

## APPENDIX

FOMC NOTES - PRF  
February 4-5, 1997

Mr. Chairman:

I will be referring to the charts distributed on the table.

After your last meeting, U.S. forward, short-term rates continued to back up but, as you can see, not to the levels reached last July and late August; in the last week or so they have stabilized and even backed down a bit in the past two days from Friday's levels reflected in the first panel. German and Japanese forward rates, however, have remained quite low.

This pattern of forward rates reflects expectations that a firming action by the Committee is not thought to be imminent but was, until just recently, thought to be likely sometime later this year. There are really no prospects for an increase in rates by either the Bundesbank or the Bank of Japan in the near future. The compression in German forward rates seems to me to incorporate some possibility for a further ease by the Bundesbank. Japanese forward rates I think reflect the market's looking past the current position of the Japanese economy to focus on the risks that increased fiscal drag in the new fiscal year, starting in April, will slow the economy down yet again.

The most notable development since your last meeting has been the rapid rise of the dollar to levels not seen since June 1994 against the mark and February 1993 against the yen.

With the unwinding of the heightened expectations for a tightening by the Committee early last September, the dollar's interest-rate advantage began declining through late November as you can see on the second page. At that point, it was an increasingly-fashionable, minority view that the Committee's next action would be an ease, as the economy was thought to be slowing down.

There was then a relatively sharp reversal of both expectations and the trend in interest-rate differentials early in December, as I described at your last meeting. This shift appeared to be vindicated by the late December and early January data releases, which pushed up our bond yields and brought 10-

year differentials with Germany and Japan to their highest levels in this decade -- though still well below the levels which prevailed in the late 1980s.

While the widening of the U.S. interest-rate advantage has played a role in the dollar's sudden climb. I think it has really served to summarize and underscore the market's pessimistic assessment of German and Japanese prospects. The dollar held up quite well in the fall when the differentials were narrowing. Both then and now the market's strong presumption has been that risks in the U.S. remain on the upside, while in Germany and Japan they are seen as decidedly on the downside.

Looking forward, at the risk of stating the obvious, it seems to me that there are "fat tails" on both sides in the distribution of the dollar's potential moves from here.

An unexpected pickup in growth in Germany or Japan, or a sudden acceleration of inflation in the U.S. which significantly affected bond and equity prices, could cause the dollar to sell off sharply. On the other hand, if the market's pessimistic outlook for Germany and Japan were to be vindicated, and if the fragile Japanese banking system were to crack, while the U.S. economy were to accelerate, then the dollar could rise quite a bit further.

There are many in the market who are convinced that the yen will begin to strengthen sharply against the dollar when the Bank of Japan begins to raise rates. I am skeptical. First, I do not think that this day is near at hand. Second, when it does come, I think there is a possibility that the Japanese authorities will find, as we did in 1994, that when you start to raise interest rates from very low levels there are considerable capital losses to be incurred on bond and equity holdings along the journey of narrowing their large negative interest-rate differentials.

Coming back to the here and now, the dollar has lost some of its rapid, upward momentum in the last few days as market participants have focused on the combination of the muted fourth quarter price data as well as the prospects for our first quarter to be slower than the fourth quarter. As a consequence, our bond yields have declined by around 20 basis points in recent days and our 10-year differentials with Germany and Japan have each fallen back a bit from the levels reflected in the middle panel, as of Friday. However, the dollar has continued trading around 122 against the yen and 1.64 against the mark. There still seem to be many who "missed" the dollar's rally, and this appears to be keeping the dollar well bid.

Turning to domestic operations:

The turn of the year occurred with only the usual degree of pressures in the funds market. While we did reach new lows in operating balances in late January, the market hardly seemed to notice.

On page 3 of your chart package, each of the three panels depicts the Fed funds daily trading range and effective rates for the four maintenance periods in December and January which surround each of the last three year-ends: '94 to '95; '95 to '96; and '96 to '97. You can also see the period average operating balances for each maintenance period, which have declined from a range of 30 to 25 billion in 1994-95 in the top panel, to 21 to 18 and a half billion this year.

On the next page, the same periods are shown, but instead of the daily trading range (which includes the high and low trades regardless of the volume traded) here on page 4 the vertical blue lines depict the funds' rates within one standard deviation of the effective rate, which measures deviations from the effective rate weighted by volumes traded. In the bottom panel, you can see the two days -- indicated with the heavy arrows -- when operating balances reached new lows of 15.5 and 15.3 billion, to so little apparent effect.

This information is summarized on the final page in a table which shows the number of days, in each December-January period over the last three years, when the trading range was wider than 50 and 100 basis points, when the effective rate deviated from the target rate by more than 10 and 25 basis points and when one standard deviation of Fed funds trading surrounded the effective rate by more than 10 and 25 basis points.

Over the last three years, there has been a discernable increase in the number of days on which the trading range varied by more than 50 and more than 100 basis points. But it is much harder to find significance in the year-to-year comparison in the variance of the effective rate or the standard deviation.

In short, my general impression has not changed: with the gradual decline in operating balances that we have experienced to date, while we have seen a modest increase in the range of the funds rate, so far the bulk of the market's activity continues to occur in patterns that appear to reflect the familiar ebb and flow of demand and supply for reserves.

However, as I have mentioned before, we continue to have somewhat more frequent difficulties in forecasting applied vault cash and required reserves. Also, while forecasting Treasury balances around tax payment dates is always tricky, we are increasingly aware that, with declining operating balances in the

banking system, a given miss in our forecast for the Treasury balance represents a larger percentage of banking system balances.

Looking forward to the upcoming inter-meeting period, I would like to request the Committee's approval for an increase in the Desk's inter-meeting leeway for outright purchases from the current 8 billion to 12 billion.

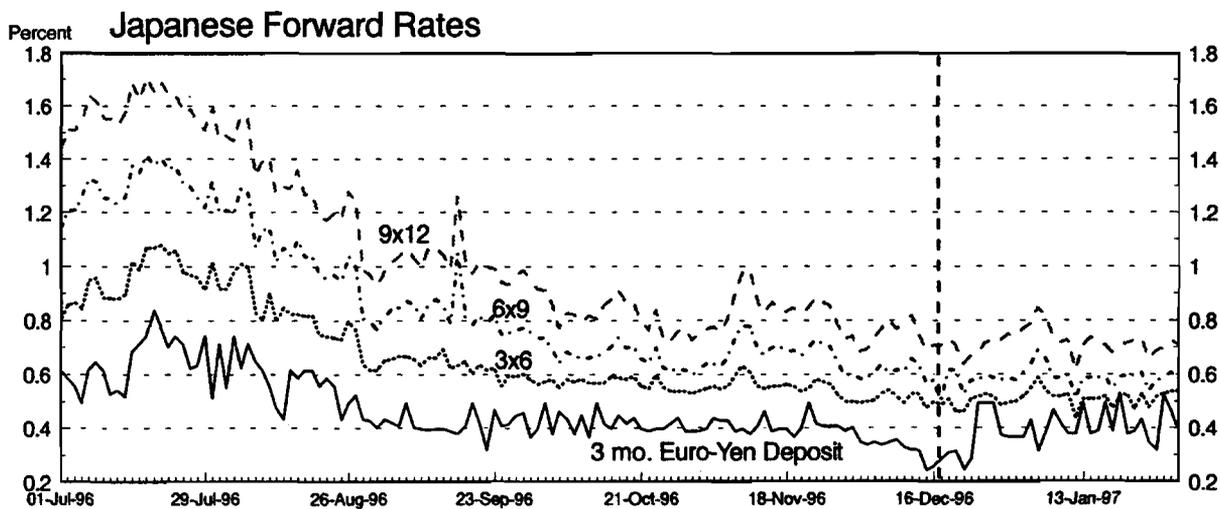
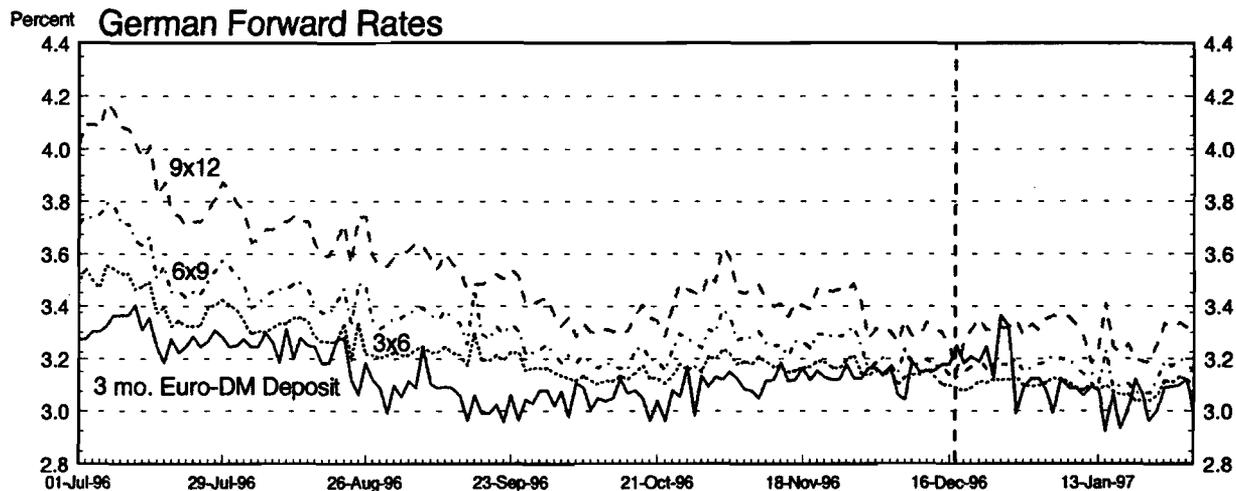
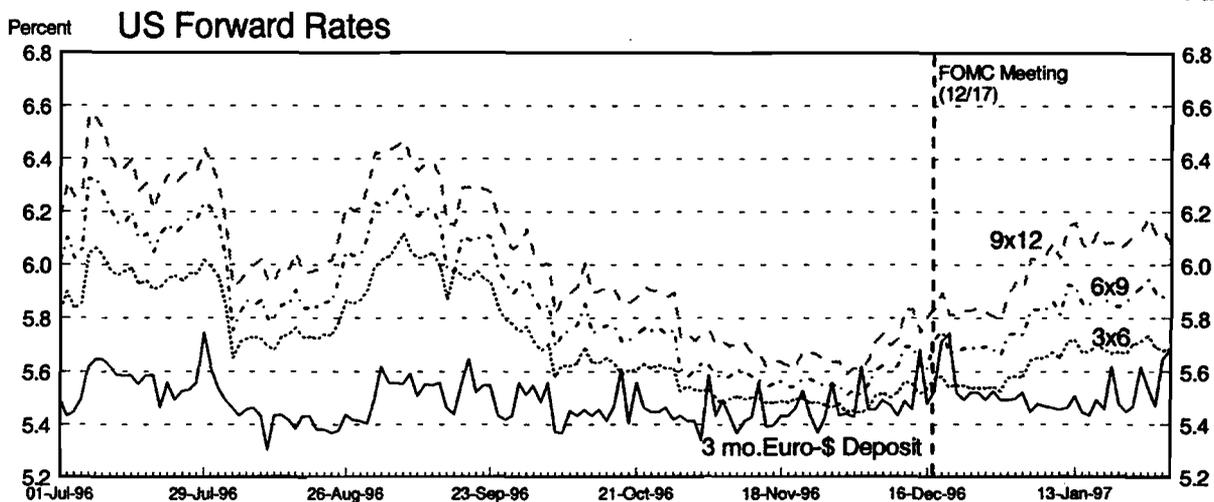
Our current forecasts are for reserve needs to grow by almost 13 billion by the maintenance period before your next meeting. As I mentioned in December, I plan to conduct coupon purchases of around 6 billion over the course of February which, on current forecasts, would leave roughly 7 billion in continuing reserve needs by the end of the period.

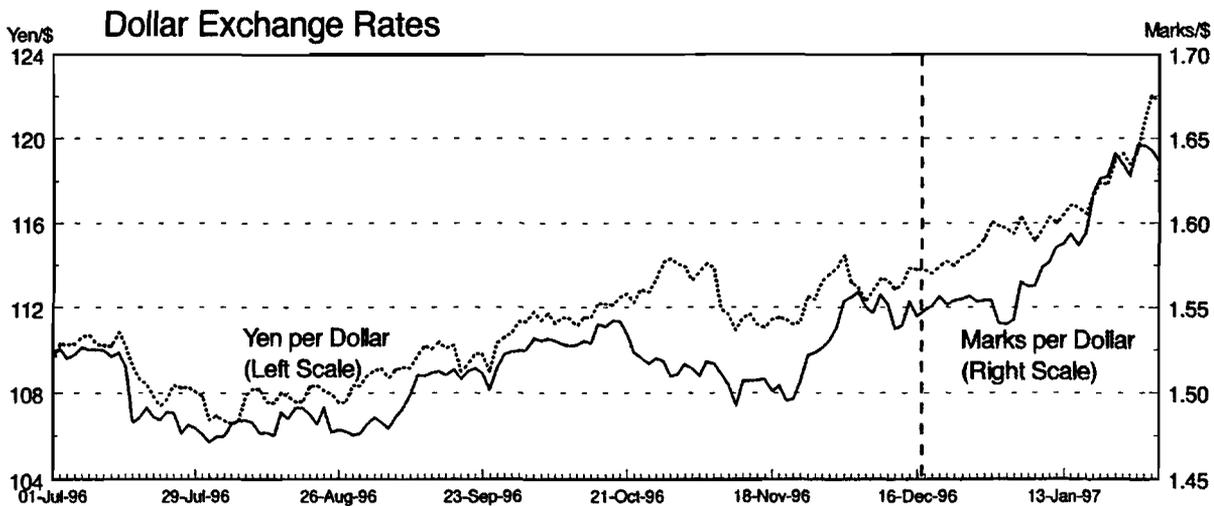
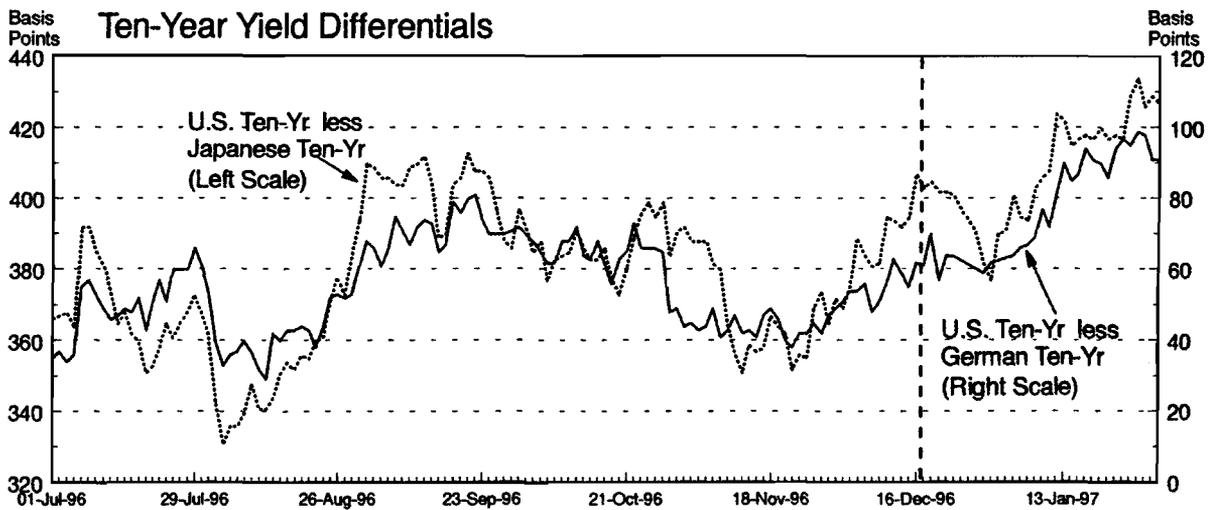
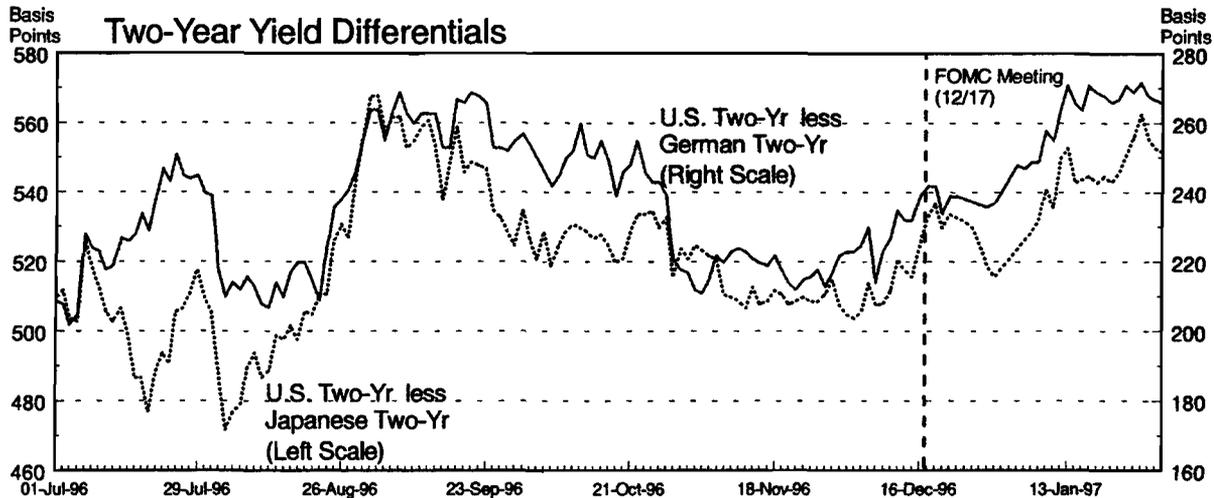
I am quite comfortable meeting needs of this size through temporary operations and, if the future conforms to our forecasts, this may be the preferable course of action. Given our forecasts for virtually no growth in required reserves, continuing needs of this size give us some cushion against the risk that required reserves actually decline. However, depending upon the pattern and size of daily reserve needs in March, we might also want to purchase 2 or 3 billion in bills which, together with our 6 billion in coupon passes planned for February, would either exhaust or exceed by 1 billion our current 8 billion leeway.

