Mr. Chairman.

CHAIRMAN GREENSPAN. It took me a while to figure out how to address you! [Laughter]

MS. YELLEN. The Twelfth District economy gained momentum in recent months and is expanding in line with the nation. Consumer spending rose smartly, and our contacts report that price discounting for a variety of small retail items has declined as demand has grown. District housing markets saw strong price appreciation and strong sales. Some of the sales activity, however, appears to be a response to anticipated mortgage rate increases, suggesting that markets will calm down again in subsequent months. We are also seeing a continued general recovery in the manufacturing sector as rapid growth in exports, especially to East Asia, has propelled strong gains in overall output and sales.

Job growth has also gained momentum in the West—especially outside California, which has lagged a bit in recent months. As a result, employers in some areas report that it is getting harder to find qualified applicants for job openings. The mountain region in particular has seen a large increase in job vacancy rates over the past year and a half, and this has been associated with a pickup in the growth of labor compensation relative to the nation. In fact, growth in compensation recently has been nearly a percentage point higher in the West than in the nation. Such divergences have occurred before, because of regional labor demand shocks, and have disappeared as workers moved into the region to fill those jobs. Labor compensation in the West then returned toward the national pace. At this point, it is too early to tell whether the recent pickup is transitory, due mainly to such a regional demand shock, or is the leading edge of a trend that will spread more broadly in the national economy.

Turning to the national economy, our views about the outlook are pretty much in line with the Greenbook. Recent data suggest that economic growth in the second half of the year will be reasonably strong, and the most likely outcome over the next couple of years seems to be that the pace of growth will exceed potential, bringing the economy gradually back toward full employment. What is new about the outlook compared with May is the strong employment growth reported for April and May, which raises confidence that consumer spending will remain strong enough, as fiscal stimulus wanes, to support the very desirable projections for economic activity and inflation that are outlined in the Greenbook. Of course, to keep output from overshooting potential, policy will need to tighten, given its current highly accommodative stance. We think a path of the funds rate reasonably close to that currently embodied in the fed funds futures will be appropriate given what we now know. Such a path easily qualifies as measured. Of course, our views will evolve with unfolding data.

In terms of the inflation outlook, I agree that rather substantial risks remain on both the upside and also the downside. On the upside, there is the possibility that the role of transitory factors—as opposed to movements in compensation and productivity—in explaining the surprising recent uptick in core inflation is overestimated by the Greenbook. The uptick in core inflation could also affect future wage bargains. The dollar could fall further, and oil prices could jump or remain elevated. We have also seen a small uptick in compensation growth, although my reading of the labor market is that there remains a significant amount of slack. Finally, not emphasized in today's presentation, there is upside potential for inflation if trend productivity growth falls short of the rather robust rate that I believe is built into the Greenbook forecast.

However, there are also a number of downside risks to inflation, as the Greenbook and the presentation this morning emphasized. One that David emphasized has been particularly important to us in our analysis—namely, that profit margins have been extraordinarily large and the markup of goods prices over unit labor costs in level terms has risen to a new high. This large markup could return to more normal levels through falling inflation or through faster growth in labor compensation or a combination of the two. We saw such a run-up and rapid reversion toward normality during the second half of the 1990s. Based on our analysis, which is similar to an alternative simulation reported in the Greenbook, it is quite possible that, if prices and wages adjust consistent with standard model equations over the next year and a half, the restraint on inflation could be quite significant. In any event, the most likely scenario appears to be that core PCE prices will increase by a little over 1½ percent this year and around 1½ percent in 2005. I see the risks to this forecast as being rather large, but also the inflation risks seem roughly balanced.

CHAIRMAN GREENSPAN. President McTeer.

MR. MCTEER. The economic expansion in the Eleventh District started later and has been somewhat slower than the U.S. expansion, but remarks from our directors, Beige Book contacts, and others suggest that the gap is closing fast. The director reports from our various board meetings in the past few months have been considerably more upbeat.

Rather than dwell on the ups and downs of different sectors of our regional economy, I'd like to focus on the emerging psychology of pricing power. One of our directors from Houston noted that operating rates in petrochemicals have been increasing across the board, and in a few of his product lines these operating rates are approaching their capacity limits. He also mentioned that he was amazed at how fast the turnaround had occurred. He then went on to say that his company had raised its prices twice in the month since the prior board meeting and had encountered little resistance. In fact, he mentioned that his customers expressed surprise that the price increases weren't bigger. He added that their resistance to price increases was minimal because they are confident that they can pass those increases along to their customers.

I am relating this anecdote because I think it is symptomatic of the reduced slack we hear about from an increasing number of contacts. Many of these businesses keep close tabs on capacity utilization not only in their industries but in those of their suppliers as well. The sense that they are conveying is one of concern that the Federal Reserve's capacity utilization data may be overstating the degree of unused capacity. In particular, many of them have mentioned technologically obsolete plant and equipment that may not be brought back on stream. One of our directors from the high-tech area reported the results of a survey of chief information officers. They indicated a changing outlook for their technology spending in the coming year. Over the last two years, spending on basic infrastructure, such as maintaining their computer networks, was immune to the economic downturn and accounted for 80 to 90 percent of their budgets. As business has been expanding in recent months, this situation has begun to change significantly. In the second half of the year, they are looking for infrastructure spending to compose only about 60 percent of their budgets, with the remaining 40 percent going for new applications and emerging technologies. He feels this is quite bullish, as the criterion for investment decisions shifts from "What is the payback period?" to "What do we have to do to stay competitive?" This shift in attitude may reflect the realization that the recent return to improved pricing power will prove to be a short-lived phenomenon and that boosting productivity and effective capacity is the way to deal with the growing demand.

As I look at the national economy, I find myself in general alignment with much of the changes and the broad contours of the staff forecast for this year. When I sent in my projections last January, I thought there was a reasonable probability that we would end 2004 with lower inflation than we had at the beginning of the year. What a difference six months can make! My inflation projection for this year is somewhat higher than the Greenbook's and for next year it is considerably higher. The difference probably reflects my reliance on anecdotal information and stories about capacity constraints and the implications for the overall amount of slack resources in the economy.

One of our economists tried to simulate what the Federal Reserve's capacity utilization rate for manufacturing would look like if it incorporated the utilization numbers from the ISM survey. While they are admittedly different series and different concepts of capacity utilization, the simulation does suggest that the Fed's measure may be on the low side by several percentage points. Even if the true number lies somewhere in the middle, it would underscore the anecdotes we're hearing about how fast excess capacity is disappearing. As for the main risks to the economic outlook over the next year and a half, I feel the staff covered them pretty well in their choice of alternative simulation scenarios. From my point of view, the main risks involve some combination of the "less room to grow," "higher inflation expectations," and "surging demand" scenarios. The policy implications of this combination of risks—and the baseline forecast as well—are pretty clear.

As I indicated at our May meeting, I believe that the inflation risks are unambiguously on the upside and that we are behind the curve. Given recent inflation data, we would have to raise the funds rate by at least ½ point just to avoid increasing the amount of policy accommodation we are already providing. However, we are committed to a measured step of ¼ point today. But we do need to acknowledge the unbalanced upside risk to inflation and drop the term "measured" in order to reclaim some flexibility going forward.

CHAIRMAN GREENSPAN. President Stern.

MR. STERN. Thank you, Mr. Chairman. The expansion in the Ninth District is broadly based. It has accelerated recently, and we're hearing scattered reports of labor availability issues in select locations. With the improvement in employment, conversations and concerns about offshore outsourcing have diminished, as one would expect. Among the sectors that are strong are manufacturing, mining, energy, and agriculture. Housing construction remains a source of strength as well, although the inventory of unsold homes appears to be building in some major locations; and nonresidential construction is starting to improve, albeit off a low base. Consumer spending was strong earlier in the spring. Recent reports have been more mixed, and that has been attributed essentially to lousy weather. We will see whether or not that in fact turns out to be the case as we get additional information. As far as prices are concerned, reports are continuing to come in about both current and prospective price increases. Clearly, as I've said before, there's more going on there than I had anticipated earlier.

As far as the national economy is concerned, like almost everybody else I think the outlook for growth in the national economy is unquestionably favorable. My own forecast is for modestly higher real growth both this year and next than in the staff forecast. The differences aren't large. It seems to me that the fundamentals for growth are clearly positive. Maybe equally important or even more so, earlier uncertainties about employment gains have diminished, as have earlier uncertainties about the global recovery.

I do expect inflation to remain low, but not as low as I previously anticipated. And I do think there is an obvious danger in attributing the acceleration we've seen in inflation to temporary or one-off factors. In any event, given the confidence intervals that were presented in the chart show and in the Greenbook, it doesn't seem to me to be a stretch to expect core inflation to be 2 percent this year and even a bit higher next year.

CHAIRMAN GREENSPAN. President Poole.

MR. POOLE. Thank you, Mr. Chairman. I'm going to talk primarily about conversations I've had with those on my standard list of contacts. My Wal-Mart contact said that June sales had come in a bit weaker than anticipated, which I think was widely reported in the press. His estimate for sales growth in June is now in the 2 to 4 percent range, and the company had been expecting 4 to 6 percent. He attributes the weakness in June as due primarily to cool weather in many parts of the country, which has reduced sales of seasonal supplies like air conditioners and that kind of thing. Wal-Mart's estimate for sales growth going forward is 3 to 5 percent. My Wal-Mart contact reported to me results from a recent Gallup poll of consumer attitudes that I think Wal-Mart commissions Gallup to do on a regular basis. Number 1 on the list of concerns was rising gasoline prices, cited by 23 percent of the sample. Numbers 2, 3, and 4 were health care, the general economy, and fear of war. Number 5 was unemployment—fear of job loss—with the portion of respondents mentioning that down to only 13 percent of the sample compared with 26 percent a couple of months ago. That was quite a dramatic change in attitudes on that issue. He also said that general merchandise prices are still falling slightly but less rapidly than in the past; the buyers believe that most price increases for this year are already in place. The figures I mentioned earlier were for same-store sales. Wal-Mart continues with expansion plans to add about 8 percent per year in square footage, which is unchanged from earlier expectations. That means that their hiring plans reflect about 8 percent employment growth for the company. My contact notes that they have had no problem finding sales associates. About 80 percent of their labor force is full-time, whereas it's usually about 60 percent—the consequence of very low turnover in their labor force. So labor supply is plentiful.

