

APPENDIX

David J. Stockton and  
Jack H. Beebe  
December 21, 1993

## Price Stability and Economic Performance

One proposal to emerge from your System Planning Conference of August 1992 was to concentrate research efforts on establishing the connections between price stability and economic growth. Last winter, Jack Beebe and I organized a systemwide research project covering a variety of topics related to this issue. We circulated to you last week a detailed summary of the papers prepared for this project and the discussions at our meeting in September. This morning we would like to comment briefly on those aspects of the project most relevant to monetary policy.

Roughly speaking, our project had three main components. The first was an investigation of the direct statistical relationship between inflation and the growth of real output. The second explored how inflation might affect both the supply of productive resources and how efficiently these resources are used. The third evaluated several arguments that have been advanced against the goal of price stability. Because we did not view as controversial--or particularly relevant--the proposition that high rates of inflation harm the economy, we asked the researchers, to the extent possible, to concentrate their efforts on exploring the consequences of eliminating a moderate inflation.

Let me turn first to the direct statistical evidence relating inflation to the growth of real output. Five papers presented at our conference examined whether, on average, countries that have experienced higher rates of inflation have had lower rates of growth in real output--controlling for a variety of factors such as capital

formation, investment in education, and population growth. As one of our discussants noted, we may have run every regression possible with existing data sources. In most cases, the results--taken at face value--suggest that inflation depresses economic growth.

However, the research also demonstrates that, under closer inspection, this finding is not very robust. The results appear sensitive to the time period of estimation, the set of countries included, and the choice of other explanatory variables. Our participants were skeptical that these cross-country results provide much guidance in quantifying the likely benefits of operating the U.S. economy with little or no inflation.

The situation is not any better with respect to the time-series evidence for the United States. The data reveal that higher inflation is correlated with slower growth of real output and labor productivity, providing some support for the notion that inflation reduces economic growth. But there are other explanations as well. Supply shocks, which simultaneously raise inflation and lower productivity, may be the main source of the negative correlation. Or, causation could run from lower productivity to higher costs and prices.

Two conference papers and another under preparation at the Board examine the time-series evidence for the U.S. economy. Unfortunately, these papers come to very different conclusions about whether there exists any meaningful evidence that inflation harms growth in output or productivity. Obviously, we have some work ahead of us to reconcile these findings.

The bottom line is that we were unable to find a "smoking gun" that would change the views of those economists who are skeptical that there would be any perceptible growth dividend from moving from

moderate inflation to price stability. That such evidence is hard to come by probably should not be surprising. Although even small effects on the growth of real output would be economically meaningful as they cumulate over time, such effects are likely to be very difficult to detect given the imprecision in our statistical techniques and measures of output. Indeed, many of the costs associated with mitigating the effects of inflation--such as resources devoted to finance, accounting, and cash management--show up as additions to real GDP.

Recognizing these difficulties, a second set of papers looked at how inflation might affect the supply of resources available to the economy and the efficiency with which those resources are allocated.

The factor of production most widely thought to be affected is capital. The interaction of inflation with the tax code raises the cost of capital through restrictions on depreciation and inventory accounting, and the taxation of nominal capital gains and profits. These effects likely are only partially offset by the deductibility of nominal interest payments. Although changes in the tax code since the late 1970s may have attenuated these influences, it still remains a good bet that inflation raises the cost of capital.

Beyond these tax effects, inflation may depress equity prices by fostering expectations of tighter monetary policy in the future, and perhaps, by raising the risk premium on equity. Empirical work has yet to produce convincing measures of inflation risk premia in equity returns or in interest rates.

Another concern is that inflation may have implications for economic efficiency. Perhaps the most serious efficiency consideration arises with respect to the functioning of the price system. A survey paper reviewed the vast body of research on this

topic. Although there are a few dissenting studies, this literature provides strong evidence that inflation heightens uncertainty and distorts relative prices. Even at moderate rates of inflation, the use of nominal contracts, differential speeds of price adjustment, and inflation-induced confusion can cause significant reductions in the information content of relative prices and wages.

Because resource allocation in market economies depends importantly on the signals provided by relative prices, this interference is surely detrimental to the efficiency of the economy. Indeed, there is some evidence that inflation uncertainty and relative price distortions tend to depress real output. But, as is the case with the direct studies of inflation and real output, the evidence is weak.

Of course, the best known efficiency loss is associated with the so-called inflation tax on currency and reserves. Reasonable estimates of the welfare loss from this implicit tax suggest it is small. However, several theoretical papers presented at the conference point out that changes in the inflation tax could have fiscal and economic implications that extend well beyond narrow effects on cash balances. But the empirical importance of these broader effects remains an open question.