Additional flexibility in a higher leeway is desirable from my standpoint because the future is frequently less tidy than our forecasts. If instead of no growth in required reserves, we actually experience even modest growth, then a larger bill pass could be desirable. In addition, with the fixed date of the Japanese fiscal year end looming on March 31st, and given the recent reassessments of the weaker Japanese banks, we face the risk that the Desk may be asked to accommodate a sudden need to liquidate securities by the Japanese authorities to facilitate their management of any extraordinary dollar funding needs of the Japanese banks. The higher leeway would help us in managing this contingency.

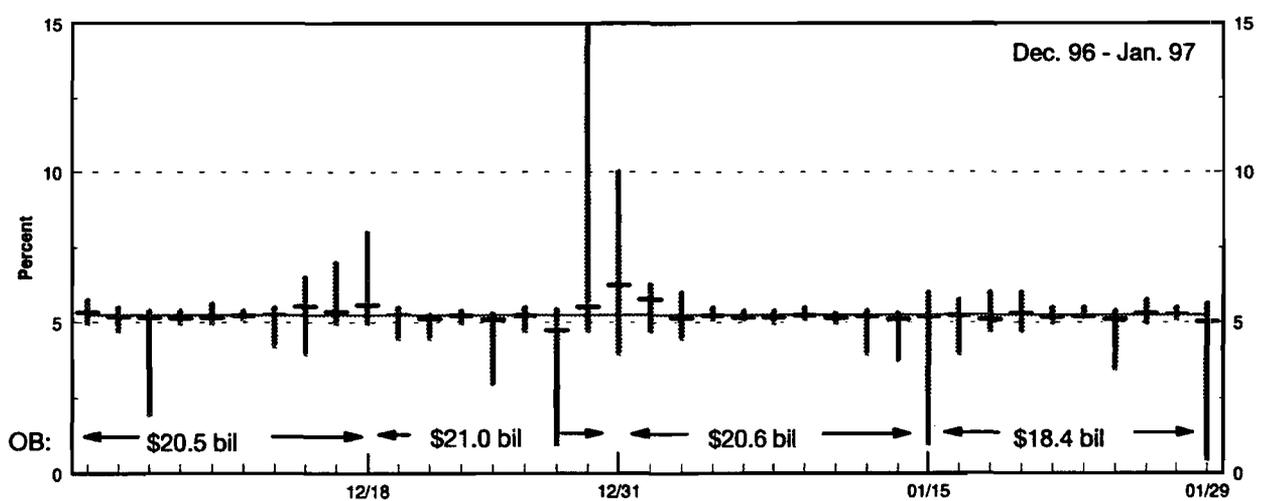
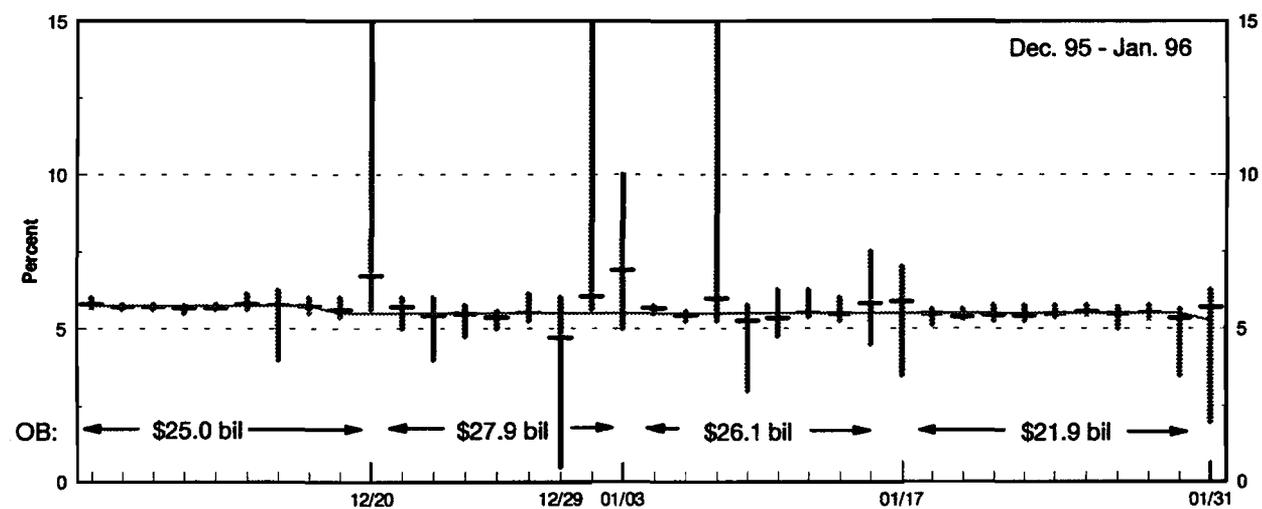
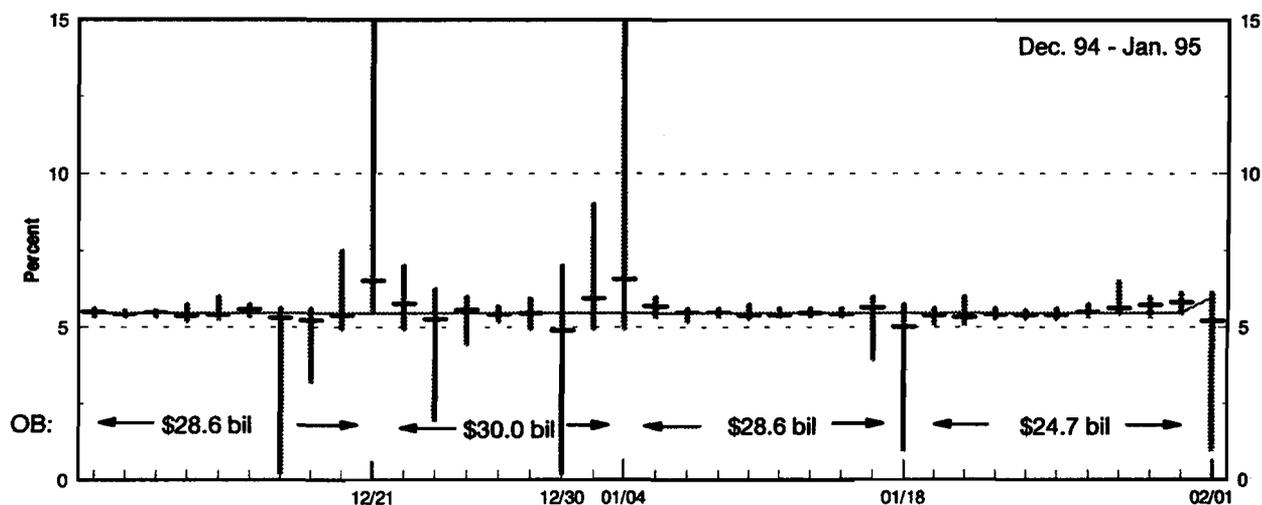
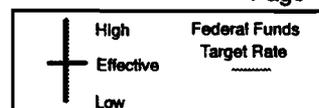
Thus, I would like to request the Committee's approval for an increase in the intermeeting leeway from the current 8 billion to 12 billion.

Mr. Chairman: we had no foreign exchange intervention operations during the period. But I will need the Committee's ratification of the Desk's domestic operations during the period. I will be happy to answer any questions.





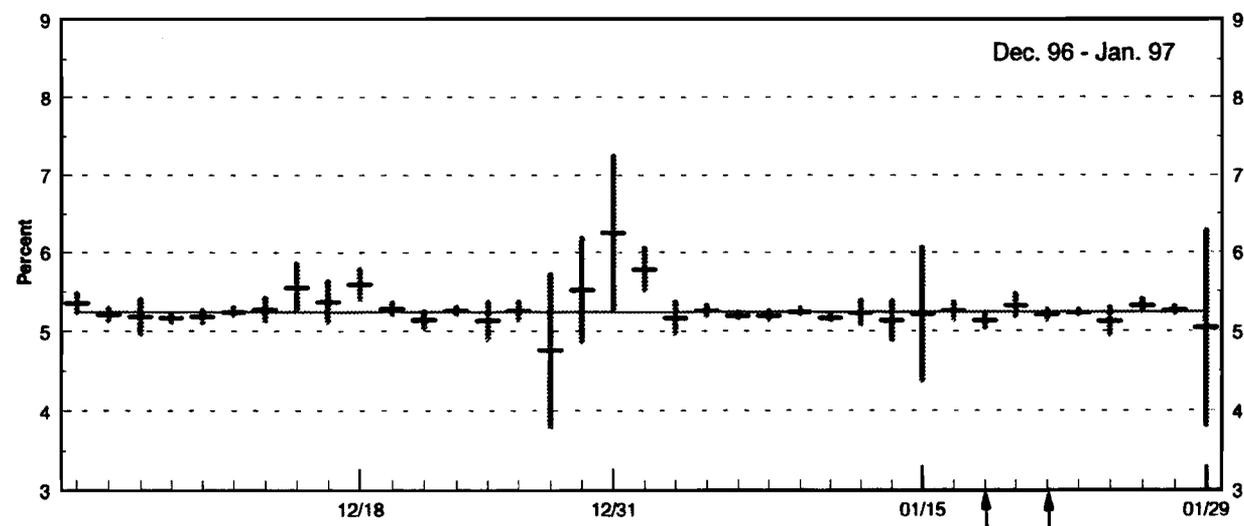
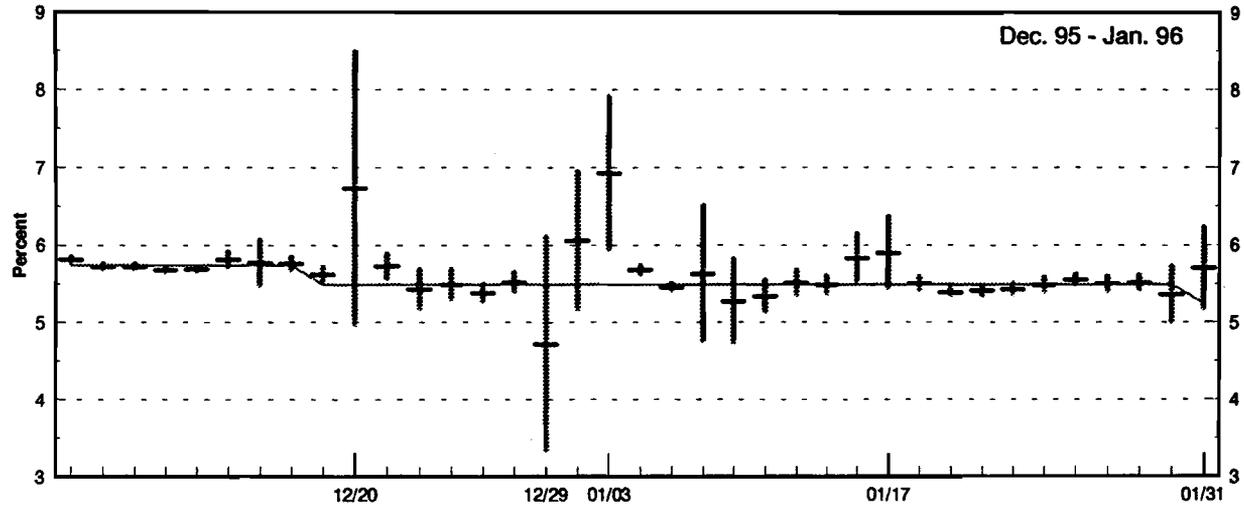
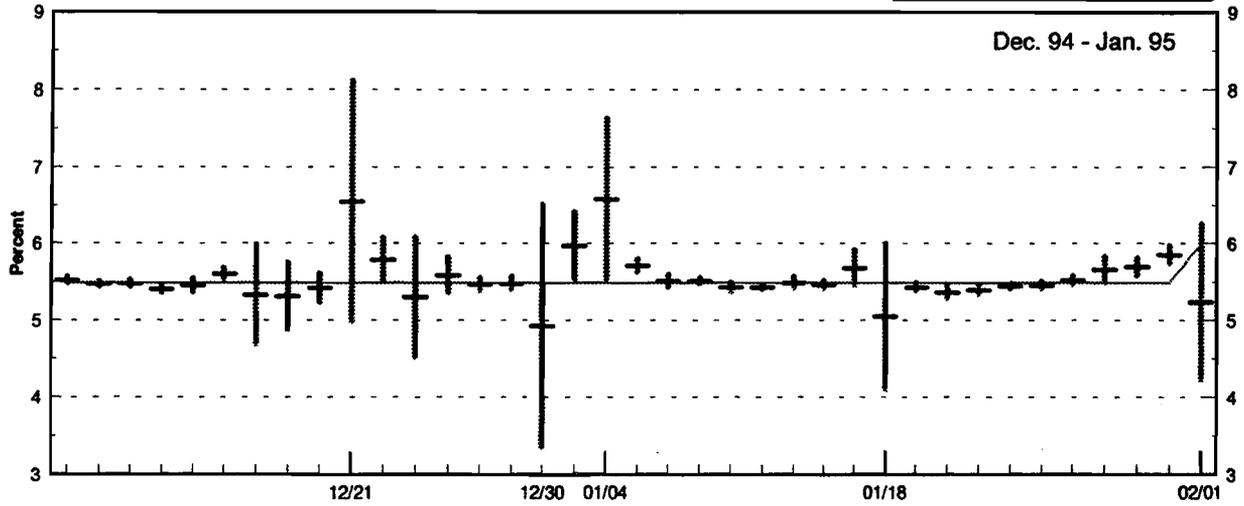
### Federal Funds Daily Range and Effective



OB - Period Average Operating Balance

Cassandra Bryant  
Markets Group, FRBNY

# Federal Funds Plus and Minus One Standard Deviation and Effective



Daily Operating Balance    15.5 bil    15.3 bil  
Cassandra Bryant  
Markets Group, FRBNY

FEDERAL FUNDS MARKET:  
FOUR MAINTENANCE PERIODS  
SURROUNDING YEAR-END  
(number of days)

	<u>1994-95</u>	<u>1995-96</u>	<u>1996-97</u>
<b>Daily trading range</b>			
more than 50 b.p.	20	21	25
more than 100 b.p.	13	13	18
<b>Deviation of effective rate from funds target</b>			
more than 10 b.p.	17	15	12
more than 25 b.p.	8	7	5
<b>One standard deviation around effective rate</b>			
more than 10 b.p.	16	18	19
more than 25 b.p.	10	11	7

Michael J. Prell  
February 4, 1997

FOMC Chart Show Presentation -- Domestic Economic Developments

Ted and I shall be referring to the set of charts labeled "Staff Presentation...". But, before we turn to the first exhibit, I want to try to dispose of the obvious question of how the world changed when we received the fourth-quarter GDP report.

You may have sensed from the first paragraph of the Greenbook that we were mentally prepared for the possibility that the advance estimate of GDP growth would greatly exceed 3-1/2 percent. It wasn't our best guess as to how BEA analysts would read the available data, but there was enough uncertainty that one couldn't reject the more extreme predictions circulating on Wall Street. As it turned out, the "extremists" were right.

Since Friday, we've been attempting to divine the message in the report. The bottom line is that the nature of the changes in the fourth-quarter picture doesn't lead us to alter our forecasts of growth or inflationary pressures in any significant way. To save time, I'll leave it at that for now. But we'll be happy to respond later to any questions you may have on the matter.

I'll turn then to the first chart, which summarizes our forecast. This is one of the few charts that we have updated to take account of the fourth-quarter GDP report. The changes to history and forecast generally are too small to be visible in the other charts, let alone to alter the analytical content of our exhibits. As you can see in the top panel, we were--and still are--projecting a substantial deceleration of real GDP growth, from more than 3 percent last year to a little over 2 percent per year in 1997 and '98.

This output path had led us to predict that the unemployment rate will edge down to 5 percent by next year. This is a tad below the levels reached in the late 1980s, and we believe it implies enough pressure on resources to cause the trend of inflation to tilt upward.

However, that effect is muted in the projection of the CPI by expected favorable developments in the food and energy sectors--and also by technical changes in the index. So we have the overall CPI decelerating in 1997 and then picking up to only a 3 percent increase next year.

Chart 2 summarizes the policy assumptions underpinning our forecast. The first is that the federal funds rate is held near 5-1/4 percent. If and as people come to perceive that inflation has begun to trend upward, this stability of the nominal funds rate might imply a slight decline in the real short-term rate. Perhaps where that altered perception of a change in price trends may prove more important over the projection period is in intermediate- and long-term rates, which could move upward as a result of some combination of an enlarged inflation premium and an expectation of Fed tightening.