As for the transportation industry, my contact at FedEx said that his firm has very strong earnings—"incredibly strong" was the term he used. FedEx is projecting a 25 percent increase in earnings for fiscal '05, which ends on May 31, 2005, over fiscal '04. He attributes about one-half of the increase in earnings to gains in volume, about one-quarter to pricing, and one-quarter to cost-management and productivity. FedEx business outbound from Asia to the rest of the world is up at an 18 percent rate in the fiscal quarter ending May 31—that's on a year-over-year basis—while outbound traffic from the United States is up 8 percent. That's quite a dramatic change because U.S. outbound shipments had been very, very low. U.S. ground business is up about 12 percent. Fed Ex has seen a substantial increase in its freight business, which is less than its truckload shipments. My contact said that demand is incredibly high and it's basically across the board—including retail and manufactured parts that are going into the production chain—and across the board geographically. FedEx is operating at capacity in its freight business and will be increasing its capital expenditures by 20 to 30 percent in fiscal year '05 over fiscal year '04. Only about 10 percent of that is replacement investment, and the rest is capacity expansion. I think the expansion will improve growth in the express business—the high priced business, which had been lagging because it was being replaced by ground shipments. FedEx is anticipating growth in the express component of its business. That grew 2 percent in the last quarter, which was the highest growth they've seen in five years. The company is expecting to add capacity in the United States to handle the rapid growth in international business. My contact noted that traffic exiting China was up 50 percent in the last year, and he sees very strong momentum to growth there. He has heard reports of inconsistent rail service. Apparently one of the reasons some shipments are being diverted to air delivery is because of problems in the rail network.

My UPS contact said that the economy is changing—"shifting into higher gear" is the way he put it. Outbound Asia volume is exceeding expectations. Business in Europe is not as strong but is also exceeding expectations, as is U.S. traffic, both inbound and outbound. He described volume as well above expectations everywhere. He said that the express business, both for households and businesses, is strong. He indicated that the growth in business demand for express may reflect the very lean inventory situation. He reported that international capacity is very tight. UPS is replacing smaller aircraft with larger ones. He said that they are in negotiations with the pilots' union. Apparently the contract expired in December, and they're in mediation. The pilots are asking for a 40 percent first-year pay increase, and UPS is offering 6 percent. So they're pretty far apart. My UPS contact also indicated that they are anticipating some problems in obtaining part-time workers in the very busy fourth-quarter period. And they are expecting a very large turnover in their labor force in the next five years due to retirements of pilots and mechanics. To give you an idea about their expectations for volume in the high-demand fourth-quarter period, they are expecting to lease twenty-nine aircraft just for that period compared with thirteen last year.

My contact in the trucking industry, from J.B. Hunt, said that he viewed the economy as not hot but warm. Business has been up and down. He didn't quite understand some of the fluctuations, but a noticeable improvement really took hold in the late fall. He said that Hunt trucking volume in the intermodal business—that's the piggyback rail business—was up 15 to

17 percent from April to May. He indicated that some of that might have been related to problems with Union Pacific. The railroad reported to him that they had misjudged the strength of the economy and were short in manpower and equipment, and they believe it will take the rest of this year for them to catch up. He also reported that CSX has had service problems. Pricing is pretty strong on the truck side. Prices are up about 7 percent year over year, and maybe 2 percentage points of that is fuel surcharges. Also, the supply of drivers is extremely tight.

A Wall Street contact said that he believes the general view on Wall Street is that the Fed has gotten behind the curve and will be looking very carefully at the inflation reports going forward.

As for my view of the national economy, I think there is a very solid upward momentum to real activity. It appears to me that transportation demand has taken a lot of the companies by surprise. That's my interpretation. On inflation, my best guess is a modest increase of a few tenths rather than the modest decrease projected by the staff. In terms of point estimates, that probably represents half a standard deviation. So the projections are not very far apart—probably half a standard error apart—in terms of the accuracy of the forecast. But I also believe that the inflation risks are quite substantially skewed to the upside over the next few quarters. And I would note that what's going to happen in the next few quarters is largely independent of any current policy decisions, both at this meeting and in August. I think we're more likely to have upside surprises on inflation, and that's a risk to us. Thank you.

CHAIRMAN GREENSPAN. President Guynn.

MR. GUYNN. Thank you, Mr. Chairman. The economic expansion in our Southeast region remains solid. Recent developments in retail sales, autos, housing, tourism, travel, banking, and manufacturing have all been positive, and I will not go through a discussion of each individual sector. The main weaknesses remain in nonresidential construction and chemicals.

Most relevant to our policy discussion this time has been the emergence of imbalances in certain sectors that are generating significant price increases. For example, shortages of steel and cement, as well as rising prices in other building materials, are clearly affecting big projects in Florida where bids are either being revised up or in some cases builders are walking away from projects. The price of concrete is up 10 percent, with additional increases expected to come. At a breakfast meeting last week, the developer of a large high-rise downtown Atlanta residential project told me that the job he had priced last fall now looks to be coming in at a cost almost 10 percent higher because of rising prices of various construction materials. We heard reports of wholesalers, contractors, and machine tool companies stocking up on concrete, steel, plywood, and sheetrock, if the materials are available, in order to avoid future price increases and potential shortages. One Florida contractor reported holding a three-month inventory of steel to limit the effects of higher future costs. A shortage of truck drivers because of both higher demand for transportation and new driver regulations is not only increasing shipping costs but also reportedly causing some firms to begin to carry larger inventories than previously.

I'm getting more and more reports of the ability to pass through higher input prices to final consumers. Let me cite just a few examples. I've heard numerous reports of companies imposing fuel surcharges without customer complaints. Those reports have come from UPS, a waste-management company, a concrete company in South Florida, a nursery, an agricultural food and supply company, a trailer manufacturer in Tennessee, an auto seat manufacturer in Alabama, a lumber company in Florida, and numerous small trucking and delivery companies. A box manufacturer indicated that he had passed along a severe 10 percent increase in paper prices with little resistance, and he's set to raise prices again in September. In Florida, small grocery stores, hotels, and restaurants report raising prices without resistance in light of strong demand and higher food and energy input prices. Tennessee hotels and resorts are also raising prices for the first time in years because of strong demand. Fast food companies are reporting chicken supply problems because of the trucking shortage I mentioned previously. Supply problems coupled with increased demand in retail poultry markets have reportedly led some grocery stores to tell their poultry suppliers to "name their price." Finally, many personal service firms—barbers, spas, et cetera—in Florida are raising prices with little resistance. At the same time, it is important to note that we also have many other reports of firms absorbing input price increases because of competition, weak demand, or the hope that many of the increases will prove to be transitory. Nevertheless, over the last several months, there have been far more stories of price increases and higher costs that are being passed along than we have heard in many years.

At the national level, I think we have to be pleased and reassured with the new real side data, which have been quite positive overall. And as one of the earlier skeptics about the likelihood of robust near-term job growth, I find the two strong employment reports since our last meeting to be really good news. The Greenbook as well as other forecasters are suggesting that GDP growth will be in excess of 4 percent in 2004, with inflation stabilizing in 2005 to a rate below that of 2004. The distinguishing factor between the Greenbook and many other forecasts is that few of the latter have the Greenbook's particular combination of reasonably strong real GDP growth, benign inflation, and low unemployment together with a low path for the federal funds rate. If the Greenbook forecasts are seen by the Committee as adequately representing our beliefs about the future, then are we in fact forecasting that the economy will soon return to the path it was on in the late 1990s? Perhaps. But I see the underlying fundamentals as being different this time, and different enough to suggest that the longer-term inflation risk may be higher than some believe.

I suggested at our last meeting that our focus should be on the best path for future policy and not just on the first rate increase. I've been anxious, and still am, to get started with an early process of removing the extraordinary policy accommodation that is no longer needed. Recent inflation and inflation expectations data—and the anecdotal reports we've shared this morning—seem to underscore the need to get started with our policy adjustment, even allowing for the fact that some portion of the price increases we're seeing will turn out to be transitory. My concern about the future path of policy has been reinforced by our discussions yesterday afternoon about the underlying imbalances of the so-called twin deficits that we are now experiencing. This heightens my belief that we may well find that we will need to be on a steeper rate path than we have been seeing in many of our simulations. Specifically, what are some of the more troublesome underlying fundamentals I'm talking about? Consumer debt and household financial obligations, while a bit off their peak levels, are still much greater than in the 1990s. And the government fiscal situation now shows deficits that are larger and likely to continue to grow, especially since I don't see either tax or spending policies moving to correct them in the near future. Finally, as we discussed yesterday, we have a growing and unsustainable current account deficit.

These factors point to higher levels of consumption and aggregate demand and suggest that a neutral funds rate may be somewhat higher than some project, especially at the present rates of productivity. If I am correct, then we run the risk of pursuing a more accommodative monetary policy than we intend, with the likely outcome being a higher rate of inflation than expected. There's a temptation to downplay the risk I'm raising. After all, the U.S. economy has functioned quite well with low inflation rates and with a negative real short-term rate, and some see continued resource slack as taking pressure off prices. But I suggest, given the recent combination of expansive fiscal and monetary policies, that our low inflation rate is most likely the consequence of heavy support for the dollar provided from abroad and a willingness on the part of foreigners to invest in this country, compensating for the low U.S. saving rate.