Let me now turn the floor over to Jack to complete our presentation.

In addition to examining the likely channels through which a policy of price stability might improve economic performance, we also took a serious look at the arguments that have been raised against price stability, even if it could be attained costlessly. One reason cited for desiring positive measured price inflation is the possible biases in major price indexes. We commissioned an extensive review of

existing research on price measurement. There's a considerable body of work focusing on various components of the indexes and on various weighting schemes, but virtually nothing that attempts to estimate the aggregate measurement error in any of the major indexes.

A couple of years ago, Dave worked with two colleagues here at the Board to place some rough bounds on the possible size of the measurement bias for the U.S. CPI. They considered the CPI's failure to account accurately for the substitution both among goods and across types of retail establishments--and its shortcomings in quality adjustment, including the introduction of new goods into the index. Combining these possible sources of measurement error, they developed a high-end estimate of roughly 1-3/4 percent per year for the bias in the CPI. After thorough study of the existing price measurement literature, the authors of the conference paper didn't dispute the reasonableness of this estimate. But, they did stress that any calculation is subject to wide error and is best viewed only as an educated guess.

One long-standing argument against price stability suggests that some inflation is desirable because it facilitates the downward adjustment of real wages, because cutting nominal wages often is thought to be difficult. Work presented at our conference suggested that there were two problems with this view. First, nominal wages are reduced with surprising frequency in the U.S. For example, one paper showed that, in a sample of 53,000 wage-change observations, roughly 20 percent were negative. Even if one limits the sample to individuals not changing jobs, about 10 percent of the wage changes were negative. Second, real wage cuts appear to occur as frequently in low inflation periods as they do in high inflation periods. Now, there obviously are some situations in which nominal wages can't be

reduced easily. But this work suggests they aren't common enough to present a serious argument against price stability.

A second argument for a positive rate of inflation is that it provides a little more room for counter-cyclical interest-rate policy. With the economy operating at zero inflation, there's no opportunity for the short-term real interest rate to become negative, and this may limit the ability of monetary policy to offset shocks to aggregate demand. Some simulations using a small stylized empirical model of the U.S. economy suggest that there could be a problem at zero inflation. Depending on the size and nature of the shocks, the monetary authority may not be able to reduce the real short-term interest rate sufficiently to prevent a somewhat longer and deeper recession than would have occurred had there been a higher rate of inflation.

In such circumstances, there are policy tools other than the funds rate that could provide some stimulus to the economy. For example, the Fed could increase reserves, and perhaps even temporarily suspend the zero inflation objective. Of course, fiscal policy also would still be available. But, we don't feel that the work to date has covered all the bases, and further study of this issue may be warranted.

Finally, we thought it pertinent to look at the recent experiences of countries that have established explicit inflation targets in their efforts to achieve low or zero inflation--Canada, New Zealand, and the United Kingdom, as well as Australia, where the government's inflation forecasts generally are now regarded as policy objectives.

In each of these countries, the decision to target inflation was jointly determined with the government. In general, there appears

to be a broad view that if explicit inflation targets are to be successful: first, the central bank needs the political support of the private sector, as well as the government; second, the objective should be clear so that progress can be monitored easily; and finally, the central bank must have the ability and incentives to achieve its stated goals.

To date, reductions in inflation in these countries have been accompanied by recessions and substantial output losses. If there have been credibility benefits from the announcement of targets, in terms of lower sacrifice ratios, they appear, thus far, to have been small. Moreover, longer-term inflation expectations remain above actual inflation, suggesting that doubts remain about continuing commitments to these targets. However, it's far too early to draw any conclusions about the success of these programs. Any meaningful tests of inflation targets lie ahead when these economies move more firmly onto their recovery paths.

In summary, the work undertaken for this project produced a number of insights into the extent to which operating the economy with little or no inflation would improve economic performance. In the process, we also developed a better sense of where additional work might yield substantive benefits. However, in the end, we've not provided you with an air-tight case for price stability. There's reasonably clear evidence that inflation interferes with the pricing mechanism, heightens uncertainty, and distorts the cost of capital. And, avoiding these distortions provides a strong argument for price stability. But the evidence that price stability would boost economic growth remains largely indirect and circumstantial.



**FOMC NOTES**  
**DECEMBER 21, 1993**

**Peter Ryerson Fisher**

Mr. Chairman,

Exchange markets have been quiet since your last meeting. But there have been changes in current and expected interest rate differentials and, in thin, end-of-year markets, it has been hard to determine the extent to which these changes have been reflected in current exchange rates.