In the near term, however, we think the bond markets may benefit a bit from expectational changes related to events in the fiscal policy sphere. We are assuming the efforts to pass a Balanced Budget Amendment will fail once again, but we are anticipating that agreement will be reached on a program promising balance by 2002. That program will impose ongoing, moderate fiscal restraint on aggregate demand. While such a development is widely discussed, it's our judgment that there's still enough skepticism on Wall Street that actual legislation will have some positive impact on the financial markets.

Why might one anticipate a budget deal this year, after last year's failure? I've listed some of the more conventional reasons. First, the two sides weren't really that far apart, at least on the numbers, when negotiations broke down a year ago. Second, the numerical task is easier now, given the revised budget outlook. The graph shows the sizable downward revision in the CBO baseline forecast of the deficit since last year. The third observation is that there may be a better setting for bipartisan action this year: Republicans in the Congress learned the political advantages of some compromise on policy issues, while the President has identified balancing the budget as a top priority for his final term.

These considerations certainly don't make the balanced budget a sure thing. Partisan tensions haven't disappeared. One of the steps many people see as an attractive way to achieve some of the deficit reduction--an adjustment to the COLAs for benefits and tax brackets--is seen by others as political poison. And, discretionary spending already has been cut substantially in many areas.

That brings me to an assessment of the risks in the fiscal outlook. One is that the strain in reaching the goal of balance on paper, while providing tax cuts as well, will lead to heavy use of gimmicks, such as unspecified spending reductions or asset sales. With it also not being possible to rule out another political stalemate, I would characterize the risks as clearly biased toward less fiscal restraint than we have assumed.

As I suggested, financial market participants are likely to tolerate some shortfall from guaranteed budget balance. Indeed, as the title of my next chart indicates, they seem to be in the grips of a pretty powerful euphoria. Share prices have risen about two-thirds

in the past 25 months, producing a substantial increase in the price-earnings ratios of the S&P 500 and NASDAQ indexes graphed at the top of chart 3. It's natural to ask whether such a run-up represents a speculative bubble, rather than a sound assessment of economic fundamentals. I haven't either the time, or the wisdom, to do justice to this subject. But I'll offer a few observations.

My going-in point is that the mere dimension of the rally is legitimate grounds for suspicion, and that the level of popular interest in the stock market today begins to smack of mania. But let's try to look more objectively at the evidence on current market valuation. As you can see, the p-e for the S&P 500, based here on twelve-month trailing earnings, is relatively high. On the other hand, as the red line in the chart indicates, the current p-e would not be quite so high were reported profits not still being damped by special charges for restructuring. Although this time series, constructed by Goldman-Sachs, goes back only to 1985, it is generally believed that such charges weren't so large a factor proportionately in earlier years. On the third hand, however, there are those who might argue that there are earnings quality questions on the other side, such as the lack of recognition of stock option costs.

A second bullish argument is that high p-e's can be explained by the current low level of inflation. The table at the middle left shows the negative correlation historically between p-e's and inflation.

Inflation cannot be the only factor determining p-e's. Earnings growth prospects obviously should play a role. The vertical lines in the upper panel denote troughs in the earnings cycle for S&P 500 stocks. As you can see, peak p-e's typically have occurred close

to troughs in earnings--presumably because people expected better days ahead. Well, we're nowhere near a trough in earnings: profits have been soaring in recent years. Yet, as can be seen in the middle right panel, analysts' expectations of profit growth for the next three to five years are high and have been rising. There may be something to the notion that the S&P 500 includes many relatively strong companies, at least some well-positioned to make extra money from foreign activity. But one may reasonably ask whether the S&P companies as a group can continue to achieve profit improvements so far above the growth rate of nominal GDP.

Where we came out in our projection of stock prices is that valuations are probably on the high side, but that the market is unlikely to drop substantially just because of the shortfall in profits, relative to prevailing expectations, that we're forecasting. The experience of recent decades suggests that--absent some unforeseen political or economic shock--a major reversal is likely to require a significant tightening of monetary conditions--or at least the anticipation of one.

Meanwhile, we hold a similar view about credit market conditions. It appears to us that lenders are demanding less and less compensation for risk. This is visible in the narrowing of spreads on bonds and bank loans depicted in the lower panels. Experience suggests that such trends typically come to a bad end that leads to lender retrenchment and a contractionary force in the economy, but we can't at this point see the circumstance that will lead to a significant reversal of these lending patterns. As you well know, there have been losses on consumer loans, but banks have been moving to contain them, with only minor effects on overall credit

availability. The Mercury Finance affair may take the bloom off the sub-prime lending business, but it remains to be seen how that will play out and only a narrow slice of the credit pie is involved.

Setting aside the possibility that, sometime down the road, more folks will regret their earlier aggressive lending or investing decisions, what's so bad about their feeling so good right now? One highly relevant possibility, in our view, is that the developments in the financial markets will directly or indirectly spur extra demand in the markets for goods and services at a time when resources are already being stretched.

Charts 4 and 5 summarize our projections of demand. The top panel of chart 4 highlights the outlook for consumer spending. We expect consumption (the black line) to remain quite robust in the near term, buoyed not only by the strong recent trend of disposable income (the red line) but also by the sharp gains in wealth and the positive sentiment of households. These factors should outweigh the negative effects of high debt burdens and tighter credit card lending practices. But we're projecting that the stock market will flatten out and that the ratio of wealth to income will fall in 1998. This presumably will tend to weaken demand growth as time passes.

Business fixed investment is also projected to decelerate somewhat. Financial market conditions certainly are favorable, but growth of internal cash flow will be slackening. We expect that declining prices and advancing technology will continue to drive sizable gains in outlays for computers and communications equipment, but expenditure on other equipment is projected to be flat. In manufacturing, in particular, the level of spending already has reached such a high level that even some drop-off would still permit

the stock of equipment to grow at a good clip. On the structures side, conditions have improved considerably in the commercial real estate market; notably, office vacancy rates have declined substantially. We therefore believe that overall NRS spending will rise moderately further over the next two years.

In the housing market, residential investment is projected to decline this year and to stabilize in 1998. Single-family starts are down from their peak, but demand appears to have leveled out in recent months. Total starts were at a 1.41 million unit annual rate in the fourth quarter, and we expect only a modest slippage from that rate in 1997--as you can see in the little table. Mortgage rates over the next two years are expected to be about the same on average as in 1995 and '96. But smaller gains in income should trim demand gradually--pushing starts down still further next year. The projected level of starts is still fairly high relative to estimates of what might be called for by demographic trends. But affordability is also high in the single-family market, and we believe this can continue to buoy activity for a while longer. I might note that the January Michigan survey showed perceived homebuying conditions to be the best in 2-1/2 years.

Turning to the next page, total government purchases (the black line) are expected to record only modest growth. In the federal sector (the red line), shutdowns and erratic procurement have caused gyrations in the past couple of years. But the trend is still negative. Meanwhile, state and local sector finances look good overall; however, spending is expected to remain cautious.

Net exports have trended down in the 1990s. We are anticipating that the negative contribution to GDP growth from this

sector will increase this year before moderating in 1998. Ted will be discussing this pattern in a few minutes.

The final component of GDP--inventory investment--is a neutral factor in the outlook. Inventory-sales ratios are low in the aggregate--indeed, if the advance GDP numbers for the fourth quarter are correct, the ratios are a touch lower than anticipated in the Greenbook. We expect stocks to grow fairly steadily, at about the same pace as sales, making no net contribution to GDP growth.

Even though output growth is expected to slacken, it remains above potential and the pressures in labor markets are projected to mount. In my first chart, I noted that the unemployment rate was projected to run a shade lower than in the late 1980s, when inflation flared up. The top two panels of chart 6 provide a check on the relative degree of tightness. As you can see, both the help wanted ad index and survey evidence on households' perceptions of job availability tend to confirm the recent readings from the unemployment rate.

But, is it clear that, even if our GDP path is correct, the labor market will tighten further as we've predicted? This appears to be an important difference between our forecast and those of many outside analysts, who don't anticipate the decline in unemployment that we have--even though their output growth predictions are similar. The two middle panels highlight a couple of key factors in our thinking. First, on the left, we have extrapolated the recent upturn in labor force participation, on the assumption that the perceived better job availability and rising real wages will attract more potential workers. In addition, welfare reform is likely to provide some boost to participation, though how fast that will show up is far

from clear. Obviously, in past years, the participation rate rose much faster than we are projecting, but that was before the rate for women had gotten so close to that of men. We could see a greater surge, which would tend to hold up the unemployment rate, but we think the risks are reasonably balanced.

At the right is our forecast of productivity. We still don't have the official estimate of fourth-quarter output per hour, but it is apparent that the increase was much greater than we predicted. However, we think that merely makes more plausible our judgment that one shouldn't take at face value the very weak trend in the data of the prior few years. We are, if anything, more comfortable now with our forecast that productivity will grow about 0.8 percent per year in 1997 and '98. Although that would be down from what was evidently a gain of about 1.2 percent last year, it is just below our revised assumption for the underlying, cyclically adjusted trend rate.

In sum, we don't believe greater participation or productivity growth is likely to prevent labor demand from pressing harder on labor supply. As you can see in the bottom panel, this pressure evidently has begun to leave its mark on wages. I've shaded the periods when unemployment is below our estimates for the NAIRU--6 percent in the late 1980s, and 5.6 percent recently. The wage and salary component of the ECI (the black line) accelerated considerably last year, boosted in part by the minimum wage hike, and the benefit component stopped decelerating. Indeed, on a quarterly basis, there was some sign of acceleration in benefits.

The pickup in compensation gains this year will be exacerbated by another increase in the minimum wage, and perhaps by a lagged effect of last year's acceleration in the total CPI. In 1998,

we project only a small further increase in compensation gains, in the absence of further minimum wage shocks and in light of this year's lower CPI inflation. One identifiable upside risk, especially in 1998, is that various pressures in the health care sector will manifest themselves in a considerable hike in the premiums charged employers, who may not be able to offset those cost increases quickly.

Labor cost increases are the key element in our price outlook. As you can see at the top of chart 7, pressures on physical capacity in manufacturing are not extraordinary. The capacity utilization rate is just a little above the historical average and vendor delivery performance, which typically mirrors the utilization rate, is also in the neutral range.

One factor keeping price pressures down is the availability of imports at attractive prices. As you can see, non-oil import prices have been falling and are expected to continue doing so gradually for a while longer; that is projected to turn around by next year, however, and import prices become a factor pushing up core inflation. Meanwhile, as I noted earlier, the supply-demand balance in the food and energy markets is expected to help hold down overall inflation.

The bottom panels show the resultant relative movements in the total and core CPIs. Because of the favorable movements in food and energy prices, the overall CPI is projected to decelerate substantially this year. Moreover, although it picks up in 1998, the rate of overall CPI inflation continues to be held down by subdued food and energy price increases. In contrast, the core CPI accelerates from year to year as rising labor costs are passed through in an environment of high resource utilization and lessened

competition from import prices. I might note that the relative movement of import prices would appear to be one of the reasons why inflation picked up more quickly when labor markets tightened in the 1980s; as you can see in the middle left panel, import prices were moving up fairly rapidly in that period. The data panel at the lower right shows the annual inflation figures, including, in parentheses, the numbers adjusted for the estimated effects of technical changes in the indexes.

Ted will now discuss some external influences in the outlook for the economy.

-----

E.M.Truman  
February 4, 1997

FOMC Chart Show Presentation - International Developments

The first international chart summarizes in the top panel the staff projection for the external sector. As shown at the top left, real net exports of goods and services, the current account balance, and the goods balance are all projected to resume their declines following sharp, but temporary, reversals in the fourth quarter of last year. Those reversals were occasioned by the confluence of special factors, such as larger shipments of power generating equipment to Brazil and China, with residual seasonality in the data. Last Friday, of course, BEA estimated that the reversal in real net exports in Q4 was even larger than what the staff estimated in the Greenbook.

As shown in the panel at the right, the current account deficit as a percent of GDP widens to 2-1/2 percent by the end of the forecast period -- a level last recorded on an annual basis in 1988.

Three major factors in this outlook are outlined in the box in the middle of the chart. First, although growth abroad is expected to pick up a bit further this year, and should exceed U.S. growth by a substantial margin, the differential will be insufficient to narrow the deficits. The reason is that the income elasticity of our demand for imports exceeds the elasticity of demand for our exports by a factor of more than two and the initial level of imports is greater than the level of exports.

Second, the recent strength of the dollar is projected to be sustained for at least a while longer. We expect that the dollar ultimately will turn down as the market reacts to rising U.S. external deficits and, perhaps, inflation. As a consequence, U.S. inflation and aggregate demand will be damped in the near term, but later on inflation will be boosted and the negative effects on aggregate demand will be diminished.

Third, the price of oil is projected to decline about five dollars a barrel from its recent peak, but the influence of this decline on the current account balance will be offset in part by a continuation of the rising trend in the quantity of imported petroleum and products.

The bottom panel lists five issues in the forecast of the external sector that I will address:

How realistic is our projection for growth abroad and what would be the quantitative consequences of error?

What are the risks to the dollar and in international financial markets?

How is our outlook for inflation influenced by the dollar and import prices?

What would be the consequences if oil prices remain elevated?

Why are we projecting weak net exports?

Chart 9 examines the first of these questions -- risks to the foreign outlook. As shown in the top left panel, our projection assumes that fiscal policy will be a restraining influence on growth in each of the foreign G-7 countries over this year and next. The restraint, as measured by staff estimates of the cumulative change of the structural budget balances in these countries, ranges from three-quarters of a percentage point of GDP in the United Kingdom and France to five percentage points in Italy. In Italy, Japan, and Germany, fiscal restraint will be greater than over the past two years; indeed, in Japan fiscal policy shifts from ease to restraint, while it was neutral in Germany over the past two years. As is shown in the right panel, we are assuming that this fiscal restraint will continue to be counteracted by the effects of monetary ease, as reflected in current and projected relatively low ten-year real interest rates and very low three-month real interest rates.

As is shown in the middle left, we are projecting that this combination will contribute to a slight rise in real growth in Western Europe and a more substantial increase in Canada this year that will extend into 1998. By contrast, in Japan fiscal restraint and financial headwinds will slow the economy this year despite a positive contribution from real net exports of roughly a percentage point. Meanwhile, in Mexico the expansion is expected to continue in 1997 under the influence of relatively low real interest rates and a modest fiscal stimulus, but to slow somewhat in 1998; growth is projected to continue at its recent pace on average in the rest of Latin America. In the rest of Asia, we expect a

small rise in growth this year after the effects wear off of last year's modest policy tightenings, currency appreciation against the yen, and weak export demand. In the aggregate, as depicted by the red bars in the right panel, foreign growth is projected to be slightly less than four percent in 1997 and 1998. However, with U.S. growth slowing, the gap increases to about 1-1/2 percentage points.

The panel at the bottom left compares the staff forecast with those published in *Consensus Forecasts*, augmented by other sources for Latin America in 1998. As you can see, we are projecting faster growth in Japan and Mexico this year and slower growth in other Asia, but the totals, at the bottom, are essentially identical for both years.

As shown at the right, over the past 16 years the average, annual absolute error in the staff forecast for global growth, based on the forecast for the January or February Committee meeting, has been about one half percentage point. Everything else being equal, we estimate that such an error this year would add to or subtract from U.S. real GDP about a half a tenth over the four quarters of 1997.

Turning to risks to the dollar and in international financial markets, the top left panel of the next chart shows the real trade-weighted value of the dollar against other G-10 currencies and the real long-term interest rate differential, including our forecasts. As you can see, these two variables have tended to move together over the past several years. Our assumption of a slight upward drift in the interest differential suggests one source of upside risk to our projection for the dollar. However, we think it is more likely that the dollar will come under downward pressure over the forecast period under the weight of the widening of our current account deficit and a projected turnaround in the Japanese surplus. We are far from confident about this forecast, especially in terms of timing and magnitude, but we think that the risks lie in this direction.

What happens to the dollar is only one possible uncertainty in international financial markets over the next couple of years. Some of the dollar's recent strength might have been caused by the sense of over-exuberance, extrapolative expectations, and greater foolery that may be affecting many

financial markets -- exchange markets generally, European equity and bond markets in the run-up to EMU, and emerging markets in the wake of the more-rapid-than-expected Mexican recovery and the continuation of low interest rates in industrial countries. The remaining panels on this chart illustrate some of these trends.

The top right panel shows price trends in equity markets over the past five years. The U.S. market (black line) has risen by almost 90 percent mostly in the past two years; European markets (red line) have risen more than 80 percent on average; an average of selected emerging markets (blue line) rose sharply through early 1994, collapsed in the wake of the global rise in bond rates in 1994, fell further in the wake of the Mexican crisis, but has since almost recovered to about its previous peak. Meanwhile, the Japanese market (green line) has been in the doldrums.

In terms of valuation measures, the middle panels, P/E ratios (based on trailing earnings) shown at the left appear to be high in both the United States and Europe. Mike has noted some of the arguments justifying the high U.S. P/Es. In Europe, investors may be anticipating a rise in earnings associated with EMU, an acceleration in economic activity, and corporate restructuring, and some markets have been receiving increased inflows of pension funds. Nevertheless, except for the early 1990s when rebounds in earnings were expected, these ratios are as high as we have seen over the past 20 years, surpassing the 1987 peak for Europe and equalling that peak for the United States. It is notable that P/E ratios for Hong Kong and Singapore are not high in historical terms; they are about at their average levels for the past 20 years. Price-to-book value ratios, depicted on the right, show the same general picture only more so: historic highs for the United States and Europe, and historical averages for Hong Kong and Singapore.