History, as well as theory, suggests that large current account deficits should be self-correcting through downward adjustments in our exchange rates, upward adjustments to real interest rates, a reduction in domestic consumption relative to production, and an increase in private and public savings. All of this was discussed yesterday. What I think makes the orderly transition of this imbalance especially difficult and problematic is the posture of current U.S. fiscal policy, which is not oriented toward reeling in the deficit, combined with the trade and exchange rate policies of other countries—China and Japan to name just two. These countries are pursuing policies they perceive to be in their own short-term interest. That is, they are either running persistent current account surpluses or maintaining an overvalued currency through currency intervention aimed at fixing their exchange rates relative to the dollar. While this may help foster domestic growth in those countries, it also has the effect of enabling risky fiscal behavior on the part of the United States, while postponing the day of reckoning for all.

Obviously, the Federal Reserve can't deal with trade or foreign exchange policies, nor can we engineer a return to a more sustainable world economy by ourselves. In this respect, the conduct of monetary policy becomes more difficult. What I believe we can and should do is to move the path of monetary policy back toward a more neutral position. And the sooner we begin and actually get there, the lower the adjustment cost will be for the United States and for the rest of the world. If we wait too long before acting, then the more aggressive path we would have to pursue to catch up carries increased risk, given the leverage in the consumer sector. Moreover, by falling behind the curve we risk the likelihood of additional pressure on the dollar, contributing even more to international imbalances. Finally, like President Yellen, I am more comfortable with the funds rate path embedded in financial markets than I am with the more modest adjustments reflected in the Greenbook baseline. And like several others, I hope we can find language for our statement that unties our hands to do what is suggested by developments as they unfold. Thank you, Mr. Chairman.

CHAIRMAN GREENSPAN. President Lacker.

MR. LACKER. In the Fifth District, the economic recovery appears to have strengthened in May and early June. Manufacturing activity continued to expand, although the pace has lessened in recent weeks. Shipments and new orders are up, and there are spot reports of increased export demands in Europe and China, particularly for some niche technology products. Despite the slower pace of output growth, employment in manufacturing has increased on net in Maryland, Virginia, and South Carolina but continues to fall in North Carolina, with its heavy concentration of textile, apparel, and furniture plants. For the District as a whole, I get the sense that manufacturing employment is expanding even more slowly than in the nation.

Outside of manufacturing, however, hiring is definitely picking up. In fact, several of our contacts are reporting signs of emerging tightness in labor markets. Consistent with these reports, our diffusion index for District manufacturing wages picked up sharply this month. Our survey reports also indicate that the pace of materials price increases eased somewhat in May and June, although firms continue to complain about higher prices for selected commodities such as steel and concrete.

Retailers are reporting moderately higher revenues, but they say that sales growth in early June has slipped a bit from May’s pace. Elsewhere across the service sector, however, revenue growth seems to have accelerated in recent weeks. Commercial Realtors have reported a moderate uptick in retail leasing activity recently, but office and industrial leasing remains sluggish overall.

Residential construction is still quite strong in our District, and now we are getting consistent reports of strong commercial loan demand.

Consistent with the evidence from the Fifth District, the recovery of the national economy appears to be deepening and broadening, particularly in business spending and hiring. I think we have every reason to expect to maintain this traction and to see a well-balanced expansion take hold in the quarters ahead. The Greenbook projects real GDP to grow at around 5 percent for the remainder of '04 and to slow to the rate of potential growth thereafter, closing the estimated output gap by early '06. This projection seems quite reasonable to me.

Headline inflation has been running higher than we would like over the last couple of months, but for several reasons it seems plausible that this recent increase will turn out to be transitory. The output gap is still sizable. The markup of prices over unit labor costs, as we discussed earlier, is well above its long-run average, and given that, it seems most likely to decline. Inflation expectations seem to be reasonably well anchored. Moreover, year-over-year increases in measured consumer inflation are still moderate. For example, core PCE inflation on a year-over-year basis remains inside the 1 percent to 2 percent range consistent with price stability. On the other hand, short-run inflation expectations have moved up in recent months together with actual inflation, and financial market measures of inflation compensation at longer horizons have drifted higher as well. Moreover, as the Greenbook notes, market-based inflation expectations appear to be sensitive to declarations of the FOMC's resolve to hold the line on inflation. The fact that the path of the fed funds rate expected by market participants exceeds the baseline path assumed in the Greenbook can be interpreted, as I read it, as evidence that financial markets continue to be nervous about upside inflationary risk. The market's reaction to Monday's inflation figures bolsters that notion, I think.

All in all, though, I think we positioned ourselves reasonably well coming into this meeting. The labor market recovery is on track, inflation seems likely to moderate in the near term, and markets expect us to move interest rates higher at a fairly healthy clip. I think the main challenge for monetary policy in coming months will be gauging the speed with which we need to increase interest rates to hold the line on inflation.

CHAIRMAN GREENSPAN. Vice Chair.

VICE CHAIRMAN GEITHNER. Thank you, Mr. Chairman. Developments since our last meeting support a reasonable degree of confidence in the strength of the expansion and somewhat more concern about the outlook for inflation. The economy of the Second District seems to have strengthened further. Employment is growing very rapidly, and retail sales have been strong even in the face of the softer national numbers. Our survey of manufacturers shows persistently strong readings, with even more optimism six months out. Credit demand seems to be growing. Core inflation in the region has fallen off a bit but remains well above the national average. The anecdotal story in the District suggests a continued ability to pass on cost increases and growing pressure to raise compensation to attract and retain workers with the requisite skills.

At the national level, we think the fundamentals support continued strength in demand growth at a comfortable, if somewhat softer, rate. High levels of reported consumer confidence, strong income growth, and more-rapid gains in employment should support reasonably healthy growth in consumption. Investment seems likely to have ample reason and room to continue to grow at a rapid rate, with corporate balance sheets strong, profit margins strong, inventories low, and orders running high. We think foreign demand looks pretty positive, too, but not strong enough to avoid a significant negative contribution from net exports this year and next.

On the assumption that monetary policy roughly tracks the present path of market expectations, we project GDP growth of about 4½ percent in real terms this year and somewhat under 4 percent in '05. We see the risks to this path as balanced, with the principal downside risks coming from the strategic realm rather than the economic—strategic in terms of a terrorist event or a major oil supply shock. On the economic side, the principal risks seem likely to come from a more substantial slowdown in household spending, a sharp reduction in near-term or expected productivity growth, or a sharp decline in the willingness of nonresidents to acquire U.S. financial assets.

We are somewhat more concerned about the inflation outlook. We have now seen significant acceleration in underlying inflation to a level somewhat above our range of comfort. We face some risk that a modest increase in inflation expectations—even after the recent moderation of those expectations—will feed through to higher compensation growth. The extent of the swing in unit labor costs, the various indications of supplier delays despite high reported capacity numbers, and the persistent reports of pricing power all suggest a pattern of inflation dynamics that is hard to reconcile with the degree of slack we thought we had perceived in the economy.

So we have raised our inflation forecast for core PCE a bit to 1¾ percent for '04, with a somewhat lower rate in '05. It stays below 2 percent in part because we still assume a reasonably substantial monetary policy response that is effective in containing expectations, in part because we believe oil and commodity prices will start to bring down the headline numbers, and in part because we still think productivity growth is going to be reasonably high. All those factors, combined with high profit margins, strong competitive pressures, and an expected gradual pace in the absorption of remaining slack in the labor market, work to contain inflation going forward. But we think the risks to that forecast may be somewhat to the upside. Or if we want to say the risks are balanced, we think they are balanced around a higher path for underlying inflation and a higher bulge in the near term.

The uncertainty in the outlook reinforces the case for underscoring our commitment to do what is necessary to contain the risks to our objective of price stability. The costs of being perceived as too complacent about underlying inflation probably are now greater to us than the alternative. Now that we've reached the point where we need to begin to move to a more neutral fed funds rate, we take some comfort from the fact that financial markets seem reasonably well prepared for the beginning of this transition. The things we can measure as well as the anecdotal reports from a broad range of financial intermediaries suggest, as the Board staff now concludes, that the anticipated change in the fed funds rate will not cause a lot of collateral damage or be accompanied by a lot of volatility amplifying position adjustments and hedging. But there's a lot we cannot measure and cannot know about how the world will react to the initiation of what will have to be a substantial increase in the fed funds rate over time, after a very long period of low rates, and we're likely to encounter some surprises even if they are not systemic in their magnitude.

We are reasonably comfortable with the extent of the tightening that is now priced in, and we are pleased with how responsive those expectations have been both to the stronger data and the higher inflation numbers. However, the path of expectations still suggests a reasonably high degree of confidence that we will move in only 25 basis point increments. I don't think we can be fully confident that we can afford that gentle a path. Our signal should aim to qualify further the qualifications we have gradually introduced over the past few meetings and to emphasize that we will act as necessary to keep expected inflation low. We don't need to try to induce a significantly steeper path for the fed funds rate right now, but it probably would be helpful if the market built in a somewhat greater expectation that we could move in larger increments this year if circumstances warranted. Thank you.

CHAIRMAN GREENSPAN. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. My forecast, like most of yours, represents quite a nice outcome for the economy. I have growth somewhat above the growth of potential, so the output gap closes fairly gradually, with the economy reaching full utilization in the latter part of 2005 and core PCE inflation remaining below 2 percent. All this is accomplished in my forecast with an assumed measured pace of tightening. Like President Yellen, I would include something on the order of what is built into the market as measured.