Against the German mark, the dollar has traded uneventfully in a narrow range between 1.70 to 1.72. However, the yield on the ten-year U.S. Treasury bond moved above that of the ten-year German bund for the first time since May 1990. While there has been a slight back-up of expected German 3-month rates for the first quarter of 1994, as implied by the March Euro-mark futures contract, expectations remain for German and U.S. 3-month rates to converge rapidly over the course of next year, with the differential in favor of the mark, implied by futures prices, being completely erased by year-end. This is illustrated in the third panel of the first page of charts.

The movement of the dollar from around 1.60, in September, to above 1.70, now, reflected both the modest increase in expected U.S. rates and the significant decrease in expected German rates that occurred between September and December. But there remains an almost 300-basis-point differential in favor of the mark in current 3-month cash rates. Moreover, in early December the Bundesbank announced that, through to January 5<sup>th</sup>, it would conduct its repurchase operations at a fixed rate of 6 percent. Particularly in the end-of-year environment, the continued high cost of carry and the Bundesbank's fixed rate operations have given foreign

exchange traders' strong incentives to wait and see what the new year brings in terms of interest rate reductions by the Bundesbank.

Against the yen, the dollar traded between 107 and 109 until the last few days when – in very thin markets – it moved up from 109 to above 110.

In late November, Japanese money markets began to reflect expectations for an imminent reduction in the Bank of Japan's Official Discount Rate. This can be seen in the first three panels of the second page of charts. As rates on 3-month CDs moved below call rates and then came within 25 basis points of the ODR, the Bank of Japan tightened money market conditions (as indicated in the fourth panel) to dampen rate-cut expectations.

It appears that the Bank of Japan is trying to delay a decision on a possible reduction in official rates until the politics and prospects of fiscal action become clearer. The Bank of Japan is worried that there will be a severe, negative market reaction if the Hosokawa government fails to come through with some form of fiscal stimulus. With the prospects for prompt fiscal action seeming to fade, and a 4 percent decline in the Nikkei over the last two days, there have been renewed expectations this week for an imminent ease in official rates.

To the surprise of many, Japanese exporters have continued to extend their hedging of dollar exposures further into the future and, until just recently, the resulting dollar sales had been capping the dollar just above 109, even as expectations for a cut in the ODR increased. Japanese institutional investors are reported to be buying dollar-denominated assets but only on a "fully" hedged basis. Both groups have remained concerned that the Clinton Administration will try to maintain upward pressure on the yen. Thus, Secretary Bentsen's comments last week that he

was “comfortable” with current dollar-yen rates reduced some of these anxieties and, in thin markets, helped the dollar to trade above 110 last Friday, where we have remained.

Mr. Chairman, I also have two housekeeping matters.