Turning to bond markets, the bottom panels, the decline in ten-year government bond yields among industrial countries from their peaks in 1995 has been phenomenal, ranging from 5 percentage points or more in the three formerly high-yielding countries in Europe to a more-moderate percentage

point or so in the United Kingdom and United States. There has been a remarkable convergence of long-term nominal interest rates, predicated at least in Europe on the establishment of a European Central Bank with a broad membership from the start.

Not shown are the dramatic declines in spreads of stripped yields of Brady bonds relative to U.S. Treasuries from their peaks following the Mexican crisis. Shown at the right is one result of the general decline in bond yields in industrial countries and optimism about emerging markets: a jump in international bond issuance by developing countries to a level last year that was about two-thirds higher than the previous peak in 1993 when U.S. interest rates also were so very low.

It is easy to point to risks in these markets. It is more difficult to identify the most likely shock: economic (a large actual or anticipated increase in U.S. interest rates), political (a bungled takeover of Hong Kong by China), or a combination (a collapse of plans to move forward with the third stage of EMU on January 1, 1999). One can only speculate about the implications of a severe shock for financial markets and real economic activity. In terms of effects on the dollar, history offers little guide. Following the stock-market break in 1987, the dollar continued to fall. The dollar rose following the ERM bust-up in 1992, fell when bond rates rose in 1994, and fell further in the wake of the Mexican peso crisis.

Chart 11 focuses on an issue about which we can get a bit more of a fix -- the relationship between exchange rates, import prices, and U.S. inflation. Prices of U.S. imports are influenced by a number of factors, microeconomic as well as macroeconomic. At the macro level, it is useful to think of our import prices as being determined by foreign inflation rates (which have been low and declining) and dollar exchange rates. The top four panels in this chart illustrate those relationships over the past five years for U.S. imports from two groups of countries and two individual countries -- the European Union, Japan, Canada, and the four Asian so-called newly industrializing economies. The black lines in the panels show four-quarter changes in prices of U.S. imports of manufactured

goods. On balance, the dominant influence on them has been dollar exchange rates (the red lines), although there has been considerably more movement in exchange rates with respect to the EU and Japan than for Canada and the NIEs. CPI inflation abroad (the blue lines) has been relatively quiescent.

Against this background, the bottom panels present estimates of the influence of movements in the dollar, working through import prices, on the rate of inflation in CPI goods excluding food and energy. The panel at the left shows in the solid lines the paths of actual and projected inflation in prices of core goods and of non-oil imports and in the dotted lines a simulation of their paths on the assumption that the dollar had stayed at its low reached in Q2 1995. The dollar's appreciation is estimated to have held down core goods inflation by about four tenths in the fourth quarter of last year. The panel at the right shows in the dotted lines similar simulations based on the hypothesis that the dollar stays at its recent high through the forecast period. The projected depreciation of the dollar in 1998 is estimated to add about two tenths to core goods inflation at the end of that year.

The next chart examines another influence on U.S. inflation: oil prices. As shown in the top left panel, nominal oil prices have been creeping up since early 1994 and have recently reached a peak that was exceeded over the past decade only briefly in the context of the Gulf War. The panel at the right provides more perspective on oil-price developments over the past two years. It shows both the spot price of West Texas Intermediate and the implied volatility as a percent of the price. The implied volatility over the past year exceeded that in 1995 by a large margin, but was not significantly different from the average of the previous five years.

In our forecast, we continue to assume that oil prices will decline further from recent peaks as the market finally adjusts to the partial resumption of Iraqi shipments and additional production comes on stream from the North Sea and non-OPEC developing countries. However, in light of recent trends, we have again postponed a full return to a lower level of oil prices, and that level is about

\$1.25 per barrel higher than we projected that it would be a year ago. The futures price of WTI for May of this year is roughly one dollar below the current spot price which, in turn, is down about two and a half dollars from the recent peak in early January.

While our assumption about oil prices helps to impart some downward pressure on the overall price level, one would be justified in being skeptical about when the decline will be complete, how enduring it will be, and whether oil prices instead might continue to trend higher. To illustrate some of the implications of an alternative oil price scenario, we ran the staff's combined model in its adaptive expectations mode. The results are shown in the bottom portion of the chart. The baseline is the Greenbook forecast extended to 1999 as presented in the Bluebook. In the alternative, we hypothesized that the price of imported oil would remain at its level in Q4 1996 rather than decline by \$5 per barrel. With respect to monetary policy, we assumed no change in the funds rate path in the United States; foreign G-7 countries follow Taylor-rule policies.

In this alternative, U.S. CPI inflation is about 4 tenths higher than in the Greenbook baseline this year, declining to a tenth higher in 1999. Growth of U.S. real GDP is essentially unchanged because the stimulus from a lower real funds rate and an even weaker dollar offsets the tax-like effect of increased spending on imported oil. Meanwhile, inflation on average in the foreign G-7 countries is also four tenths higher this year, largely due to the effect in Japan. Real growth is depressed on average this year in the foreign G-7 countries (especially in Canada and Japan), but bounces back relative to baseline in 1998, reflecting the influence of monetary policies acting under Taylor rules.

The last international chart summarizes our projection for real net exports of goods and services. As is shown in the top panel of the chart, we are projecting that imports of goods and services (the red line) will expand faster than exports (the black line) this year, and that growth rates will converge by the end of 1998.

As Mike has indicated, we are projecting a substantial negative contribution to real GDP in

1997, on the order of three-quarters of a percentage point [four tenths on a year-over-year basis], in contrast to a much smaller deterioration reported in the *Blue Chip* consensus, to say nothing of the improvement shown in some forecasts.

A reasonable question is how do we account for this apparent discrepancy. The simple answer can be summed up in two words: history and arithmetic. The staff's growth forecasts do not differ significantly from the general consensus, and our outlook for the dollar eventually to decline has no influence on real net exports in 1997. If we assume that historical relationships will continue to prevail, the arithmetic embodied in such relationships, combined with our starting deficit, guarantees a substantial negative external contribution to real GDP in 1997.

To help illustrate my point, the bottom panels use model equations to decompose changes in actual and projected exports and imports into three parts. The black bars present the four-quarter changes, in terms of chained 1992 dollars, in exports (the middle panel) and non-oil imports (the bottom panel) of goods and services. The red bars show estimated contributions of increases in income. The blue bars show estimated contributions of relative prices. The green bars show equation errors for the historical period and differences from our judgmental forecast for the projection period.

Through most of the period shown income effects dominate price effects. Moreover, because of differences in elasticities and the base levels of exports and imports of goods and services, a comparison of the income effects (the red bars in the two panels) for the forecast period shows that faster growth abroad boosts exports by less than the more moderate growth in the United States boosts imports. It is possible that these historical relationships have changed. There is some evidence that they do change over time, but they change only slowly, and I would hesitate to predicate a forecast for 1997 on such a proposition.

Mike Prell will complete our presentation.

I'll be very brief. Your final chart summarizes the forecasts that you submitted for use in the Humphrey-Hawkins report. Your forecasts of real GDP growth are somewhat below ours. Consequently, your unemployment rates are higher. But your CPI predictions also are higher than ours, putting you closer to the consensus than we are.

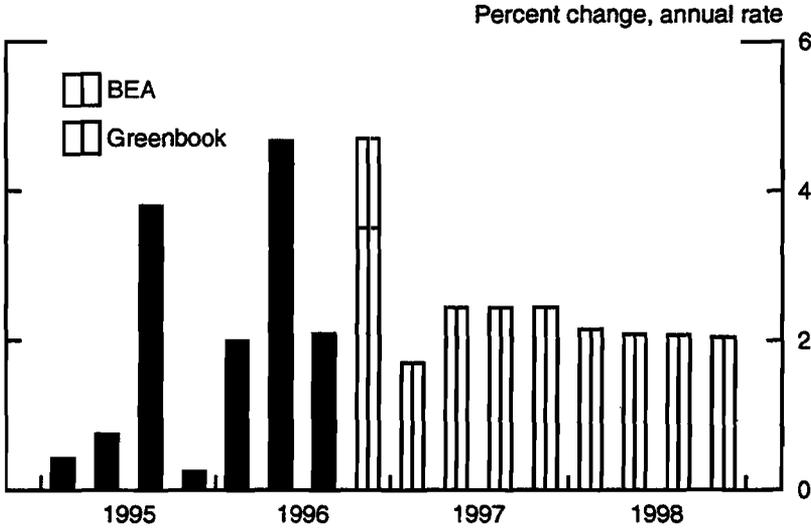
STRICTLY CONFIDENTIAL (FR) CLASS I-FOMC

*Material for  
Staff Presentation to the  
Federal Open Market Committee*

*February 4, 1997*

Chart 1  
**Forecast Overview**

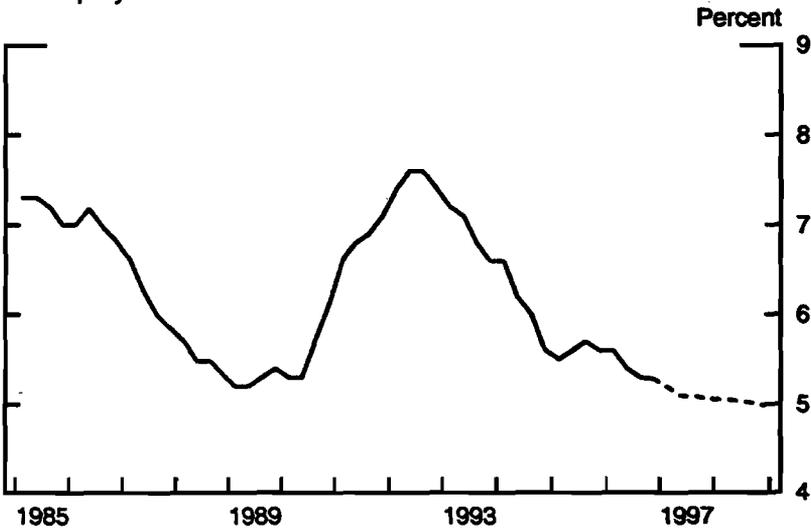
Real Gross Domestic Product



Q4/Q4 Percent Change

1995	1.3
1996	3.4 (3.1 GB)
1997	2.3
1998	2.1

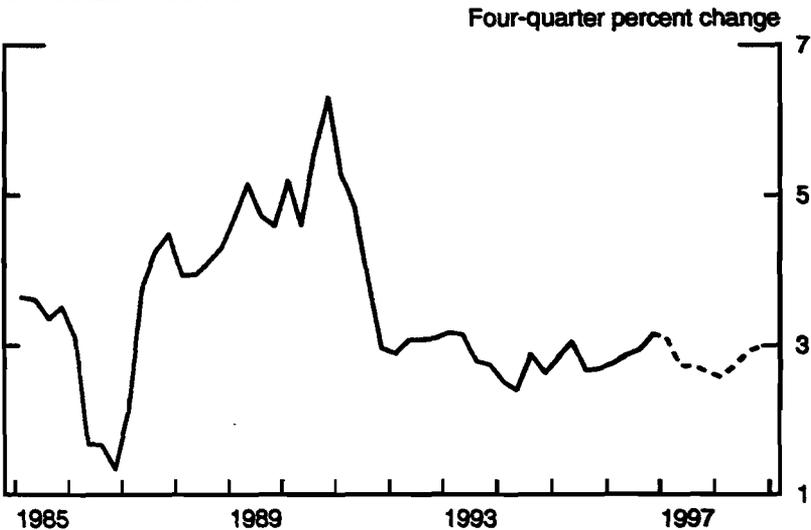
Unemployment Rate



Q4 Average

1995	5.6
1996	5.3
1997	5.1
1998	5.0

Consumer Price Index



Q4/Q4 Percent Change

1995	2.7
1996	3.1
1997	2.6
1998	3.0

## Policy Assumptions

### Monetary Policy:

- Federal funds rate remains at 5-1/4 percent.
- Probably implies small decline in real short-term rate.

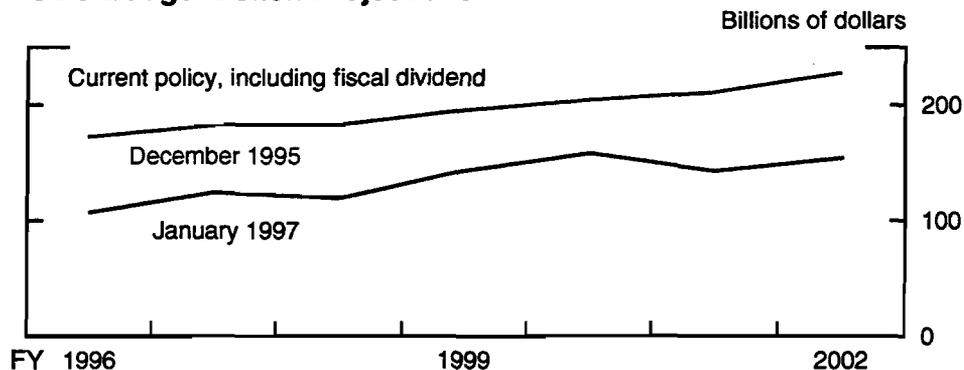
### Fiscal Policy:

- No balanced budget amendment.
- Agreement on a plan to balance federal budget by FY2002.
- Implies on-going, moderate fiscal restraint.

### Why budget deal this year, after last year's failure?

- Two sides were not far apart when negotiations broke down last year.
- Task smaller now, given revised budget outlook.

### CBO Budget Deficit Projections



- Better setting for bipartisan action: Congressional GOP learned political advantages of compromise, while President says balancing budget is a top priority.

### But it is not a sure thing

- Partisan tensions have not disappeared.
- COLA adjustment is politically scary.
- Discretionary spending already cut deeply.

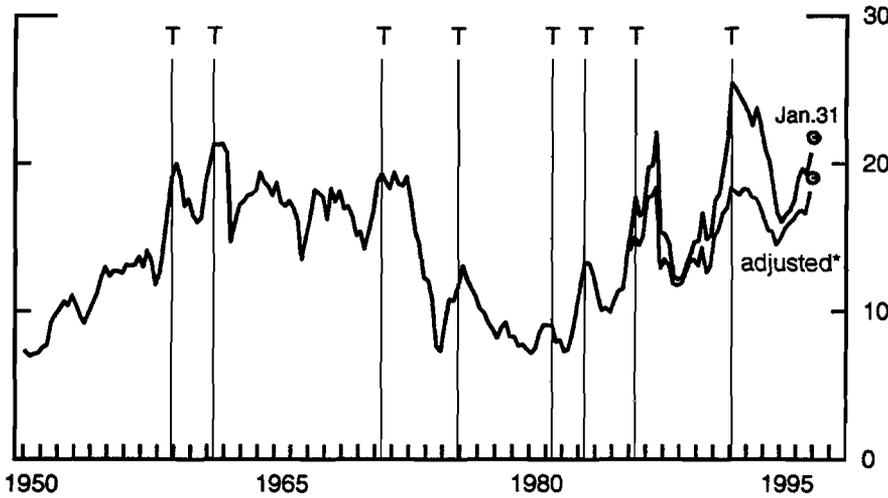
### Risks

- Even if accomplished on paper, could involve heavy use of gimmicks.
- Risks clearly biased toward less fiscal restraint than we have assumed.

Chart 3

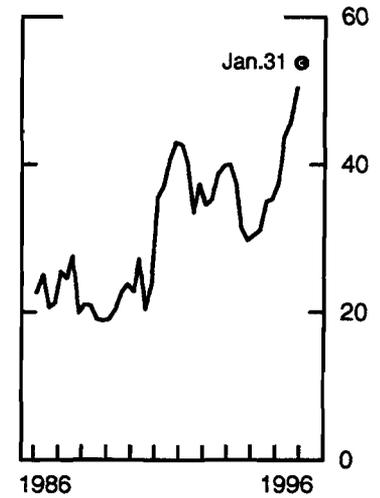
# Financial Market Euphoria

Price-Earnings Ratio - S&P 500



\* Source: Goldman Sachs T=Trough in earnings

P-E Ratio - NASDAQ

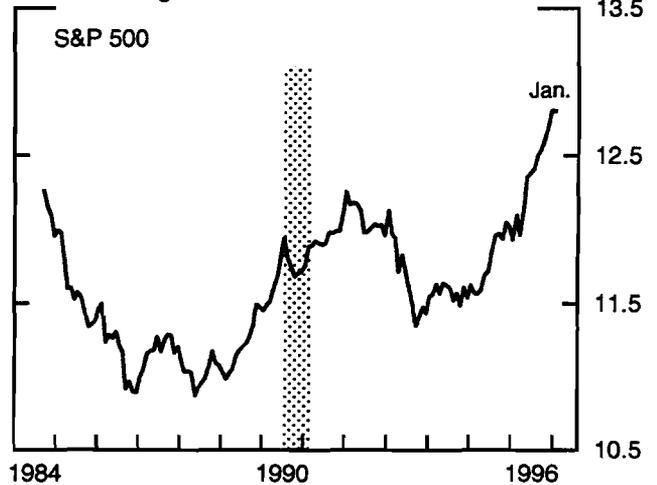


Inflation and P-E Ratios\*

CPI	Average S&P 500 P-E
Less than 3.5%	18.3
3.5% - 4.5%	14.8
4.5% - 5.5%	14.8
5.5% - 6.5%	13.9
6.5% - 7.5%	9.9
Greater than 7.5%	8.9

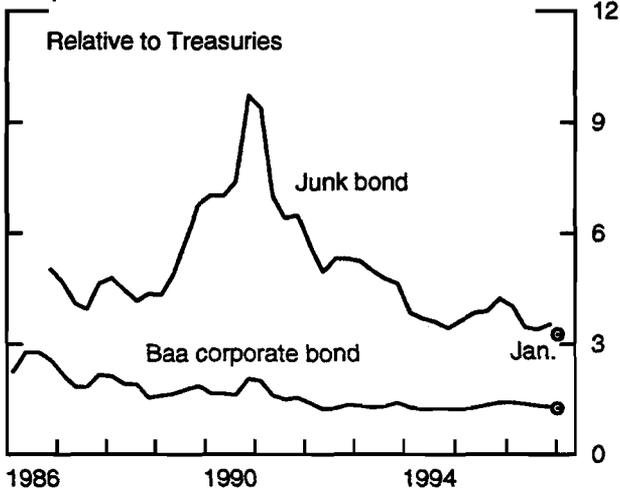
\* For the period 1950-1996.