I am expecting both slower growth and higher inflation this year than in my January projection. A number of developments have contributed to this less favorable configuration, but most prominent among them have been higher prices for energy and other imported goods and commodities. These have had the classic effects of an adverse price shock, damping growth and raising prices. These price increases seem to account for a good portion of the pickup in core inflation. And the effect on spendable income of the rising cost of oil and other imports with low short-run demand elasticities probably has kept demand for domestically produced goods and services from growing as rapidly as it otherwise would. In part, my relatively sanguine outlook from here reflects my expectations that these shocks won't be repeated and could even be reversed to a degree. Oil and commodity prices have come off their highs, as demand from China has cooled and consumers and producers have begun to adjust production and consumption to the higher prices. As the price shock effects erode, policy stimulus should show through more to the growth of demand, and inflation should abate. Next year, the timely erosion of fiscal and financial stimulus help to slow growth, just as the economy approaches full employment. And inflation should remain contained, as continuing though ebbing margins of slack along with elevated profit margins keep markets competitive.

Something is sure to go wrong. The interesting questions revolve around how fast the output gap is likely to close—Is there a danger of overshooting without considerable near-term policy restraint?—and around inflation. Even if slack disappears gradually, is stable core inflation a reasonable expectation?

On the speed of closure of the output gap, recent information seems to be sending contradictory signs. Anecdotes—ISM and other business surveys and what we've heard around the table today—portray an economy with a considerable head of steam. This impression is reinforced by the large increases in establishment employment in recent months. Strong IP and a substantial increase in capacity utilization add to the impression that slack is disappearing fairly quickly, but an array of other data have suggested a slower approach to high resource utilization.

In the household survey, the unemployment rate is unchanged since January, and labor force participation hasn't risen. Moreover, the workweek, which one might anticipate would strengthen concurrently with or even before hiring, has barely budged off a very low level. GDP itself is estimated to have grown at a 4 percent rate over the first half of the year—a solid pace, as we say in our announcements, but hardly a barnburner when structural productivity is probably still advancing rapidly. This estimate of 4 percent includes a leveling-out of consumption in recent months, along with a couple of releases showing weak orders and shipments that highlight the solid rather than the ebullient character of the expansion.

Going forward, the risks around an expectation of a fairly gradual decline in slack appear to me to be roughly balanced. In addition to the possibilities of geopolitical oil market developments damping demand, we can't yet gauge how spending will respond to the recent rise in intermediateand long-term rates. To be sure, as I already noted, several influences were holding back the pace of expansion this year, but 4 percent growth—only moderately above the rate of growth of the economy's potential—doesn't seem all that strong, given the unusual degree of fiscal and financial stimulus in the latter part of 2003 and early 2004. Financial conditions remain supportive of above-trend growth, but they have tightened in recent months as markets have come to anticipate our actions. Household spending would seem to be the most vulnerable. The high level of household spending encouraged by low interest rates over recent years must have borrowed to some extent from future expenditures.

On the upside, there is some risk that spreading optimism, especially among businesses, could overwhelm the gradual erosion of fiscal and monetary accommodation. With an assumed measured pace of monetary tightening, neither policy turns restrictive next year. It could be that more of the strength in investment this year is attributable to underlying demand and less to the anticipation of the expiration of partial expensing at the end of the year. In this case, we could see more strength in investment persist through early next year than would be consistent with an appreciable moderation in growth.

In contrast to my views on the erosion of the output gap, I suspect, along with many of you, that the risks around my forecast that core inflation will remain below 2 percent are not quite balanced. To be sure, the weight of the experience of recent years suggests to me that 5.5 or 5.6 percent is above the NAIRU and that 76.4 percent is below the sustainable operating rate of manufacturers. I do not believe that the rate of obsolescence of human or physical capital has accelerated so much that this experience is no longer pertinent.

Moreover, as I noted, much of the pickup in core inflation this year seems to be explainable by one-time price-level adjustments; and long-term inflation expectations really haven't moved much, on balance, even as short-term expectations rose substantially. Still, there is much we do not understand about the inflation process, as David was careful to point out this morning. And the pickup in core inflation has been a surprise to me. The output gap is an unobservable construct—inferred from the behavior of other variables like prices and compensation—with considerable imprecision. And the extent of the slack in the staff forecast isn't that large. Hence we need to watch the inflation data carefully, and until I see some evidence that confirms my expectation that the recent rate of increase of core CPI and PCE inflation will stabilize and even moderate at least a little, the risk would seem to be on the side of higher inflation than my forecast.

My preference for the next part of this meeting would be not only to remove some of the accommodation of policy but also to find the combination of words that reflects both the central tendency of expectations of a measured pace of policy tightening and the recognition that, in these circumstances, the Committee must be alert to the possibility that it could need to take more-decisive action. If the Committee agrees that a "measured pace" of policy tightening is the most likely outcome, I think inclusion of these words in our announcement does convey useful information. With that language in place over the last few months, reactions in financial markets to incoming data have been substantial and sensible. I do not think that markets are interpreting "measured pace" as an unconditional commitment. Retention of this language along with a statement underlining our commitment to doing what is necessary to maintain price stability would not materially, in my view, constrain our actions in the future. If we do omit reference to a measured pace, we will need to rethink the balance of risks sentence. If we keep its present configuration or the suggested configuration in which the risks are balanced for both output and inflation, standing alone, that conveys essentially nothing about the Committee's concerns and its intentions. Thank you, Mr. Chairman.

CHAIRMAN GREENSPAN. Governor Gramlich.

MR. GRAMLICH. Thank you, Mr. Chairman. I read from the polls and the market surveys that it is a "slam dunk" or, to use another analogy that has been in the news lately, a "gimme putt" that the Fed will start raising rates at this meeting. That issue seems hardly worth discussing. What is on everybody's mind is how fast and how far rates will rise and whether the Fed is behind the curve.

For all the market chatter that the Fed is behind the curve, I frankly find it surprisingly hard to see much supporting macro evidence. Starting with the models, the Greenbook has the funds rate increasing by 2 percentage points over the next six quarters, a move of roughly 25 basis points in two-thirds of our meetings over the period. This pace is distinctly below what almost every market commentator is talking about and below the Fed funds futures curve, and it still leaves the funds rate well below equilibrium at the end of 2005. I would have thought that such an approach would be too little, too late, and would let inflation start increasing. In fact, at least in the models, it conforms remarkably well with what the Bluebook calls a "perfect foresight" path, under which the long-run inflation and unemployment outlooks conform quite closely to my normative targets. By this standard, at any rate, the Fed doesn't seem to be behind the curve. But those are just models.

Broadly speaking, there are two relationships that could go awry in these simulations. The first involves what is being called the pass-through issue. Whatever the overall rate of utilization, because exogenous prices or expectations have increased, inflation could rise—at least for a time. What exogenous prices? One is commodity prices, but these have been shown to have a small effect on overall prices and have already started turning down. Another is oil prices. While there is still significant uncertainty about the Middle East, the staff has made a calculation that even removing the entire Iraqi oil output from the market would raise overall core PCE inflation only a few tenths of a percent. Moreover, the staff's demand–supply analysis makes it as likely that oil prices and futures prices will fall as rise. Non-OPEC oil supply has turned out to be increasing faster than demand, and indeed, oil prices have backed off recently. A third is the dollar, which of course we discussed extensively yesterday. There's not much more to be said about that except that in a lot of scenarios that adjustment doesn't come with a whole lot of inflationary potential for the economy. As for inflationary expectations, the short-term measures have indeed risen, but slightly. However, as has been noted by several people, price markups are also very high, and they could put downward pressure on overall prices. At a time with as much uncertainty as now, it is always possible that inflation will rise through this pass-through channel, but a careful look at the evidence actually leads me to have substantial doubts about that.

The other possibility for a rise in inflation involves the fact that output gaps may not be as large as the staff thinks. Of course, they may not be, but to me there is plenty of evidence that the present 5.6 percent rate of employment does not represent full capacity economywide. First, of course, I can remember a few years ago when the unemployment rate went to 4 percent with no real hint of acceleration in inflation. Second, employment as measured by the employer survey is still well below its peak, and as Don just noted, labor force participation is low, and the workweek is still very low. Wages have increased a bit but have not really accelerated. And unit labor costs are still low, though picking up a bit. The whole picture does not look to me like one of overfull macroeconomic capacity, and I still find myself reasonably comfortable with a NAIRU in the neighborhood of 5 percent.

Considering the pass-through channel and the output channel together, somewhat to my surprise the inflation risks really do seem somewhat balanced to me. This is, of course, exactly what the FOMC has been saying for a time now. As Kissinger once said, "The statement has the added advantage that it actually seems to be true." [Laughter] As a best guess, I'm still comfortable with the main strategy of a gradual increase in rates starting now and at every meeting or so. But we do have to worry about more than best guesses. As I said last time, I'm still nervous on the upside partly because of the unhappy and haunting experience of the '70s. The logic may have looked as though inflation would not get out of control then either, but it did. So I still think we have to be ready to activate Plan B—a more rapid rise in rates, which we can put into effect if future data reports and other indications start suggesting that inflation really does seem to be truly ramping up. Such a Plan B would alert the market now to the fact that, if we do seem to be falling behind the inflation curve, somehow or other the gradual pace will give way, and we'll raise rates more rapidly. Thank you.

CHAIRMAN GREENSPAN. Governor Ferguson.

MR. FERGUSON. Thank you, Mr. Chairman. During the intermeeting period I have been struck mainly by the surprises that have come in. Unfortunately, this time around the surprises have been somewhat contradictory. We have already had some discussion of what the downside surprises have been, so let me try to be fairly brief. The first, obviously, was that first-quarter real GDP growth was revised down about ½ percentage point. In addition, the new orders and shipments data in May, while strong, were weaker than expected, and the staff has already indicated how that affected their thinking. More recently, consumer spending, while also strong, was noticeably weaker than expected. And finally, if one does a quick review of the Greenbooks over this year, it is clear that, for almost every forecast round, the staff has been revising down its outlook for both 2004 and 2005.