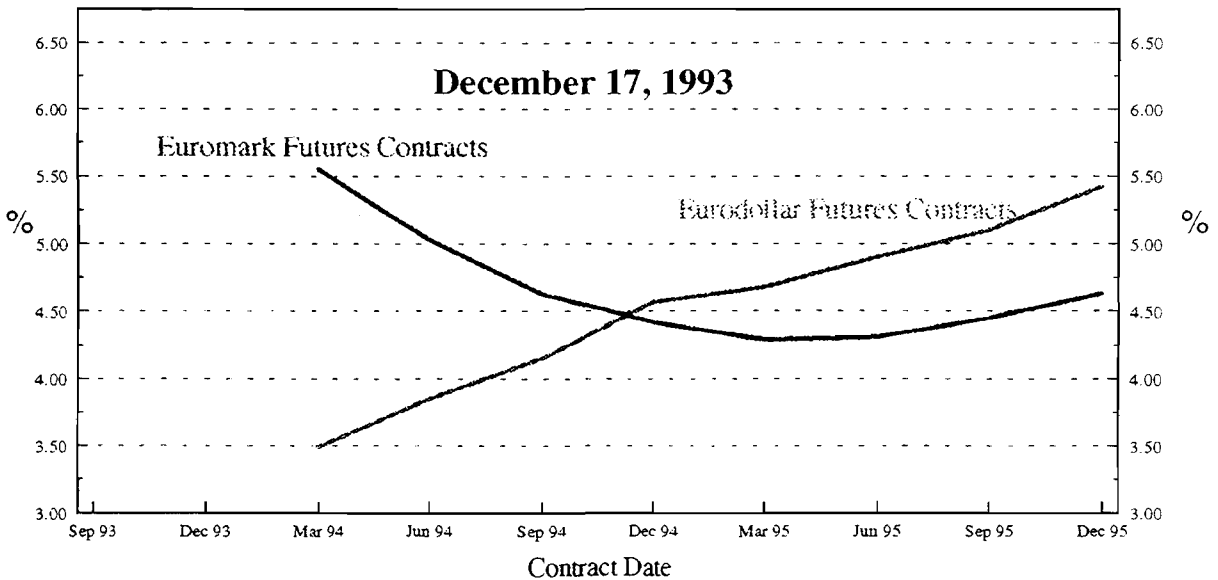
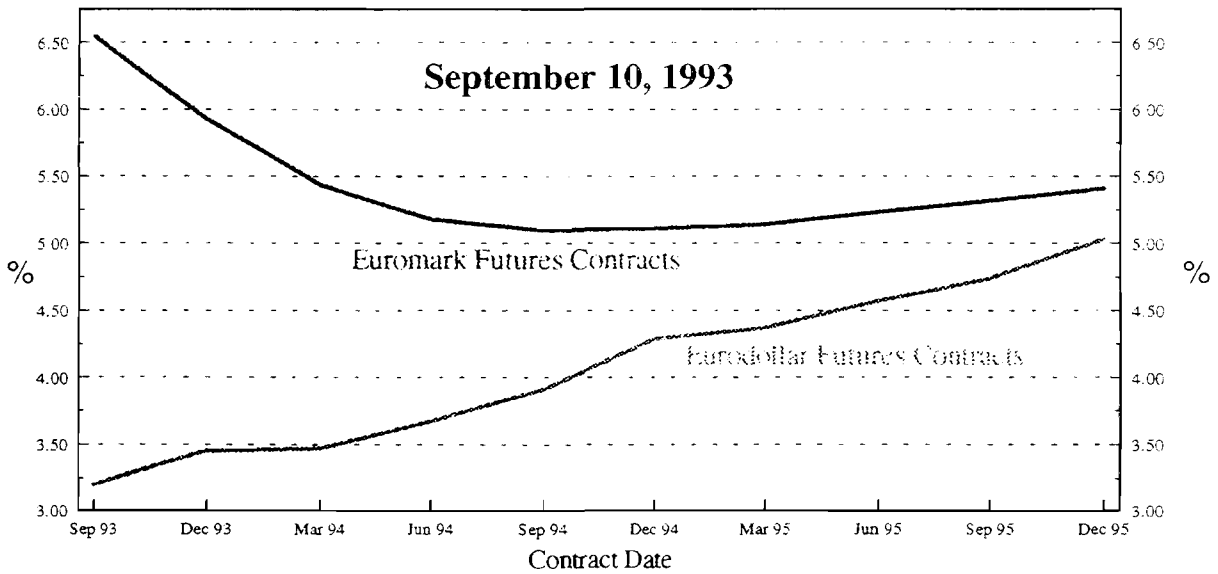
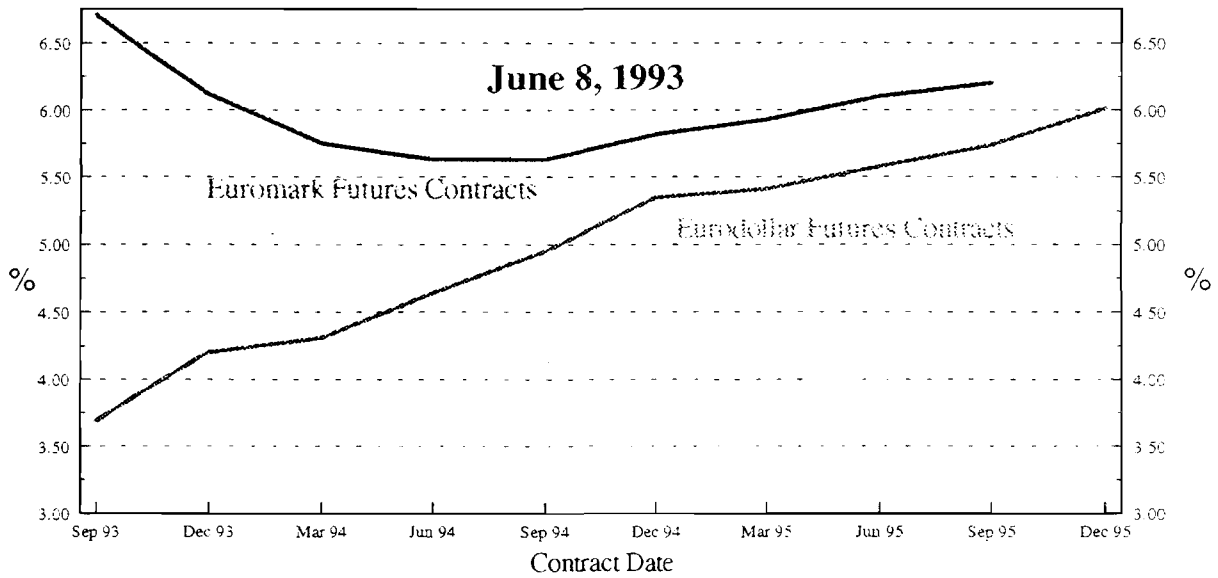
First, at the last meeting, the Committee approved the renewal for an additional year of the Federal Reserve System’s reciprocal swap arrangements. All have been renewed.