Analysts' Expectations for Three-to-Five Year Earnings Growth



Source: I/B/E/S.

Risk Premia on Corporate Bonds



Rate Spreads on Business Loans at Banks

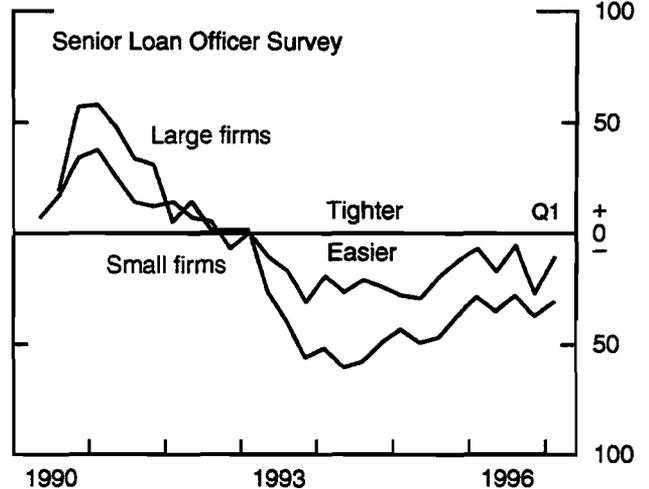
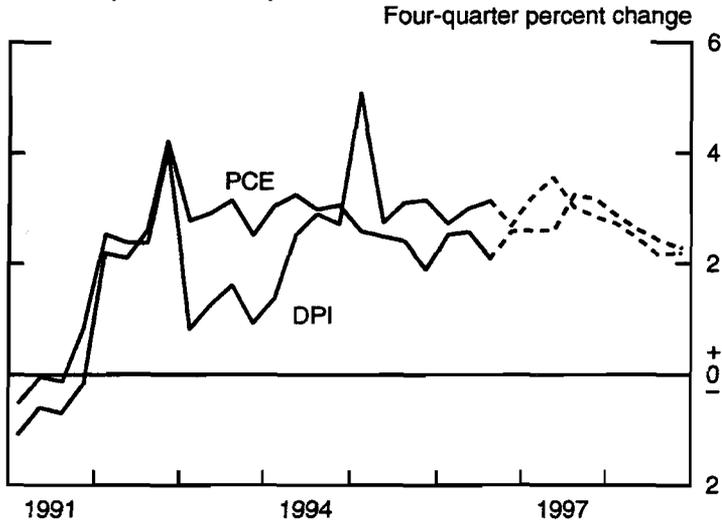


Chart 4

## Sectoral Summary

Consumption and Disposable Income



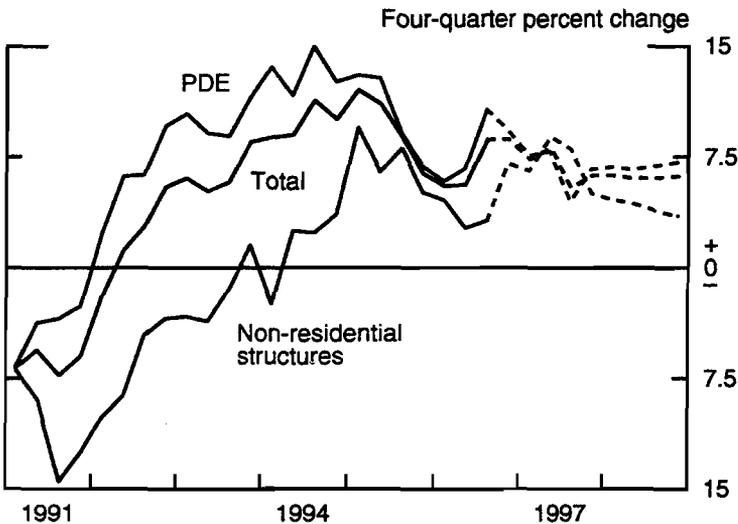
**Near-term pluses:**

Income growth has been strong.  
Wealth up sharply.  
Sentiment high.

**On-going and future minuses:**

Forecast anticipates only modest further rise in stock prices this year.  
Wealth/income declines in 1998.  
Debt burdens and tighter credit card lending.

Business Fixed Investment



Financial market conditions favorable.

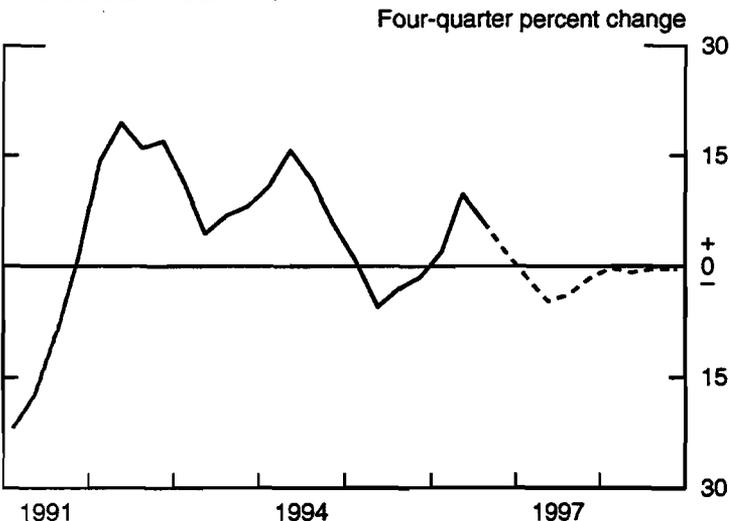
Internal cash flow growth slackening.

Declining prices, technological advances will continue to drive gains in computers, communications equipment.

Other PDE flat.

Commercial real estate market firming; office vacancies down.

Residential Investment



**Housing Starts (millions)**

	'95	'96	'97	'98
Singles	1.08	1.16	1.09	1.06
Multis	.28	.31	.29	.28
Total	1.35	1.47	1.38	1.34

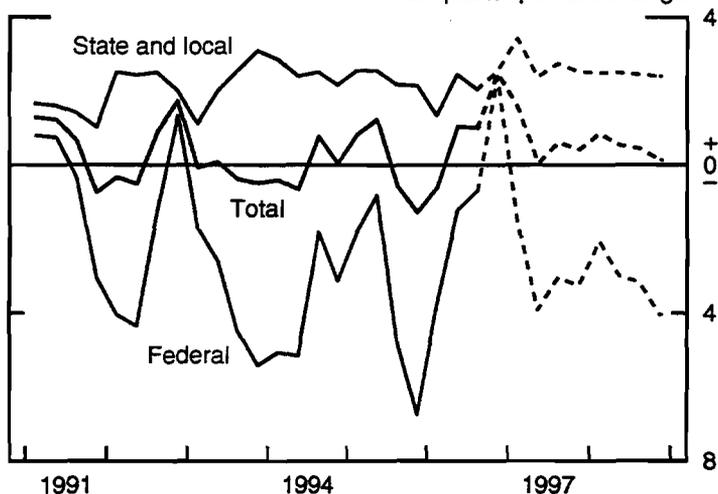
Mortgage rates in '97-'98 expected to be about the same on average as in '95-'96

Projected starts possibly high relative to demographic trends but affordability also high for singles

Chart 5

## Sectoral Summary, continued

Government Consumption and Gross Investment  
Four-quarter percent change

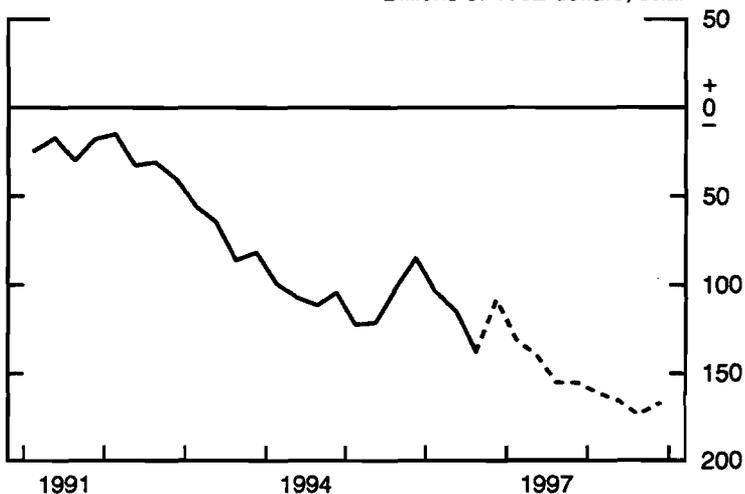


In the federal sector, shutdowns and erratic procurement have caused gyrations.

But trend lower.

State and local finances good overall.

Net Exports  
Billions of 1992 dollars, saar

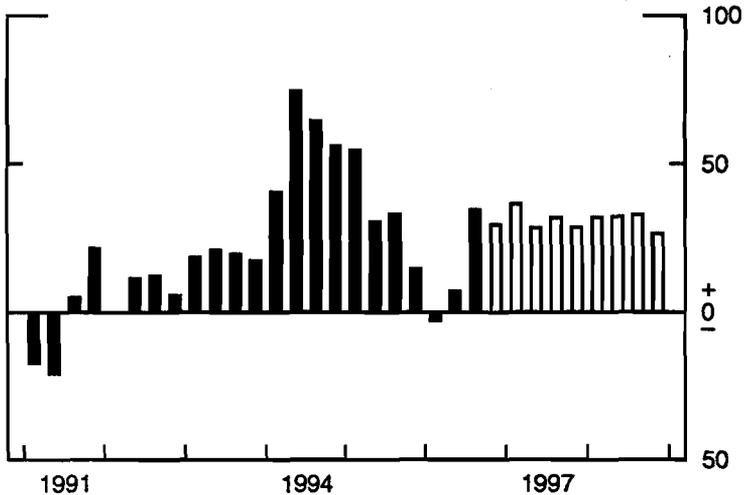


Contribution of Net Exports to GDP Growth, in percentage points

	Q4/Q4	Annual
1995	+0.3	0
1996	-0.3*	-0.1
1997	-0.7	-0.4
1998	-0.2	-0.3

\* -0.2 in BEA advance

Inventory Investment  
Billions 1992 dollars, saar



Inventory-sales ratio currently low.

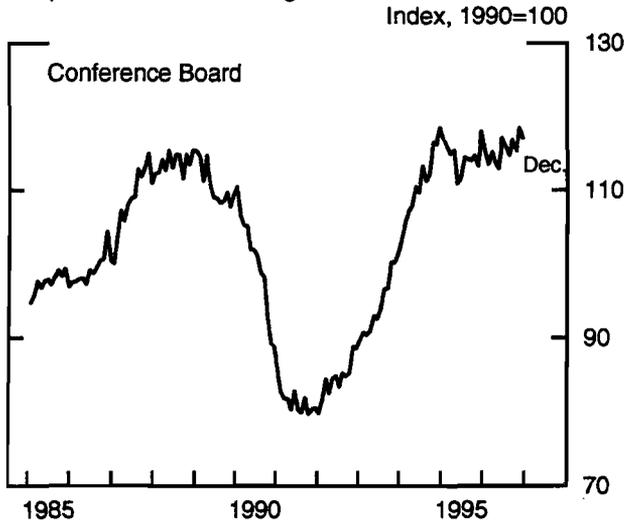
Inventories expected to grow about same pace as sales – no GDP growth effect.

Note: All data chained (1992) dollars, based on Greenbook.

Chart 6

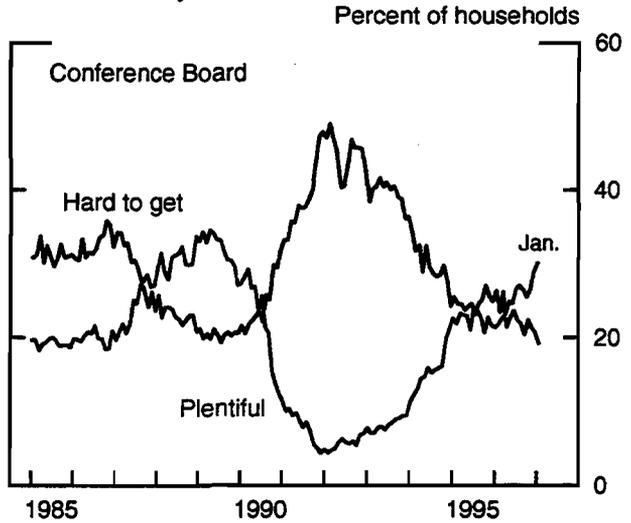
# Labor Market

Help-wanted Advertising\*

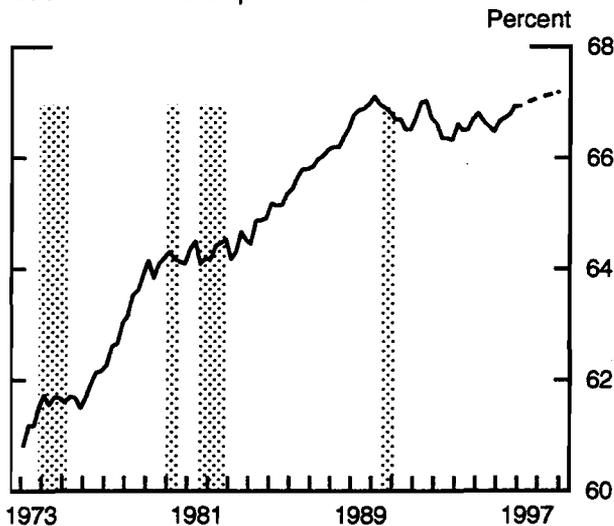


\* Adjusted for newspaper consolidation and use of temps.

Job Availability

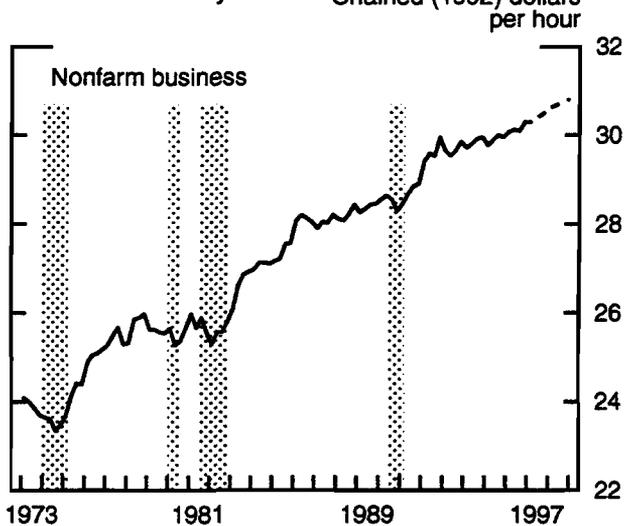


Labor Force Participation Rate\*



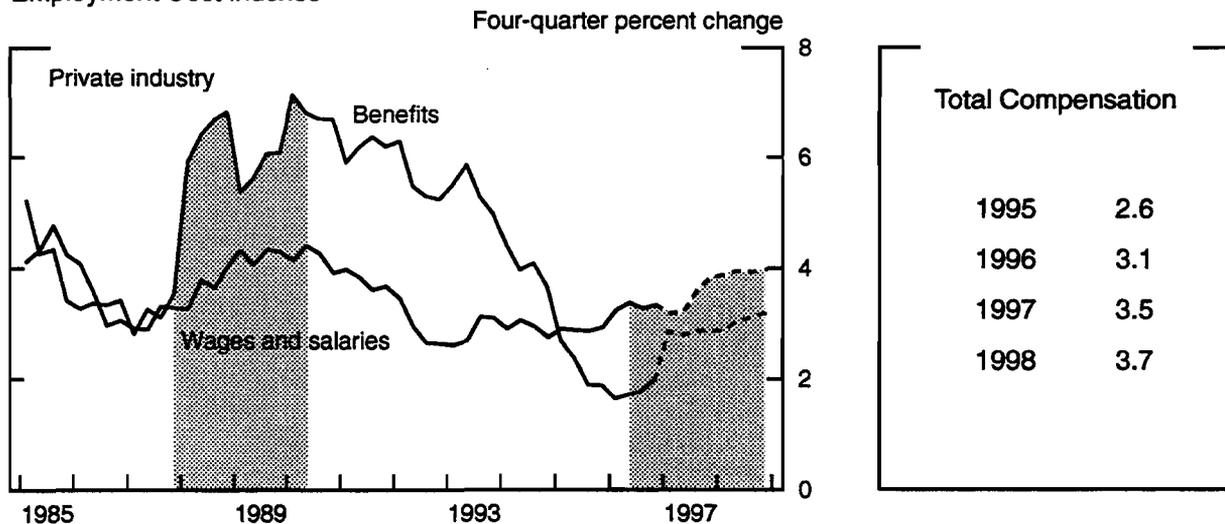
\* Pre-1994 data adjusted for change in CPS.