So, why this litany of downside surprises for the real economy? It is not because I doubt that the economy is on a self-sustaining growth path. I do not. Other elements of the economy—in particular, strong job growth and consumer confidence—seem poised to provide the underpinnings for momentum in the economy. And perhaps this short list of downside surprises only reminds us that economic growth does not follow a smooth monthly or quarterly pattern. However, I must admit that this pattern of downside surprises leaves me with some concern that the path of the economy may be shallower than originally thought and perhaps even somewhat below the growth rate of potential. But, as I think Don and Ned both indicated, the fact that the unemployment rate, the labor force participation rate, and the capacity utilization rate have all remained stubbornly low or high—depending on how you think about it—suggests that, indeed, we are not closing the gap as rapidly as some had feared. This recent softness and this shallower path out of 2004 and into 2005 are somewhat worrisome to me because they seem to be emerging just at a point when fiscal policy is falling back from noticeably stimulative to slightly contractionary. So in short, at least in comparison to the original Greenbook projection, I put much more weight on the downside possibilities, and therefore I'm more comfortable with the new forecast the staff presented this morning.

Now obviously, on the other side of this surprise index, there have been surprises on the upside with respect to inflation. I find these surprises not terribly troublesome in that I think we still are most likely to end up being in what I would describe as the zone of price stability. But I must admit that we're probably at the upper end of that zone at this stage. What is probably more troubling about these surprises on inflation is that they are relatively hard to explain. There are some who argue that the real surprises on inflation were so low last year that we are now just dealing with the natural catch-up. Many argue that the pass-through for oil, commodity prices, and import prices in general is higher than historical norms, though we saw yesterday that some would argue that we are simply returning to the norm. Finally, some would use the upside surprises in inflation to argue that the most commonly held view of inflation dynamics—namely, that inflation pressures remain subdued as long as resources are slack—is wrong. Others looking at the same set of data would argue that we really don't have a very good understanding of slack resources or how large the slack is in the economy. In any event, while I think that inflation is not yet a pressing danger, we clearly must consider for the first time in a long time an upside risk as well as a downside risk around our core or baseline forecast. These surprises also remind us how unfortunately little we know about inflation dynamics, as I think the staff indicated in their presentation. The models that we have on price level changes I think have an r^2 of somewhere around 0.5 or 0.6, suggesting that humility in this regard, as with other things, is very important.

So very briefly, recognizing the time, what are the implications of these surprises and uncertainties for monetary policy? As Ned has already indicated, we're obviously about to embark on a phase of tightening. That is an action I will fully support. Policy rates are clearly too low for an economy that is growing as ours obviously is. And as the economy normalizes, the policy rate should also normalize. However, given the uncertainties that I at least feel about the outlook for both price stability and output stability, I would encourage us to follow a very pragmatic path. I believe we should make as few changes as possible in the general message we have been sending, while maintaining our credibility and our commitment to our mission. We should also continue to hold open the option that we can adjust our plans as incoming data warrant on either side. Forty years ago, Barry Goldwater made a comment that I'd like to use now: "Gradualism in the face of uncertainty is no vice. Undue haste in defense of credibility is no virtue." [Laughter]

CHAIRMAN GREENSPAN. Did he say that? [Laughter]

MR. FERGUSON. Forty years ago, I was thirteen! [Laughter]

CHAIRMAN GREENSPAN. Governor Bies.

MS. BIES. Thank you, Mr. Chairman. Economic growth is increasingly becoming broad-based and, I believe, sustainable. Capital expenditures, whose curtailment was the cause of the last recession, are strong. Employment growth in the last several months has really come back to life. And manufacturing is showing real strength for the first time, with rising capacity utilization and employment growth for four consecutive months. Retail sales continue to grow solidly. And inventories, while increasing, continue to be well managed by companies as inventory–sales ratios drop to new lows every month, which should, in turn, support expansion going forward.

Corporate profits are up over 31 percent in the last year, and forecasts are for continued strong growth in 2004. Debt–equity ratios for nonfinancial corporations continue to improve from their peaks set in the third quarter of 2002 and are now down to levels last seen in the 1970s. Our recent flow of funds data for 2004:Q1 show a fourth straight quarter of a surplus funding gap for businesses. Thus, companies have the financial strength to fund continued expansion internally and to access capital markets and financial institutions for funds on favorable terms.

Earlier, the Chairman made a comment about the profit share of GDP versus GNP, and the staff—Steve in particular—won't be amazed that that is one of the numbers I tend to look at over time. The profit share of the GDP number actually shows a more extreme peak in profit share. It hit a seventy-five-year high of 8½ percent of GDP in the first quarter, and that's about 2½ points above the long-run average. Profit share does tend to revert to the mean over time. But what does that imply right now? We know that analysts looking at individual companies forecast that earnings per share for 2005 will show a marked slowdown but still growth. And they are assuming that companies will have to absorb more costs that are not passed through to customers into 2005.

Historically, most profit margin reduction comes through relatively faster growth of labor costs than prices, and that is reflected in part in the recent revisions we've seen in employee compensation costs in the fourth quarter of '03 and the first quarter of this year. Productivity growth slows as the expansion progresses, and competition for workers intensifies as strong employment growth continues. Those factors and increased compensation to retain the best employees in more-competitive labor markets will all likely contribute to a larger share of income going to labor. So I am less optimistic on labor costs than the staff forecast.

The various inflation measures released since the last FOMC meeting showed surprising strength. One of the few indicators to improve, the core crude component of the producers' price index, has now fallen for two months, but that's after nine months of exceptional increases. The core CPI eased a bit in May after three months of acceleration. While one can point to unusual jumps in prices for items such as used cars, apparel, or lodging, the list of these exceptions is getting broad enough to ask whether pricing power has returned in a much wider sense. So I think this is a time when we need to be especially attentive to the incoming inflation data and make sure we act promptly to limit further acceleration.

CHAIRMAN GREENSPAN. President Bernanke.

MR. BERNANKE. Thank you, Mr. Chairman. I'd like to share with you Meyer's Rules of Forecasting, as propounded by former FOMC member and current sensationalist author, Larry Meyer. [Laughter] Rule 1, stick with your forecast as long as possible. Rule 2, when your forecast becomes untenable, make a new forecast. Rule 3, know when to switch from rule 1 to rule 2. [Laughter]

There's nothing much needed in terms of changes to our forecast for the real side of the economy, which has thus far evolved much as this Committee predicted in both June 2003 and January 2004. The economy has come a long way in the past year, and as we contemplate new challenges ahead, we should pause to take some satisfaction in the Federal Reserve's contribution to the turnaround. Our policy actions, reinforced by innovations in our communication strategy, helped provide crucial support to the economy during a dangerous period.

As an aside, there has recently been a bit of revisionism to the effect that our concerns with deflation a year ago were overstated on the grounds that the official statistics may have in some way exaggerated the true extent of disinflation. Understanding last year's inflation behavior is important but in my view not really relevant to assessing the extent of the policy challenge the FOMC faced in early 2003. The most salient fact about the first half of 2003 was that the economy continued to sputter even as our policy rate declined to 1 percent. We thus faced the real possibility, whether remote or not, that the funds rate would reach or come close to the zero lower bound, a development that would have greatly complicated our subsequent policymaking. Avoiding those dangerous waters on the way to robust economic growth was an important achievement indeed.

Unlike the growth forecast, the inflation forecast is one to which Meyer's rules of forecasting may now apply. I certainly did not anticipate the pickup in inflation we have seen in the past few months, and I congratulate my colleagues who were more astute than I in appreciating the early change in the pricing environment. Given what we have seen in the inflation data, the question now is whether the time has come for me to switch from Meyer's rule 1 to rule 2. I wish rule 3 would give more practical guidance on this question! [Laughter] The key issue, of course, is whether the recent increase in inflation portends further increases or whether it was instead at least partly temporary. Though suitably chastened by my recent forecast misses, I guess I can't help myself. I'm still inclined to the view that inflation, both headline and core, is likely to moderate in the second half of the year. In particular, the stabilization of energy prices—oil prices are now more than 15 percent off their peak—non-energy commodity prices, and the dollar bode especially well for the inflation outlook, though it may be some months before we see the full effect.

In this respect, I find the decomposition of the recent increase in inflation provided to me by staff member Charles Fleischman and similar to the presentation this morning quite interesting. Between the second half of 2003 and the first half of 2004, core PCE inflation increased by a full percentage point at an annual rate. Of this increase, 0.4 percentage point was accounted for by a rapid acceleration in nonmarket prices—i.e., made-up prices, notably the infamous deflator for financial services. With nonmarket prices excluded, more than 100 percent of the acceleration in core PCE inflation between 2003:H2 and 2004:H1 can be accounted for by higher inflation or less deflation in goods prices, particularly durable goods prices. In contrast, the inflation in services excluding energy, whether inclusive of housing services or not, has actually decelerated in the past six months. As it seems likely that goods prices would be relatively more affected by changes in the value of the dollar and in the prices of energy and raw materials, this pattern seems consistent with the inference that the recent increase in inflation is due more to these factors than to a generalized increase in aggregate demand or higher labor costs, for example.

Moderation of inflation does require that unit labor costs remain under control. Labor supply still seems quite elastic. The fact that the recent addition of more than a million jobs has barely affected the unemployment rate suggests that many people stand ready to enter the labor force as conditions improve. Wage trends are more difficult to assess. Compensation per hour in the nonfarm business sector increased at a 4.7 percent annual rate in the first quarter, more than we expected. However, because total compensation data include such items as retrospective pension payments and the value of exercised stock options, they may overstate the true marginal cost of labor. At the other extreme, average hourly earnings of production workers, which exclude such items but also exclude other benefits costs such as health insurance, rose only 1.9 percent at an annual rate in the first quarter. The true growth in marginal cost is no doubt bracketed by these two figures.

All this said, it has been brought home to me by recent experience that inflation forecasts as well as output forecasts are, of course, always hazardous and seem particularly so today. Knowing when to switch from Meyer's rule 1 to rule 2 is not so easy. Given these uncertainties, it seems to me that the best tactic for us at this juncture is to temporize, embarking on a program of gradual rate increases but remaining alert and ready to adjust in response to incoming information.

With respect to communication, I would simply say that I am fairly comfortable with the configuration of expectations about future tightening that is now built into the market. So if we do change communication, I hope we will be careful not to destabilize those expectations unduly. Thank you.

CHAIRMAN GREENSPAN. Governor Olson.

MR. OLSON. Thank you, Mr. Chairman. In preparation for today, I surveyed three banks—a New York money center bank, a Southeastern regional bank, and a national bank with a Midwest base and a twenty-four-state footprint. I came away with two strong reactions from those interviews. The first had to do with asset quality. Two of my three contacts used phrases like "the best ever" and "getting better." In their assessment, asset quality exceeded that suggested in Steve's chart show on both the consumer and the business sides, and in my judgment it is at a level that also is better than what could be achieved simply by the application of good credit standards by banks. When I pursued this question, the bankers suggested that it is an indication of management discipline. I think the same discipline that Sandy Pianalto referred to, which we are seeing throughout the rest of the business community, is evident also in borrowing.

Moving on to lending activity, for most of the past year the sense of the outlook that I've gotten from the banking industry has lagged our forecast in terms of the strength of the recovery. We have been predicting a recovery for most of the last year, and yet there was a hesitancy by the bankers to embrace that view, based on what they picked up in their interactions with their borrowers. Their expectations no longer lag ours; for the first time this year it seems to me that they have clearly caught up.

My having said that, to date the only significant lending activity is in commercial real estate. And the banks that are involved in commercial real estate are those that rely on an interest rate spread in order to achieve their profitability, so it's the small regionals and the large community banks. As suggested in the dialogue we had here between Sue and Steve regarding the potential weakness in that sector, I think developments there certainly bear watching.

C&I lending is still soft for all the reasons that we've talked about. Liquidity is strong, and productivity is strong. The partial expensing that, on the one hand, is increasing the incentives for investing is also providing increasing cash flow for debt service, which is perhaps postponing the need for borrowing. Taking all things into consideration, however, business confidence seems to have fully recovered. The partial expensing will provide an additional incentive for the second half of the year. And simply based on the responses of my contacts in the banking industry, it seems to me that there will clearly be increased activity from the banking sector in the second half of 2004.

In terms of where we are today, we have signaled in our communications a sequence of how we expected the recovery to unfold. We talked about expecting inflation to be quiescent for a considerable period. We moved from there to talking about the need for caution but patience in the removal of policy accommodation. Then we indicated that rates would likely move up at a measured pace, and it seems to me that we have reached the point where we can begin that process.

And I see little reason to change very much in terms of the manner in which we have anticipated that events would unfold.

CHAIRMAN GREENSPAN. Mr. Reinhart.

MR. REINHART.[5] Thank you, Mr. Chairman. I'll be referring to the material that Carol Low is in the process of handing out. The staircase plotted in the top left panel of your first exhibit shows the path of the federal funds rate consistent with money market futures through year-end assuming that you will act only at regularly scheduled meetings. Market participants uniformly expect you to firm policy ¼ percentage point this afternoon, the first installment in a sequence of actions that is anticipated to push the funds rate up to 2¼ percent by December. This message from futures markets, repeated in the top line of the table at the right, was mostly echoed by primary dealers in the Desk's recent survey, the second line, although the median respondent saw the funds rate as just touching 2 percent at year-end. As shown in the remaining cells of the table, eight out of ten of those dealers expected the Committee to keep its assessments of the risks to its growth and inflation objectives as balanced, and all of them anticipated retention of the "measured" language or substitution of something similar.

The remaining four panels of your exhibit make the case for ratifying expectations for this meeting by moving the funds rate up to 1¼ percent— which was presented as alternative B in the Bluebook. As shown by the black line in the middle left panel, keeping an unchanged nominal funds rate even as inflation has ticked higher has pulled an estimate of the real funds rate below zero and even further below the upwardly moving estimates of its equilibrium denoted by the shaded region. Moreover, the recent step-up in inflation and erosion of the output gap combine in the monetary policy rules we routinely track (which are mostly variants on Taylor's rule) to call for a higher nominal funds rate, seen in the upward slope to the green shaded area at the right. Indeed, as you have kept policy unchanged for the past year, you've moved from the middle portion of that band to its lower edge. The bottom two panels bear on the question of why you might be inclined to tighten now when you weren't willing to do so in May. For one reason, the two employment reports averaging near 300,000 monthly additions to payrolls since the May 4 meeting may have convinced you that the expansion is self-sustaining. For another, the continued updrift of inflation compensation at the five-year maturity and the recent swing in the five-to-ten-year-ahead measure may make you concerned that inflation expectations could come unglued. The time may have come to begin to remove policy accommodation at the measured pace of 25 basis points.

Or not, which is the subject of exhibit 2. In the Bluebook, we presented simulation exercises using the staff's FRB/US model. Unlike earlier incarnations of "optimal policy" in the Bluebook dubbed "policymaker perfect foresight," these

[5] The materials used by Mr. Reinhart are appended to this transcript (appendix 5).

simulations give investors as well as monetary policymakers perfect foresight. Even so, workers and households are assumed to form their expectations using a more limited set of information, a distinction that makes sense given the huge amount of resources devoted by financial market participants to divine policy intent and other economic conditions.

The simulations considering different inflation goals provide a convenient mapping from your longer-run intentions to near-term policy decisions. As noted in the first bullet in the top left panel and shown by the dotted red line in the middle panels, if the Committee interprets its goal of price stability to be an about unchanged level of the bias-adjusted core PCE price index—that is, if it has an inflation goal of 1 percent—these scenarios suggest that firming should commence immediately and probably at a pace that is quicker than "measured." A 1 percent inflation goal, though, may not be appealing for a number of reasons, including the nearness of the zero lower bound to nominal interest rates and a concern about an increased reliance on declines in money wages and prices to effect needed changes in relative prices. Under a 2 percent inflation goal, the blue dashed line, the optimal control exercise recommends tightening soon, but not today. Rather, you could accept the recent declines in the real federal funds rate as a spur to spending that erodes resource slack a bit quicker than in the baseline.

Your view of current and prospective resource slack may also influence your deliberations today. The bottom left panel plots capacity utilization in manufacturing over the past quarter-century. Capacity utilization has rebounded almost 4 percentage points since its trough last spring. Some members might wonder if the rapidity of that climb casts doubt on whether inflation will remain as well behaved as in the staff forecast. In particular, you might be of the view that the closing of the gap influences price setting independently of the level of the gap or, given the uncertainty surrounding estimates of the level of capacity, that resource utilization has risen into a region where it is difficult to assert with confidence that much slack remains. If so, and remembering the missteps in monetary policymaking in the late 1960s and 1970s, you might see the recent uptick in inflation as suggesting that it would be better to err on the side of firming forcefully today rather than risk the trench battle required to remove excessive inflation at a later date.

But other members might see this same picture as evidence that a sizable amount of resources is still going unused and be dissatisfied with an outlook in which that slack is worked down only slowly. Indeed, recent economic data on spending have been a shade disappointing, perhaps calling into question the vigor of the economy in the second half of the year and offering the possibility that slack persists at a more elevated level. And next year, the end to investment incentives and the waning of the effects of last year's tax cuts produce a pronounced retrenchment in fiscal impetus, as seen in the sidebar, which will restrain aggregate spending. The simulations suggest that deferring tightening a quarter or two would allow the real rate to remain lower—and a bit below its equilibrium range—for longer than in the baseline, providing encouragement to spending and sending production above that of its potential next year.

There may be an obstacle to either the firmer or easier policy considered in this exhibit—the words of your May announcement. Given the economic outlook at the time, it seemed prudent to guard against the building of outsized expectations of tightening by conveying both the intent to begin removing policy accommodation soon and the plan to do so at a measured pace, sentiments reinforced by many public comments by members over the intermeeting period. Events would not seem to be so different today as to justify either not beginning to remove policy accommodation or not doing so in a measured way.

While the intention embodied in those words—even though quite conditional—may have chafed at times, the statement appears to have encouraged market participants to prepare for a stint of policy tightening, the subject of exhibit 3. As can be seen in the first column of the top left panel, market participants currently anticipate about 2¼ percentage points of firming over the next year, considerably more than had been anticipated on the eve of the three prior episodes of policy tightening and more in line with what was actually delivered, the second column. And substantial uncertainty lay beneath these averages. For instance, as shown in the top right panel, economists surveyed just before the February 4, 1994, tightening reported a median expectation that the funds rate would be ½ percentage point higher by the fourth quarter of the year. And the responses were quite diffuse, with one in ten expecting no policy action or even easing. The limited available data on net positions in Treasury securities suggest that at least some market participants are acting on the expectation of policy tightening. Those identified as nonhedgers in the futures market have significantly lightened their long position in two-year Treasury futures (the middle left panel), and the primary dealers, in aggregate, have deepened their net short position in Treasury securities with more than three years to maturity (the middle right panel).

One source of large and variable demands for Treasury and other fixed-income securities in the past few years has been those of holders of mortgages and mortgage-backed securities. As the mortgage rate changes relative to its recent level, the economic incentive to refinance fixed-rate mortgages varies, implying corresponding alterations in prepayments of mortgages and their effective duration. In an environment of rising longer-term yields, durations of mortgages tend to lengthen, requiring those holders who seek to keep the aggregate duration of their portfolio relatively steady to sell some of their longer-term securities, potentially reinforcing the updraft in yields. In current circumstances, though, the average duration of mortgages, one estimate of which is plotted at the bottom left, has moved up to about 4½ years, about as long as it gets. It would seem unlikely, then, that mortgage hedging flows would contribute to upward pressures on rates as tightening commences. Lastly, the very low cost of protection from default by financial firms plotted in the bottom right panel indicates that market participants are not expecting significant strains. Evidence that the market seems ready in the aggregate, of course, does not preclude that individual firms will run into trouble. But many have taken the opportunity to prepare, suggesting that those who have not pose only limited systemic risk and should receive even more limited sympathy.