Labor Productivity



Note: 96Q4 estimate based on BEA advance.

Employment Cost Indexes

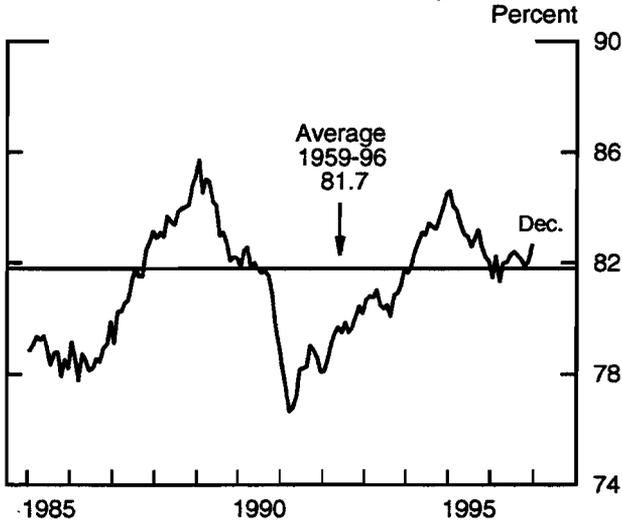


Note: Shading indicates unemployment rate below NAIURU (6 percent in 1980s, 5.6 percent in 1990s).

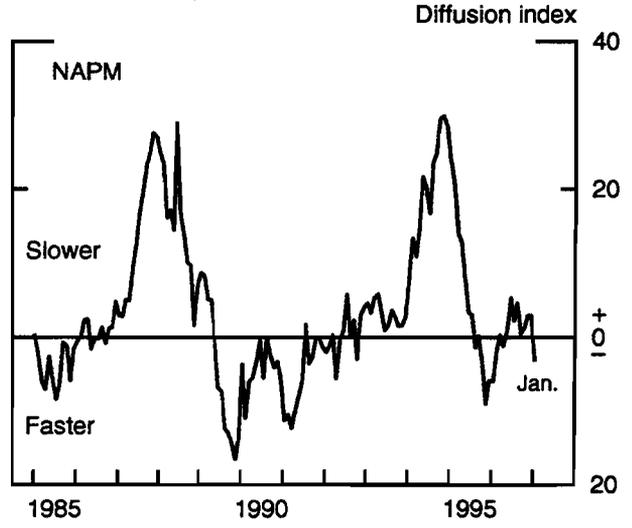
Chart 7

# Prices

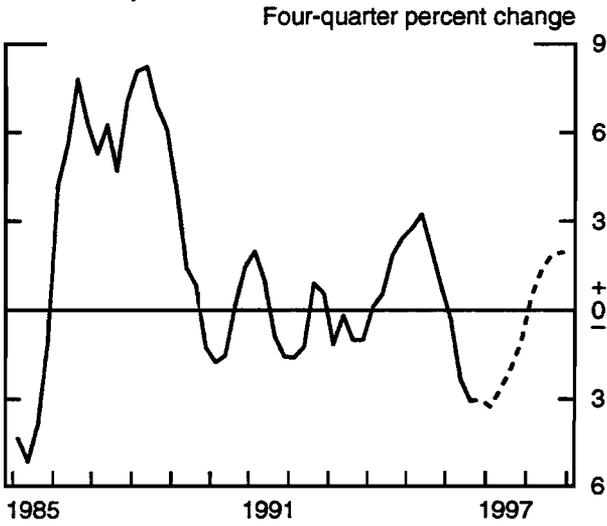
Capacity Utilization in Manufacturing



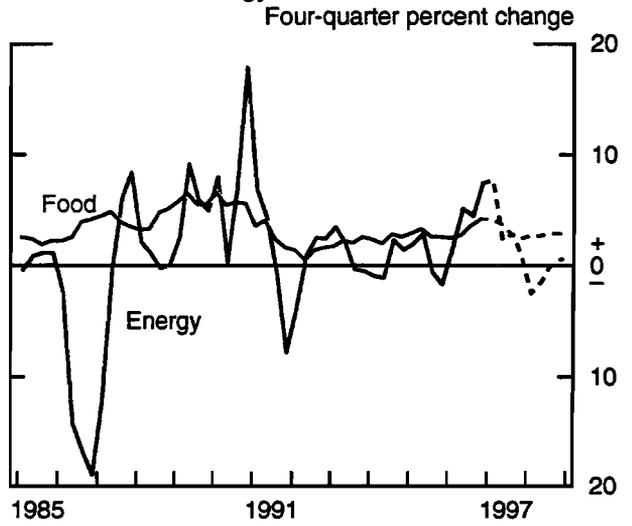
Vendor Delivery Performance



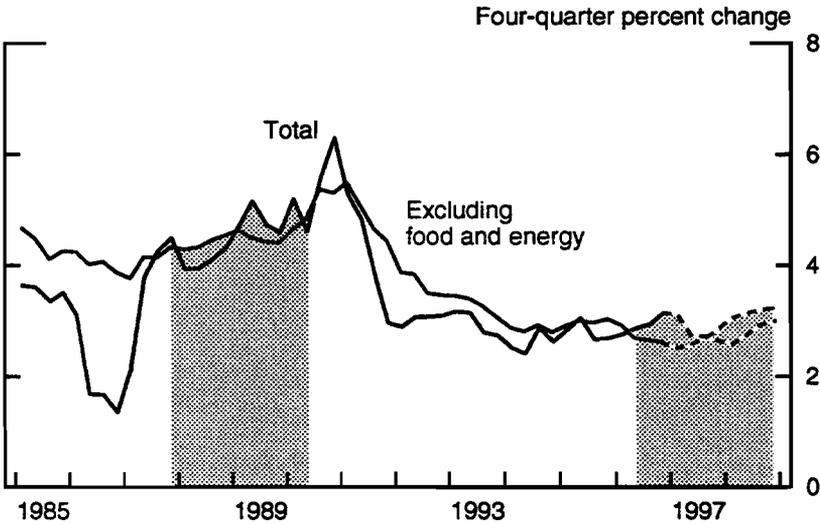
Non-oil Import Prices



CPI Food and Energy



Consumer Price Inflation



Note: Shading indicates unemployment rate below NAIRU (6 percent in 1980s, 5.6 percent 1990s).

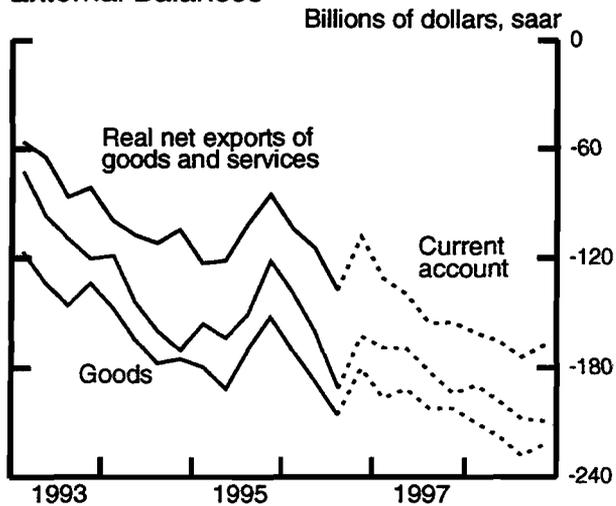
Q4/Q4 Percent Change		
	CPI	CPIX
1995	2.7	3.0
adj.	(2.8)	(3.1)
1996	3.1	2.6
adj.	(3.3)	(2.8)
1997	2.6	2.8
adj.	(2.9)	(3.1)
1998	3.0	3.2
adj.	(3.4)	(3.6)

Note: Numbers in parentheses adjusted for technical changes in indexes since 1994.

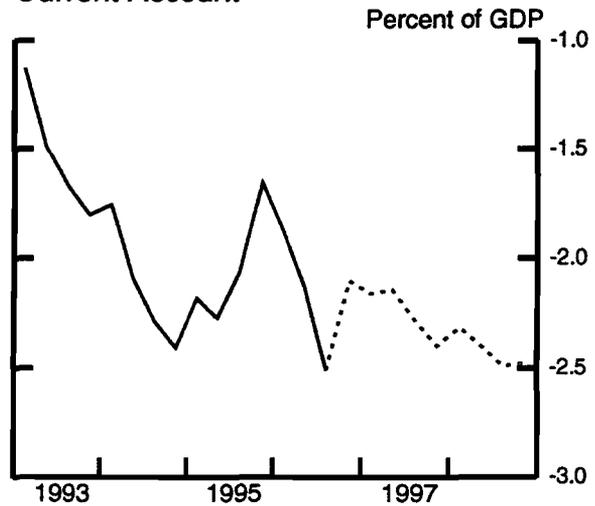
Chart 8

## Forecast Summary -- External Sector

External Balances



Current Account



### Major Factors in the Outlook

1. Pickup in foreign growth insufficient to outweigh U.S. growth, income elasticities, and starting point.
2. Strength of dollar damps inflation and aggregate demand in the near term.
3. Oil price declines \$5 a barrel from its recent peak.

### Issues in the Outlook

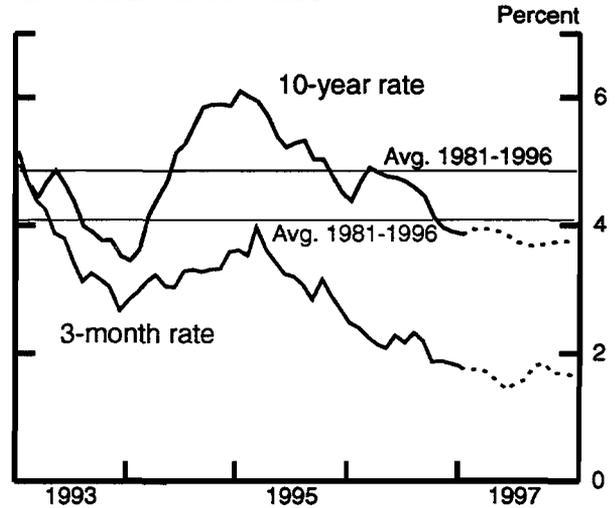
1. Projection for growth abroad.
2. Risks to the dollar and in international financial markets.
3. Inflation and import prices.
4. Consequences if oil prices remain elevated.
5. Projection of weak net exports.

## Foreign Outlook

Fiscal Policy: Change in Structural Balances

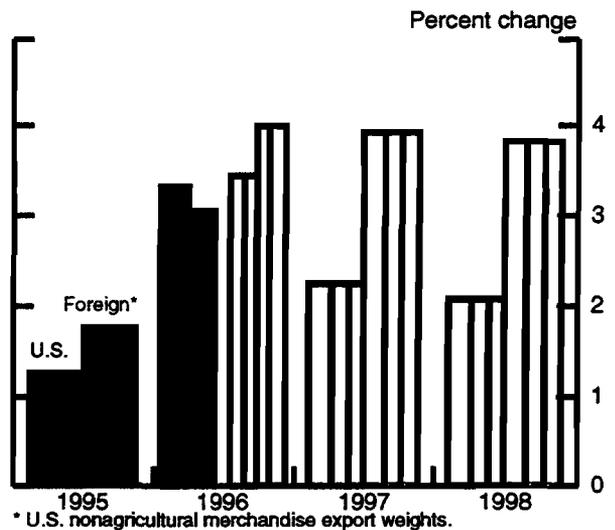
	Percent of GDP	
	Change 1995 & 1996	Change 1997 & 1998
United Kingdom	2 1/4	3/4
France	1 3/4	3/4
Germany	0	1
Italy	1 3/4	5
Japan	-2	1 3/4
Canada	3 1/2	1 1/4

G-10 Real Interest Rates



Real GDP

	Percent change, Q4 to Q4		
	1996	1997	1998
W. Europe	2.2	2.5	2.4
Canada	2.1	3.4	3.2
Japan	2.7	1.9	2.3
Mexico	4.8	4.7	4.3
Other Latin Am.	4.1	3.9	4.0
Other Asia	6.2	7.0	7.0



\* U.S. nonagricultural merchandise export weights.

Forecast Comparison

	Percent change, annual			
	1997		1998	
	Con- Staff	sensus*	Con- Staff	sensus*
W. Europe	2.4	2.5	2.5	2.6
Germany	2.3	2.2	2.3	2.5
Canada	3.2	3.2	3.2	2.9
Mexico	4.9	4.2	4.4	4.2
Other Latin Am.	4.4	4.5	4.0	5.2
Japan	1.9	1.4	2.1	2.3
Other Asia	6.5	6.8	7.0	7.2
<b>Total**</b>	<b>3.8</b>	<b>3.8</b>	<b>3.9</b>	<b>4.0</b>

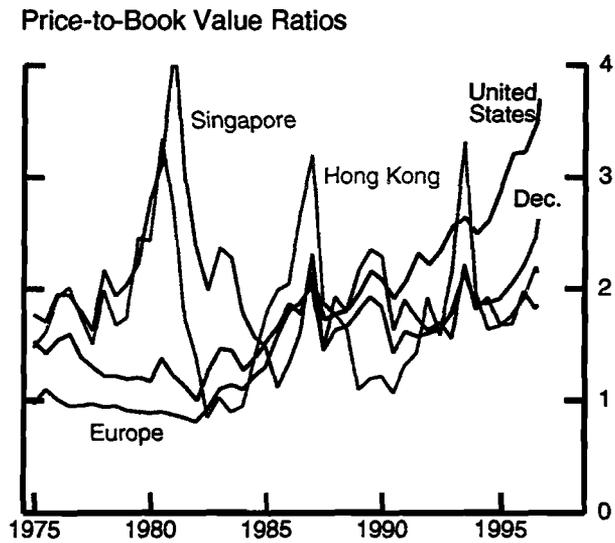
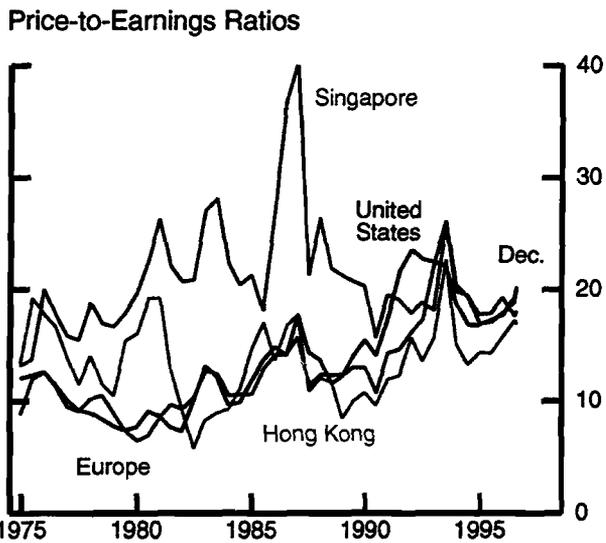
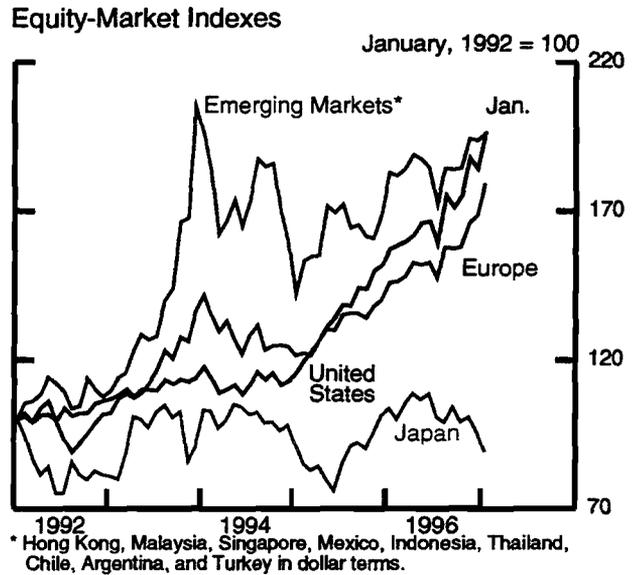
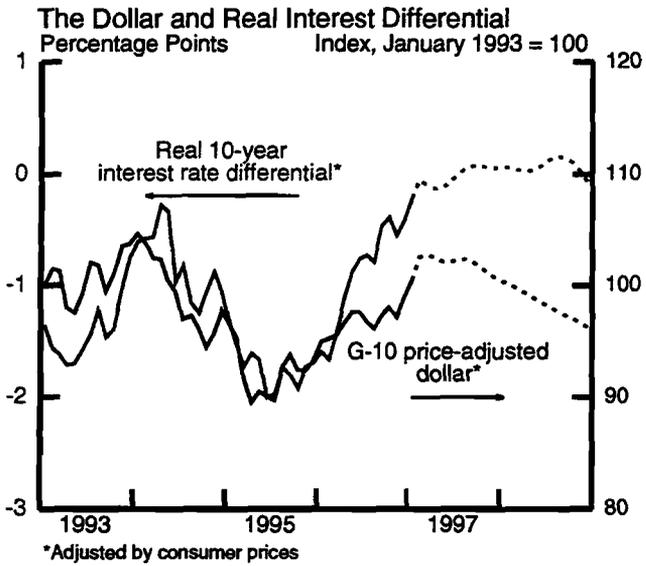
Forecast Errors

Average absolute error in global growth (1980 - 1995):	0.5 percent
<u>Risk to 1997 U.S. Forecast</u>	
Real GDP growth (Q4/Q4):	0.05 percent
Current Account (Q4):	\$6.5 billion

\* Source: Consensus Economics, Inc.; Blue Chip and J.P. Morgan in 1998 for Mexico and Other Latin America.  
 \*\* U.S. nonagricultural merchandise export weights.