I have left discussion about your words for my last exhibit, which updates the alternative B column of table 1 of the Bluebook based on members' comments to soften the characterization of incoming inflation data and to trim the last sentence for clarity. Besides aligning the language to the reality of recent data releases, the wording of alternative B points out that policy remains accommodative, even after policy action, in the rationale paragraph. It also retains assessments of balanced risks to your two objectives on the view that the outlook does not differ materially from that at the May meeting, when you made a similar choice. Also in the risk-assessment paragraph, the measured pace sentence refers only to inflation, not resource slack, to align market expectations to the Committee's dominant concern. Lastly, the alternative B wording pairs the conditional commitment to remove policy accommodation at a measured pace with the reassurance that you'll do whatever it takes to keep inflation in check should the price outlook turn adverse. You might view this as piling on extra words to solve a problem that could be resolved by dropping the measured sentiment altogether. To be sure, saying less would restore a good measure of flexibility. But depending on the data over the next six weeks, these words encompass a 25 or 50 basis point move at the August meeting; and by deleting them, you would lose the opportunity to reassure market participants that your outlook is such that you likely can tighten gradually and that you retain your inflation-fighting credentials.

This raises a final topic that I embrace with all the enthusiasm associated with Sisyphus when he determines the time has come to begin rolling that big rock up the hill once more. Namely, I should point out a structural issue about your communication policy that may emerge in the next few meetings. The risk-assessment paragraph provides the opportunity to hint about the future direction of interest rates. In the past few meetings, the last added sentence has been sufficiently explicit about your intent—whether about a considerable period, your patience, or a willingness to be measured—as to trump however you characterized the risks to your two goals. If you envision dropping the final few sentences, you'll be left with the stripped-down risk assessments, which may not be that informative if they are left at balanced. One possibility would be to tilt the risks toward the upside now, explaining that, if the current degree of accommodation were maintained over the next few quarters, growth could well exceed its sustainable pace and inflation exceed that associated with price stability. But the nuances of the switch might well elude market participants, who as I have already noted expect the announcement of balanced risks. The risk-averse recommendation on the risk assessment is that, if it hides a few landmines that may prove troublesome in the future, there may be time to fix it after this meeting, including in the Chairman's semiannual testimony next month. That concludes my prepared remarks.

CHAIRMAN GREENSPAN. Questions for Vincent? If not, let me start off by noting that recent commentary—not only the anecdotal discussions around this table but also the reports from our various Beige Book contacts, directors, and the like—have all pointed to an extraordinarily expansive economy and to the emergence of underlying inflationary pressures. On the other hand, when we look at the basic data for the recent period, we see a series of downward revisions. This kind of disparity usually is not found in the same set of information unless we seasonally adjust the anecdotes, and I'm not quite sure how one goes about doing that! With regard to the data, the latest revisions for GDP and new orders have been down, initial claims have definitely stopped declining, and this morning we learned that the latest data on purchase originations from the Mortgage Bankers Association fell fairly significantly. There is something very interesting going on, and in time we will figure out what it is. I am sure that our favorite ex-member of the Board of Governors, in addition to his three rules that were mentioned earlier, has a fourth rule that will suggest how that is done.

I think that the surprises, strangely enough, are not in measures of inflation. The big surprise is in profit margins. They have surged at a pace we haven't seen in more than twenty years. The arithmetic of profit margins tells us something very interesting. At the level of about 12 percent for nonfinancial corporations on a consolidated basis, the arithmetic essentially indicates that a 1 percentage point increase in profit margins over a one-year time frame elevates the rate of inflation by 1 percentage point if unit costs are flat. And, indeed, if profit margins were to increase by 1 percentage point per quarter when overall unit costs are flat, we would end up with an additional 4 percentage points of inflation. In fact, starting in 2003, profit margins rose, on average, close to 1 percentage point per quarter; fortunately, this was partly offset by a drop in overall labor and nonlabor unit costs. Looking at the monthly patterns that are implicit in the income data for this year, it appears that profit margins have been essentially unchanged thus far through the month of May. What we are observing for the early part of this year is a little upward movement in unit costs and price increases that do not reflect further significant increases in margins.

Profit margins, as has been pointed out, are at the upper edge of the range beyond which historically they have not tended to rise. The reason is largely that, if they were to rise further, the result would be to contravene the long-term stability of the ratio of profits to national income. Indeed, what we are beginning to see, I suspect, is an effort to harvest these very large profit margins. In that regard, we are beginning to get a significant expansion in the utilization of labor and capital, the effect of which is to cause unit costs to move up. The way that apparently is occurring at this stage is largely through the effects on productivity, as we were discussing earlier.

The compensation of employees does not appear to have accelerated materially, although it is unclear what the last couple of months are showing. It is fairly evident that the real issue does not relate to structural productivity growth but to actual growth. What the data for April and May are suggesting is a very significant slowing in productivity and, indeed, a marked pickup in unit labor costs. Unit nonlabor costs actually, if anything, are reflecting a general decline in fixed costs as the economy's expansion spreads fixed costs over a wider base. So, what we are observing through the first five months of the year may be the beginning of a shift from the falling overall unit costs observed last year to a pickup largely because actual productivity growth, which was growing at a pace well above that of structural productivity, has moderated.

We are moving from the behavior of inflation as wholly the consequence of rising productivity, and therefore rising profit margins to increasing evidence of stabilizing margins, with some evidence that the stabilization is being induced by some slowing in productivity growth. In turn, unit labor costs are beginning to move up. It now looks as though increases in unit labor costs are somewhat above 2 percent, maybe between 2.5 and 3 percent at an annual rate in the most recent month or two.

Incidentally, the underlying inflation rate, using the market-based core PCE measure, is at an annual rate of 2.1 percent for April and May, and for the latest three months it goes up to 2.4 percent. So core PCE seems to have moved into a channel that appears to be slightly above a 2 percent annual rate, but that is in the context of still very high profit margins, which could very readily begin to decline and bring the inflation rate down.

It is difficult to judge at this stage how to play this; but it is very obvious, looking at the data, that what we are interpreting as cost pass-through is essentially an increase in profit margins. The reason is that, if final prices remain unchanged and costs increase, that is another way of saying that the cost pass-through does not exist and profit margins contract. On the other hand, if there is a full cost pass-through, of necessity final prices must rise as profit margins remain intact. Therefore, profit margins are probably a good indicator on a consolidated basis of the degree of cost pass-through, which we have seen happening at a fairly pronounced rate. As I said before, we've had profit margins rising at the fastest pace in twenty years, and that's another way of saying that we have moved from a price discounting environment to one of full pricing power. Remember, it's competition that enforces the tendency of real wages eventually to parallel productivity growth. If that is the case, algebraically we are talking about a constant share of profits to national income in the long run.

Our major outlook problem at this stage gets to the issue of trying to estimate total unit costs and more specifically, on a consolidated basis, unit labor costs. The latter, as you know, compose two-thirds or more of consolidated costs. Here we have a very interesting set of numbers. We know, as some have commented, that average hourly earnings have really been quite contained and, indeed, are running below 2 percent at an annual rate. Wages and salaries per hour that are implicit in the personal income data are running significantly higher. And I have the data here if I can only find them in my usual well-organized filing system. [Pause] I have them now. The table with these data was sitting where it was supposed to be, and therefore I couldn't find it!

In the first quarter, wages and salaries per hour were rising at a 3⅓ percent annual rate and were increasing at a somewhat higher pace in the April–May period. What that tells us is that the average hourly earnings of supervisory workers, which are not published separately, must be rising fairly significantly or, alternatively, the way we usually term it is that the skilled–lesser skilled differential is continuing to open up in the wage market. Another way of putting this is that average hourly wages of college graduates are rising faster than those of lesser educated workers. Now, this obviously raises questions about the meaningfulness of the aggregate unemployment rate as it affects this total system. As far as I can see, there does not appear to be anything in the monthly data that suggests that overall wages and salaries per hour are accelerating in any material way. Obviously, our analysis is running into other labor income and supplements that are somewhat stronger, but the problem at this stage does not appear to be an acceleration in wages. The basic problem is an apparent slowdown in productivity that is creating the possibility of increased unit costs that will either affect profit margins or get passed through into higher prices.

All that said, the data as best I can judge them at this stage appear to be consistent with flat profit margins and units costs that are rising at an annual rate in the area of, say, 2½ percent, or alternatively with gradually declining profit margins, which is what one would expect in this environment. That would bring the core inflation rate down to a level of about 2 percent with no real evidence of acceleration going farther out.

Without getting into the details of the data we have constructed for nonfinancial, non-energy corporations, if we consider the impact of oil, obviously we can see fairly significant increases in unit costs stemming from higher energy costs. Incidentally, when we perform this type of consolidation, we also see that unit import costs are rising and then flattening out. In any event, gasoline prices are coming down quite considerably. One of the reasons is that margins both at refineries and at marketing operations are running well in excess of what one would ordinarily expect, given the refinery acquisition cost of crude oil. In fact, the data point to an excess margin of something like 20 cents a gallon, and if that comes down, it will have the effect of damping inflation psychology.