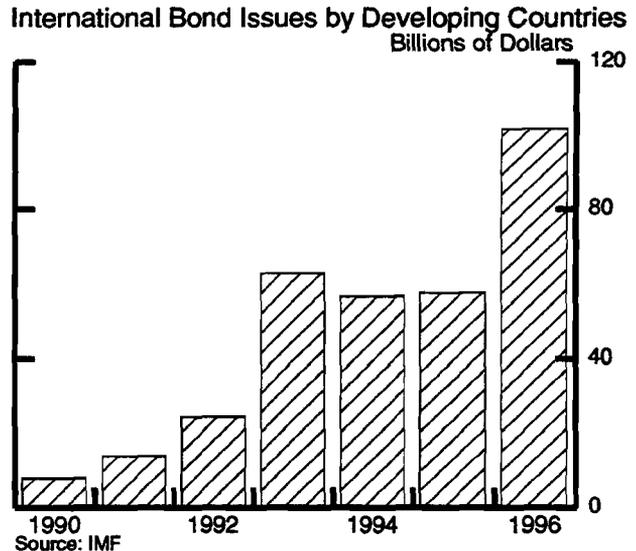
Chart 10

## International Financial Markets



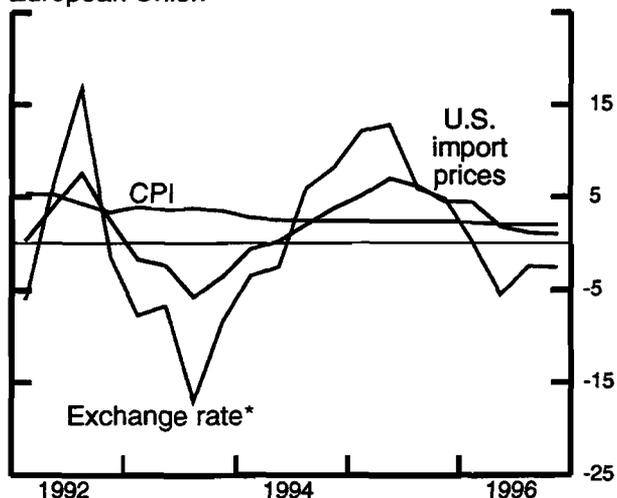
**Bond Yields**

	Decline from 1995 Peak	10-year 2/4/97
Italy	6.57	7.17
Spain	5.95	6.73
Sweden	4.99	6.65
Canada	3.17	6.48
France	2.8	5.58
Japan	2.23	2.42
Germany	2.03	5.72
United Kingdom	1.45	7.34
United States	1.42	6.47



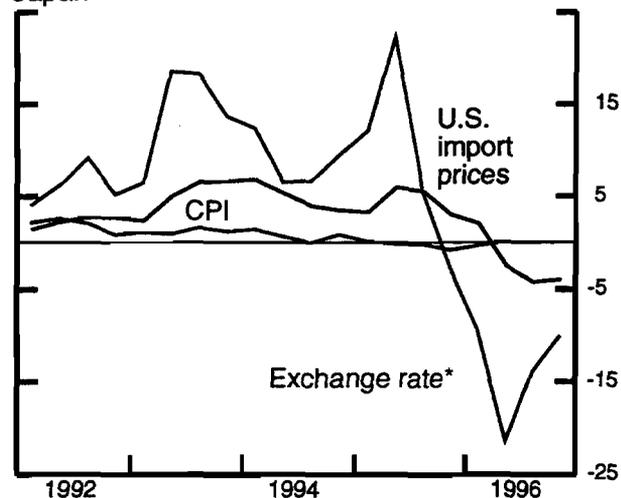
### U.S. Inflation and Import Prices (Four-quarter percent change)

European Union

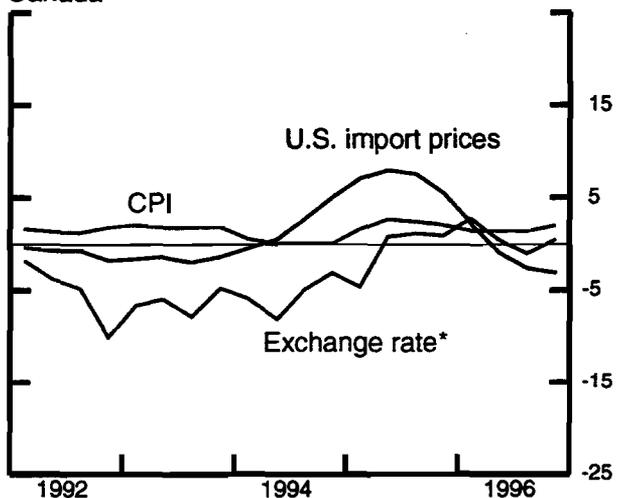


\* Dollars per unit of local currency.

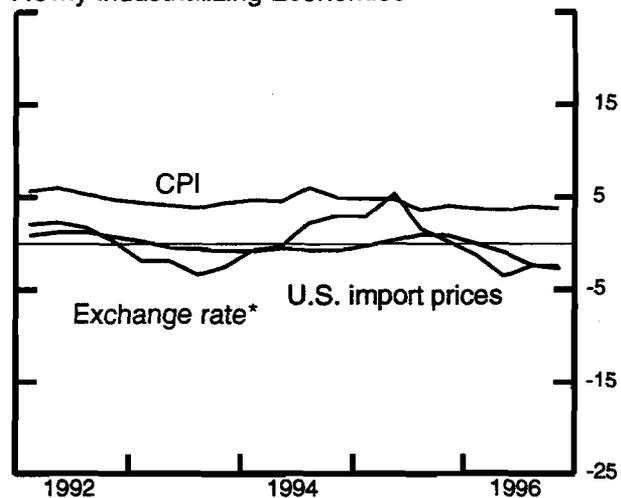
Japan



Canada

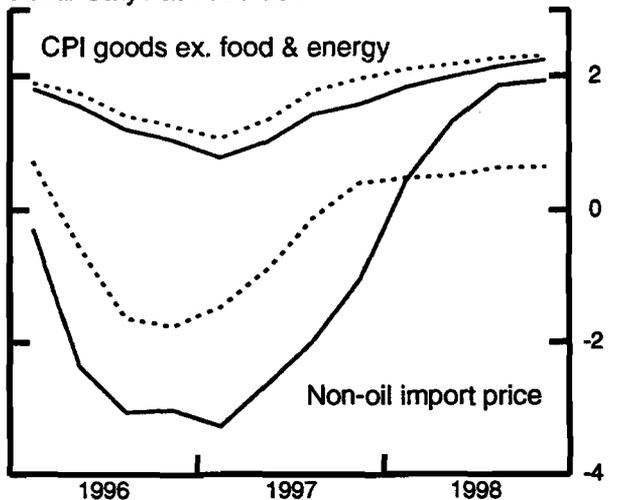


Newly Industrializing Economies \*\*

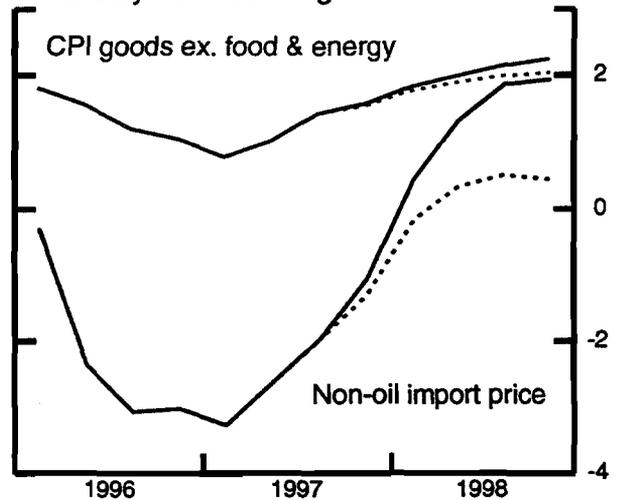


\*\* Hong Kong, Singapore, S. Korea, Taiwan

Dollar Stays at 1995 Low

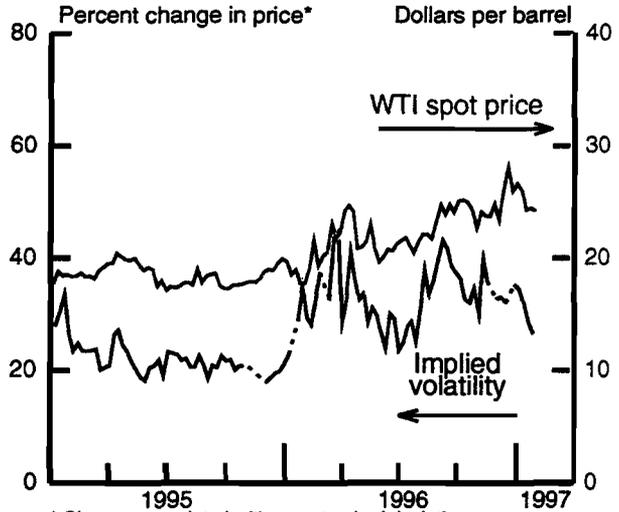
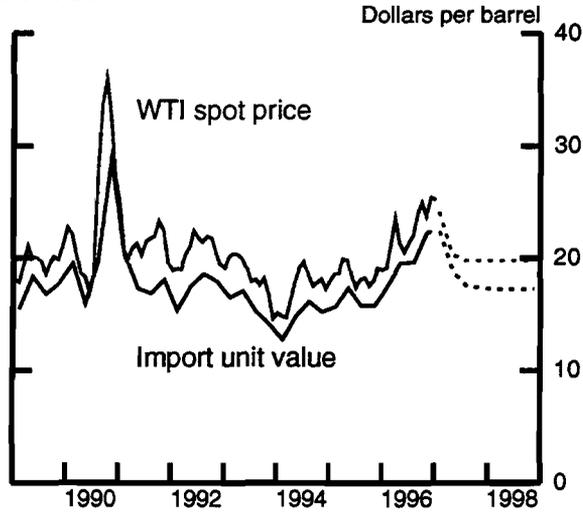


Dollar Stays at Recent High



### World Oil Markets

Oil Prices



#### Alternative Oil Price Scenario

- Baseline:** Greenbook forecast extended.
- Alternatives:** Oil prices remain at 1996Q4 level.
- Policy Assumption:** Federal funds rate unchanged; foreign G-7 follow Taylor-rule type of policy.

Percent change, Q4 to Q4

	<u>1997</u>	<u>1998</u>	<u>1999</u>
<b>U.S. PCE Inflation</b>			
Baseline	2.2	2.6	3.1
Alternative	2.6	2.8	3.2
<b>U.S. Real GDP</b>			
Baseline	2.3	2.1	1.4
Alternative	2.3	2.2	1.3
<b>Foreign G-7 Inflation*</b>			
Baseline	1.6	1.1	1.3
Alternative	2.0	1.4	1.5
<b>Foreign G-7 Real GDP**</b>			
Baseline	2.8	2.7	2.5
Alternative	2.3	2.9	2.5

Billions of dollars, Q4

<b>U.S. Current Account</b>			
Baseline	-194	-210	-214
Alternative	-210	-215	-213

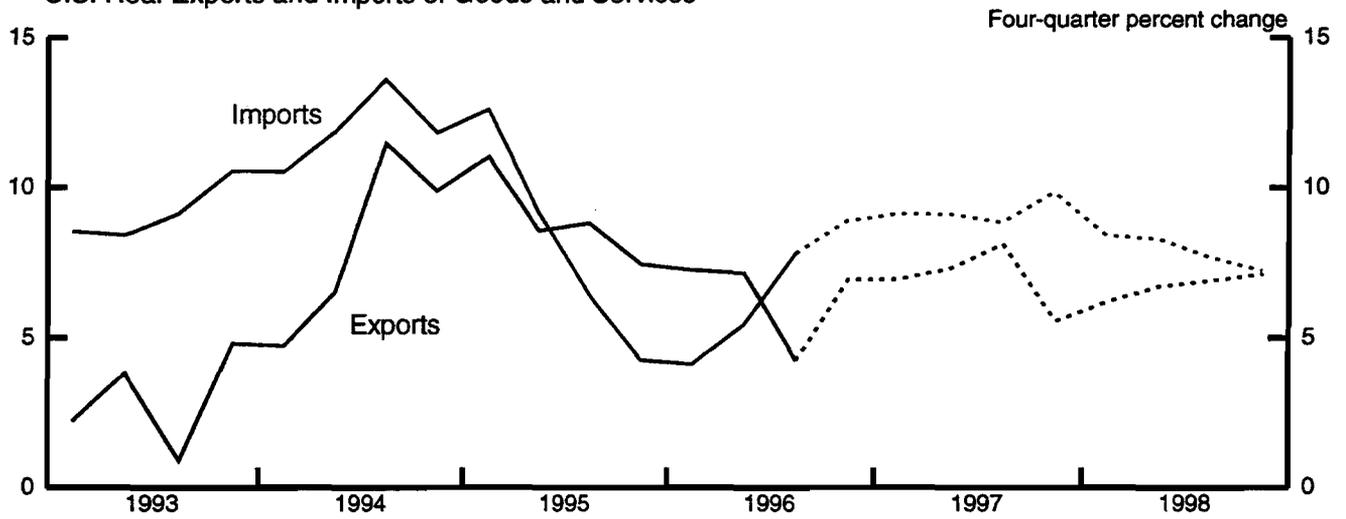
\* U.S. non-oil import weights.

\*\* U.S. nonagricultural export weights.

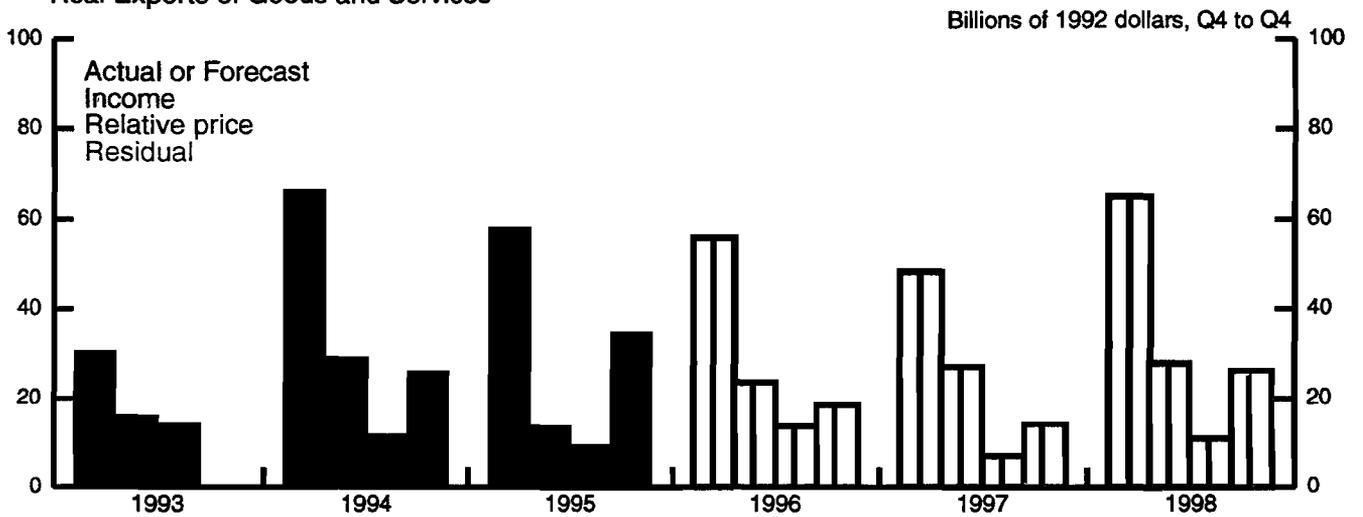
Chart 13

## Prospects for Net Exports

U.S. Real Exports and Imports of Goods and Services



Real Exports of Goods and Services



Real Non-Oil Imports of Goods and Services

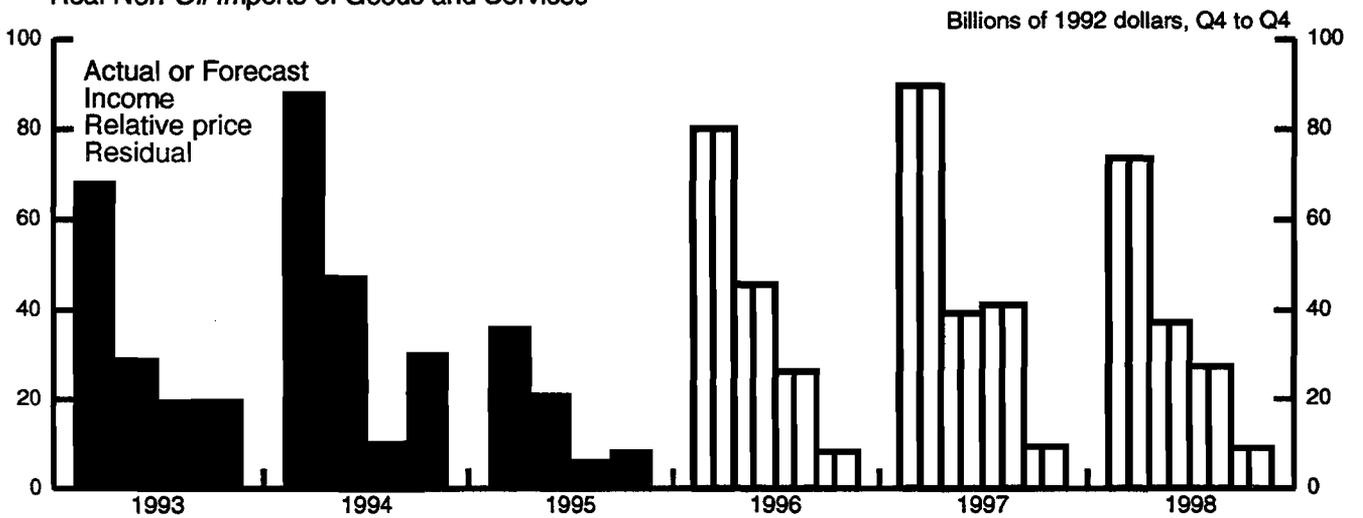


Chart 14

**ECONOMIC PROJECTIONS FOR 1997**

	<b>FOMC</b>		
	Range	Central Tendency	Staff
	—————Percent change, Q4 to Q4—————		
Nominal GDP	4 to 5 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>2</sub> to 4 <sup>3</sup> / <sub>4</sub>	4.6
previous estimate	4 to 5 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>4</sub> to 5	
Real GDP	2 to 2 <sup>1</sup> / <sub>2</sub>	2 to 2 <sup>1</sup> / <sub>4</sub>	2.3
previous estimate	1 <sup>1</sup> / <sub>2</sub> to 2 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>4</sub> to 2 <sup>1</sup> / <sub>4</sub>	
CPI	2 <sup>3</sup> / <sub>4</sub> to 3 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>4</sub> to 3	2.6
previous estimate	2 <sup>1</sup> / <sub>2</sub> to 3 <sup>1</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub> to 3	
	—————Average level, Q4, percent—————		
Unemployment rate	5 <sup>1</sup> / <sub>4</sub> to 5 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>4</sub> to 5 <sup>1</sup> / <sub>2</sub>	5.1
previous estimate	5 <sup>1</sup> / <sub>2</sub> to 6	5 <sup>1</sup> / <sub>2</sub> to 5 <sup>3</sup> / <sub>4</sub>	

NOTE: Central tendencies constructed by dropping top and bottom three from distribution.

## **Briefing on Forecasts and Alternative Ranges for Money and Debt Growth**

Brian F. Madigan

February 5, 1997

The Committee would appear to face two primary issues regarding the money and credit aggregates and their long-run ranges: first, whether to increase the weight given to the monetary aggregates and, second, whether to adjust the provisional annual ranges selected last July.

As you know, the velocities of the broad monetary aggregates rose appreciably over the early 1990s in a substantial break with their earlier patterns, prompting the Committee to reduce their weight in policy. The upper panel of your first chart updates a scatterplot the staff presented to you last year. The standard measure of M2 opportunity costs is measured on the horizontal axis and the velocity of M2 on the vertical axis. The black dots and fitted line depict the experience during the thirty years ending in 1989, a period of considerable stability in M2 demand.

The subsequent shift in velocity, occurring during the early 1990s, is traced out by the red line. Many of the factors that evidently gave rise to that shift--a historically steep yield curve, deleveraging by households, the contraction of the thrift industry, and unusual restraint on the flow of credit through banks--have long since disappeared. Flows into bond and stock mutual funds, in contrast, have remained quite robust. The increased availability of such funds, large reported capital gains on fund investments over the past few years, and unaggressive bidding for deposits by banks all have encouraged the burgeoning of the mutual fund industry.

Despite the substantial ongoing reallocations of household portfolios associated with the growth of mutual funds, the velocity behavior of M2 over the past ten quarters or so,

shown by the green dots, appears to have stabilized. The green regression line has closely explained velocity since mid-1994. Interestingly, the line has a slope that is virtually identical to the one that prevailed before 1990, indicating that the long-run relationship between opportunity costs and  $V_2$  has apparently not changed much. The shorter-run responses, however, may have evolved. Lower transaction costs in shifting funds between M2 instruments and mutual funds, for example, could have sped up the reaction of money growth to interest rate variations.

There are plenty of reasons to be skeptical that the estimated new relationship will prove to be durable. The recent sample period has been brief, the range of variation of short-term opportunity cost limited, and the financial environment uniformly benign. Whether money demand maintains its recent relationship in the face of more pronounced swings in financial asset prices--for example, an appreciable stock market correction--remains to be seen.

Nonetheless, this relationship seems to be the best framework available for analyzing recent M2 growth, and the staff again has employed it in developing its forecast for M2 consistent with the Greenbook outlook, shown in the second column of the table at the bottom. Under that forecast, short-term interest rates and hence opportunity costs are expected to be about flat over 1997. Thus, M2 growth is projected to expand in line with the staff forecast for nominal income, at a 4-1/2 percent rate. Such growth would leave  $V_2$ , as shown in the upper panel, little changed over 1997 and essentially on the estimated regression line.

The second line of the table indicates that M3 growth, as in 1996, is expected to be somewhat brisker than that of M2, running 6-1/4 percent this year. Although bank and thrift credit is expected to increase at a moderate pace, banks are likely to continue issuing a substantial volume of large time deposits in response to the much lower deposit insurance premiums, which will substitute in part for non-M3 sources of funds. Also, money market mutual funds are expected to continue to grow relatively quickly.

Domestic nonfinancial sector debt, the third line, is seen as expanding 5 percent this year, again a shade above nominal income growth. Although federal debt growth should be relatively modest and household borrowing is likely to slow this year, a growing business financing gap and heavy equity retirements should continue to buoy the expansion of overall debt.

In view of these forecasts, the Bluebook presented two alternative sets of ranges for the Committee's consideration, repeated here in the third and fourth columns. The first alternative comprises the provisional ranges established last July, which are identical to the ranges for 1995 and 1996. The second alternative raises the monetary ranges by one percentage point. With debt growth well centered in the provisional range, the second alternative does not include an increase in the range for that aggregate.

The exhibit on the next page presents a decision tree intended to help the Committee select ranges by considering three relevant issues identified in the boxes. The FOMC's choice may depend first on whether it plans to place more weight on the aggregates--and, in particular, on M2--in the conduct of policy. On the one hand, the recent stability of the demand for M2 may argue for placing a little more weight on that aggregate in policy

deliberations. The recent experience, while brief, has been impressive. Moreover, a monetary aggregate with appropriate stability properties can have significant benefits for policy. Trends in money growth can provide potentially useful information to policymakers, help anchor price movements over the long run, and assist the Federal Reserve in explaining adjustments to the stance of monetary policy. On the other hand, the Committee may well be concerned that the risk of unexpected developments in M2 demand remains substantial. The reliability of M2 has proved disappointing in the past, and the Committee may wish to await additional evidence of its stability to further reduce doubts about its usefulness before taking it more seriously in policy deliberations.

If Committee members concluded that it was not yet time to place more weight on M2, moving down the left branch of the tree, they may then wish to ask whether, nonetheless, increased predictability of the aggregates means that their ranges should be adjusted to better center them on expected outcomes. Faced with a similar situation last year, albeit with a shorter track record of recent good M2 behavior, the FOMC in effect said "no" and elected to retain the relatively low range for M2 growth of 1 to 5 percent. The Committee was concerned that the aggregates remained unpredictable and feared that adjusting the ranges to better encompass rates of growth that seemed most likely to be associated with its expectations for nominal income growth could be misinterpreted as an indication of increased weight on money--or, worse, as a signal of a less resolute anti-inflation policy. The Humphrey-Hawkins reports noted that monetary growth could be near the upper ends of the ranges and emphasized that the ranges served as a benchmark for money growth under conditions of reasonable price stability and historical velocity behavior. Most--but not all--

Committee members believed that this approach met the requirements of the Humphrey-Hawkins Act. Clearly, the Committee could follow the same approach this year. Consistency would seem to argue for maintaining this course unless the FOMC saw conditions as having changed significantly.

Alternatively, some Committee members, while not wanting to put any more weight on the aggregates, might think it appropriate to establish numerical ranges that are better centered on the expected outcomes for the current year. In this case, the Committee, moving diagonally down the "yes" branch in the middle, would need to examine its expectations for the course of policy. If policy will likely need to tighten significantly, money growth would probably come in noticeably below the staff baseline forecast--for example, the Bluebook predicted that M2 growth of about 3-3/4 percent, well within its provisional range, would be associated in 1997 with the "stable inflation scenario." In this case, the FOMC might want to retain the existing, alternative I, ranges. On the other hand, if the Committee was not prepared to prejudge that it would be firming policy this year, this argument would call for raising the ranges to better center them on expected outcomes. While alternative II does not exactly center them, it would move considerably in that direction.

The FOMC would also need to make a similar judgment about the probable course of policy if it did decide to place more weight on the monetary aggregates, moving down the right branch of the tree from the top. Because movements of the aggregates toward the limits of their ranges over the course of the year would raise questions about the stance of policy, the Committee would want to have some assurance that those limits were consistent with what it saw as likely to be appropriate policy. Thus, expectations of tightening during the

year, either with the objective of preventing an upward ratcheting of inflation or with the intent of making progress toward price stability, could be consistent with selection of the lower ranges of alternative I. But a view that substantial policy tightening during the year was not a foregone conclusion might lead policymakers to forecast that appropriate rates of money growth could well turn out to be at or even above the upper limits of the alternative I ranges and that a realignment, as under alternative II, would be most reasonable. Because the alternative II ranges still are not centered on expected outcomes, they might also be seen as consistent with the Committee's determination to reduce inflation over time and its view that there are greater odds that policy would need to tighten to contain an inflationary impulse than to ease in reaction to unexpected weakening in demand-- a view consistent with the Committee's asymmetric directive.

February 5, 1997

FOMC Briefing  
Donald L. Kohn

The staff forecast suggests that the Committee will need to tighten at some point to contain inflation--a characteristic underscored by the results of the longer-run simulations in the bluebook. At the same time, uncertainties about important relationships in forecasts of inflation have reduced confidence in some of the key leading indicators of inflation pressures, raising questions about how the Committee can best judge that the time has come to act pre-emptively to head off an intensification of price pressures if the staff has correctly identified the underlying situation. I will be addressing each of these issues.

The basic message of the forecast and its extension in the bluebook is that the economy is operating a little beyond its sustainable level so that inflationary pressures are mounting, and because policy is not now positioned to correct this situation, the imbalance will tend to worsen over time. Real short- and long-term rates are not now low by historical standards, but, as Mike noted, the rise in equity prices and the lack of caution by credit suppliers are seen as contributing to overall financial conditions that are too easy to contain inflation. The effects of the high stock market are illustrated in the stock-market shock simulations in the bluebook. While those simulations dealt

with a stock market drop, they are symmetrical. They suggest that a 25 percent overvaluation of the market--the ballpark prediction from a number of models--would, other things equal, raise the equilibrium funds rate by 50 basis points.

In the context of the staff forecast, the degree of stimulus in current policy is probably not large. Indeed, simply fixing the real funds rate, rather than fixing the nominal rate and allowing the real rate to fall with higher inflation over the next few years, likely would flatten to a considerable extent the upward trajectory in inflation. But it would not be enough under the forecast. Without some near-term rise in the real funds rate to bring demand back in line with the economy's productive capacity, inflation would tend to worsen over coming years.

For a variety of reasons use of the core PCE chain weight index in the bluebook charts probably presents an exaggerated picture of the degree of underlying deterioration in inflation. Moreover, a core index certainly is suspect as a proxy for inflation expectations, which are likely built on observations of all prices, and so the real rate would not drop as rapidly as depicted were the nominal funds rate maintained. Nonetheless, the underlying analytical point is still valid; holding the nominal funds rate constant in the face of climbing inflation, and presumably

inflation expectations, risks making policy progressively more stimulative. This additional stimulation is only partly offset by the further fiscal consolidation assumed in the staff forecast, so that by the end of the Greenbook forecast period, the disequilibrium in monetary policy and the economy is quite evident. The developing situation is reflected as well in results from Taylor rule-type simulations, which tend to show that the federal funds rate is not misaligned at present, given recent inflation and output, but this rate falls below the levels implied by the rule in 1997 and in 1998 if the economy follows the path in the Greenbook forecast.

If the staff is right about the current circumstances, lags in the effect of policy mean that core inflation will edge higher and the unemployment rate lower in the next few quarters, whatever your choice of monetary policy in the near-term. If you share this analysis and assessment and do not want the longer-term outcome of the staff forecast, the sooner you get started on tightening, the less disruptive to the economy will the tightening prove likely to be. Delays would allow underlying inflation pressures to build further and inflation expectations to turn up; the longer this persists, the more total slack ultimately must be put into the labor and product markets to achieve the Committee's inflation objectives. This line of reasoning

might motivate an immediate tightening of policy, as in the 50 basis points of alternative C in the bluebook, or by a smaller amount.

Nonetheless, even if the staff forecast were seen as correctly identifying the most likely risks to sustainable expansion, a number of factors could be seen to militate against the need for an immediate tightening. For one, as Ted noted, the recent strength in the dollar will help to damp aggregate demand and price pressures for a time. Moreover, some of the pickup in inflation in 1998 in the staff forecast is a consequence of an assumed event--the drop in the dollar that year--not primarily related to easy monetary policy. The influence of the higher dollar in the near term, along with the still-modest size of the output gap, implies only a slow uptrend in core inflation over the next year. If, in addition, food and energy prices are better behaved this year, as the staff forecasts, overall inflation rates will be damped and hence significantly higher inflation expectations are unlikely to become imbedded in wage and price setting over coming quarters.

Financial markets do not seem to have much concern about an emerging intensification of inflation pressures. Over the near term, their flat-funds-rate expectation may mainly reflect participants' readings of FOMC intentions based on your public statements. But, even over the longer

run, most market participants do not seem to see much need for tightening to keep inflation from accelerating: Surveys do not suggest that inflation expectations have moved out of a narrow range, and the overall slope of the yield curve is close to its historic average, suggesting that it mainly reflects a rising term premium. And the surveys and markets may turn out to be right: not only have a number of measures of core inflation been flat or even declining of late, but many of the usual early warning signs of higher inflation have remained quiescent. The Committee may not be able to rule out the possibility that for reasons we do not fully understand the economy may be able to produce at higher levels than we previously thought without added inflation pressures. In these circumstances, the Committee may wish to await further information about prospective inflation before deciding that a firming is needed.

Despite a "wait and see" policy stance at its last few meetings, the Committee has also seen the odds as tilted toward mounting inflation pressures forcing the need to tighten at some point. And the Committee may view the information becoming available since December as leaving that presumption intact. Most importantly, the economy in the fourth quarter was expanding at a rate in excess of the long-run growth of potential, and increases in compensation have been trending higher, confirming tautness in labor

markets. In these circumstances, the Committee may see the challenge before it as likely to be how to judge when to tighten policy to head off a potential increase in inflation.

That challenge hasn't gotten any easier. Shifting estimates of the relationships between output gaps and unemployment rates to changes in inflation have reduced the value of these key leading indicators of inflation and confidence in forecasts based on them. And with real interest rates close to historical averages, the reasoning used in 1994 for a preemptive tightening--that the stance of policy had become obviously inflationary--would not seem to be available to guide Committee actions or explain its decisions to the public. The information from the monetary aggregates may be regaining some value, but perhaps not enough to rely on to change policy, and even Taylor-type reaction functions are backward looking in some respects and suspect as well if there is uncertainty about the level of potential.

The difficulty is illustrated by the Committee's experience last year. Growth in real GDP turned out to be more than one percentage point higher, and the unemployment rate about 1/4 point lower, than the members anticipated one year ago, when the Committee took its last policy action. This is the kind of surprise that might typically have been

met with a little leaning against the prevailing winds to minimize the risks of overshooting. But uncertainty about underlying relationships, reinforced by the favorable performance of core inflation, stayed the Committee's hand.

Based in part on the statements of Committee members, many in the market believe that the difficulties of predicting inflation in a changing world have become daunting enough to have ruled out preemptive monetary policy action. They believe instead that only a sustained rise in inflation itself--the smoking gun--can trigger a tightening.

But anticipatory policy has served the economy well in the 1980s and '90s, consolidating gains in inflation and prolonging business expansions. Despite the uncertainties, the Committee may still be able to act pre-emptively. Some developments may merit a policy response because if sustained they will inevitably lead to higher inflation. Examples might include continued strong growth that was reducing the unemployment rate appreciably further; signs that labor-cost increases were not going to stop escalating; a sustained pick-up in inflation expectations reflected in prices of financial and real assets as well as in surveys and private forecasts; and movements in the usual set of indicators the Committee has used to detect early that strains on industrial capacity were in the offing.

The more problematic situation to handle pre-emptively would be if economic growth settled back but in reality left the level of output beyond potential, producing a slow, insidious upcreep in costs and prices. With reduced confidence in measures of resource utilization to predict inflation, it might be difficult to confirm that an inflationary process was in train until it became apparent in actual prices. Once that point had arrived, a significant increase in inflation could be underway before policy could reverse it, especially if inflation expectations began to increase. If this is a concern, the Committee may need to act fairly promptly once signs that the economy is producing at a higher than sustainable level begin to emerge but before they were convincing in every respect, being prepared to reverse course if necessary at some later date. One element that might deter prompt action is concern about excessively strong reactions by the public and financial markets to initial tightenings that came as a surprise. For example, this would be a factor to consider with regard to tightening at the current meeting. If the Committee intends to act as pre-emptively as possible, hoping to do so before it sees the smoke from the inflation gun, it might want to consider how it can make its analysis and its intentions as clear as possible to a currently unprepared audience.