I might reiterate what has been pointed out previously, namely that measures of long-term inflation expectations are remarkably contained. Indeed, the measure that I find most useful in that regard is the forward rate on one-year maturities nine years out. In other words, it's the yield associated with the last one-year tranche of a ten-year note. That yield has barely moved. Well, actually it has moved; it has moved down in recent days and is now definitely below its level in August 2003. In short, there is no evidence in these data that confirms some commentary to the effect that market participants think the Fed is behind the curve. If markets thought that, we would see some very significant acceleration in inflation expectations and increases in interest rates. But there are no real indications in the data that markets perceive us to be behind the curve. The question is what we should do to make sure that continues to be the case. For one thing, I think we have to remember that how we move forward is a function of how we evaluate balance sheets in the economy. If everybody held one-day paper on the asset side of their balance sheet and overnight maturities on the liability side, then whatever we wanted to do would have zero effect on the balance sheets and the income statements. That is a critical issue of the financial sector. But because such a maturity structure does not generally exist, we have to be careful not to move too fast and risk destabilizing the financial system by enforcing maturity mismatches and other idiosyncrasies in the financial system.

Remember, while the carry trades have come down and unwound to a significant extent, as Vincent has pointed out, so long as the markets perceive that we will move only on the dates of our scheduled meetings, we can be absolutely assured that tomorrow the carry trade will come back for six weeks because one leg of the carry is thought to be guaranteed. So, in effect there is no way we can create market expectations that put us in a position of having zero effect at the end of the day when we eventually move.

So where we are at this stage in my view is clearly that we are going to move, or I hope we're going to move, 25 basis points today. We have to leave open the possibility that we may wish to move 50 basis points in August. Even so, I would suggest that our post-meeting statement retain the notion that our further removal of policy accommodation will be at a pace that "is likely to be measured." But I also think it would be wise on our part to follow that sentence with a new sentence that essentially nullifies it but doesn't eliminate it. That sentence would say, "Nonetheless, the Committee will respond to changes in economic prospects, as needed, to fulfill its obligations to maintain price stability."

If we decide to go ahead in that way, we will leave open the possibility of dropping both sentences at our next meeting and then dealing strictly with the issue, as Vincent pointed out, of the balance of risks statements. I'm not saying that we need to, or should, but we open up the possibility. I would be very concerned were we to drop the word "measured" this time largely because the markets have adjusted to it. They are in fact behaving as though they know where we're going today and are in the process of adjusting. If policy expectations continue to work out that way over time, the market effect will be virtually nonexistent. Now, that is not going to happen as we certainly know. Even so, I think we have to be careful not to take any action without significantly foreshadowing what we are going to do one way or another. We have the forthcoming semiannual testimony to calibrate how we want to be positioned for the August meeting. And if it turns out in the next three weeks that we have significant acceleration in inflation pressures, I would be prepared to suggest that 25 basis points is not necessarily what we had in mind. But we don't need to say that today, and I think it would be a mistake to do so.

I conclude with a recommendation that we move up our target for the federal funds rate by 25 basis points and that we issue the press statement that Michelle will now circulate. It refers to the possibility that we may move at a faster pace, but we will do so only if necessary. We need to be cautious because, if we move at a faster pace, we may be taking risks that we do not need to take. [Pause] Is that statement acceptable to everybody?

MR. POOLE. Do you want to start a go-around on this issue?

CHAIRMAN GREENSPAN. No, we don't need a go-around on this. If you have an objection to the statement, please indicate it.

MR. POOLE. I guess I can accept this statement. I must say that I've been sitting on a very pointed fence for a long time on this issue about language. Would it be reasonable to ask Vincent to circulate in advance suggested language for our August meeting—to give us some idea about what we are going to do about this so that we can think about it ahead of time? I think there's a sense around the table—certainly I feel this way—that we've got to get out from under this language somehow. And I think we need to spend some time on this.

CHAIRMAN GREENSPAN. I think that's an excellent suggestion, and there's no reason that it can't be done. Vincent could give alternate suggestions. Even though we have six weeks to do that, there's no reason that we can't send out early versions of different possibilities if we decide to drop the last two sentences.

MR. REINHART. I would be tilling some of the ground of the two prior Ferguson working groups, but I can give you alternative wording on different rationales that the Committee considered in its previous discussions of communication policy.

MR. POOLE. If we adopt the proposed statement, I think it would also be appropriate—perhaps in the monetary policy hearing, Mr. Chairman—for you to in some way emphasize this last sentence that has been added to the statement. I don't know how to do that exactly. But I just worry that an implied commitment to the market of moving 25 basis points per meeting could leave us with continuous declines in the real federal funds rate.

CHAIRMAN GREENSPAN. This does not say that; it doesn't make a commitment. If you read it very closely, it says that we are forecasting that our moves are likely to be measured but that we will act on the basis of the evidence.

MR. POOLE. All I'm saying is that I think the way this plays out is going to be influenced by the degree of emphasis placed on the one sentence rather than the other sentence.

CHAIRMAN GREENSPAN. I agree with that.

MR. POOLE. I hope that we can put a lot of emphasis on the importance of the data in driving what we do and try to back off from that implied commitment.

CHAIRMAN GREENSPAN. That is clearly my inclination. Remember, we started with "considerable period," then we went to "patience," and now we're coming to various forms of unwinding the whole process.

MR. POOLE. This is sort of the great-grandchild of "considerable period!" [Laughter]

CHAIRMAN GREENSPAN. It has turned out better than we had any reason to anticipate. And I think we need one more turn of the screw to go back to our old-fashioned balance of risk statement. But I don't think it has to be done today. We don't need it. Are there any further comments? Yes.

MR. SANTOMERO. I have a question about one particular phrase. We have in this statement "hiring has picked up." On consideration, I'm worried about how that will be interpreted in the event that we get something like a month with 200,000 in job gains.

CHAIRMAN GREENSPAN. But hiring has picked up.

MR. SANTOMERO. But if we see a month with 200,000 of job creation people may say, well, hiring is not picking up. So I was thinking about something more generic like "labor market conditions have improved." That would be more expansive and therefore less susceptible to second-guessing. It's just a question. I think both characterizations are correct, but one is more ambiguous in the fuller sense.

CHAIRMAN GREENSPAN. I have no objection to that language if people would prefer that. Is that satisfactory to everybody? Let's make that change.

MR. KOHN. What were the words—"labor market conditions have improved"?

MR. SANTOMERO. "Labor market conditions have improved." It's a bit more ambiguous, so we don't have people overreacting to an individual labor number.

CHAIRMAN GREENSPAN. I think that's a useful addition. Yes?

MS. MINEHAN. I feel very much the same as President Poole does about this. I thought we should take the opportunity now that we're increasing rates to go back to the old formulation. I probably should have responded to the Bluebook sooner with some alternative language, which I worked on a little. I can go along with what you are suggesting. I take your point that things have gone pretty well with this whole process. But I think there's going to be some scrutiny of the fact that we're saying "measured" and then trying to take it away in the next sentence.

CHAIRMAN GREENSPAN. Actually, I started that process.

MS. MINEHAN. I know you did.

CHAIRMAN GREENSPAN. I don't think we got a negative reaction to that.

MS. MINEHAN. Maybe, maybe not. I'm not sure I agree with that. But that's your interpretation, and I'm willing to go with it. Nevertheless, I do think it would be good for Vincent to figure out some ways in which we might say what we did and why we did it and then characterize the risks in a simple fashion the way we used to. I hope we'll go back to statements that are a little shorter and more formulaic and stop trying to create great grandchildren.

CHAIRMAN GREENSPAN. That's where we're headed. Any further comments? Yes.

MR. GRAMLICH. We may be headed there, but remember this: When we had all of these working groups that Roger chaired regarding language to describe the balance of risks, we had very difficult problems shaping that into clear communication. First, we have an issue that we'll never resolve on exactly what we mean by the output gap. And when we're talking about inflation risk, what are we assuming about rates? Are we assuming that the funds rate equilibrium is 1 percent or 2 percent or what? We had horrible problems. I think we got into this process partly because the balance of risk language didn't really do the job. And I actually think this statement is clear.

CHAIRMAN GREENSPAN. Well, let's put it this way. We can drop those two sentences and put in additional sentences. I think there's general agreement within the Committee as to where we want to go and it's merely a question of finding the appropriate language. So far, this innovation of putting it in the Bluebook I think has worked surprisingly well.

MR. GRAMLICH. I'm just trying to caution everyone not to think that the balance of risks formulation is going to be a panacea because it really wasn't before and I don't think it will be now.

CHAIRMAN GREENSPAN. Well, that's something we are about to find out. If there are no further questions and this is acceptable, would you kindly read the appropriate language?

MR. BERNARD. I'll begin with the directive itself, which is on page 14 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 1¼ percent."

Then with regard to the portion of the statement in the press release that is part of the vote, which is the third paragraph, the wording is: "The Committee perceives the upside and downside risks to the attainment of both sustainable growth and price stability for the next few quarters are roughly equal. With underlying inflation still 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 obligations to maintain price stability."

CHAIRMAN GREENSPAN. Call the roll, please.

MR. BERNARD.

Chairman Greenspan	Yes
Vice Chairman Geithner	Yes
Governor Bernanke	Yes
Governor Bies	Yes
Governor Ferguson	Yes
Governor Gramlich	Yes
President Hoenig	Yes
Governor Kohn	Yes
President Minehan	Yes
Governor Olson	Yes

President Pianalto	Yes
President Poole	Yes

CHAIRMAN GREENSPAN. The last item on our agenda is to confirm that the date of our next FOMC meeting is August 10. Before we adjourn, I'd like to request that the members of the Board of Governors adjourn to my office to address the issue of the discount rate. Today we have an extraordinary situation in that all twelve Reserve Banks are requesting an increase in the discount rate. [Secretary's note: Shortly after the end of this meeting, the Board of Governors voted unanimously to approve pending requests for discount rate increases of 25 basis points, to 2¼ percent, from all twelve Federal Reserve Banks.]

END OF MEETING