Second, I would like to inform the Committee that we have begun the process of seeking to dispose of the System’s non-mark and non-yen foreign currency holdings. Representing 3 percent of total System foreign exchange reserves, these holdings have a current value of 685 million dollars, 612 million dollars of which is in Swiss francs with the remaining 73 million dollars spread among five other currencies. As I plan to offer each currency first to the central bank of issue, and also to consult with the relevant central bank before executing any sales in the market, this process will take some time. As sales are completed I will inform the Committee. I would like to seek the Committee’s concurrence in treating these sales outside of the single-day and intermeeting limits set out in the Committee’s Procedural Instructions.

I would be happy to answer questions on my report or on either of these housekeeping matters.

# A

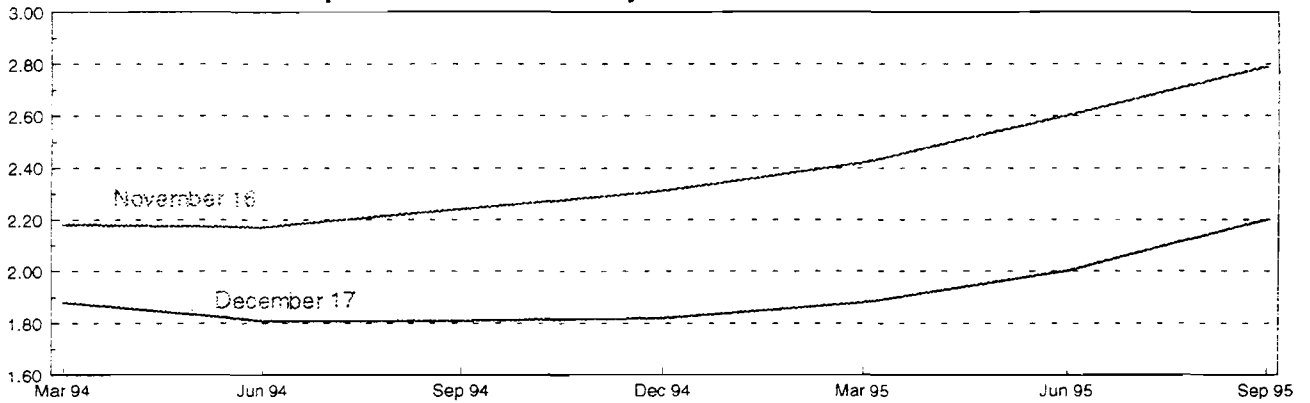
## 3-Month Euro Rates Implied By Prices of Series of Euro-\$ and Euro-DM Futures Contracts



# B

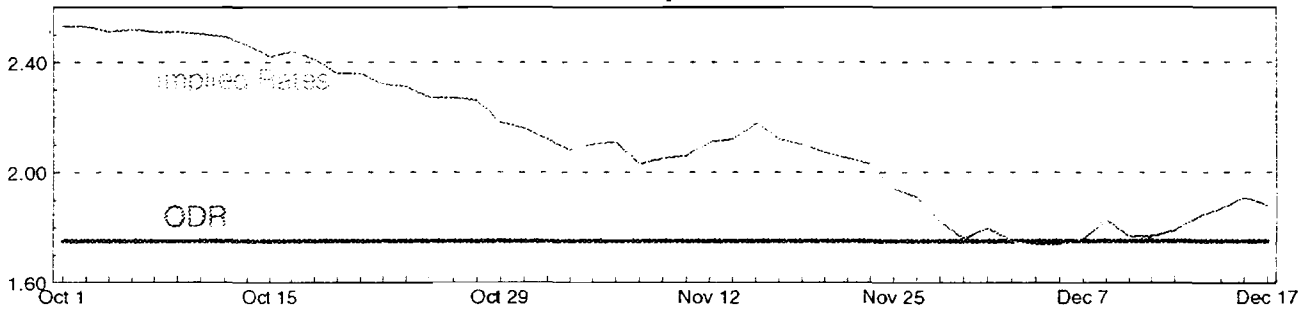
## Japanese Monetary Conditions

### Expectations for Money Market Interest Rates\*



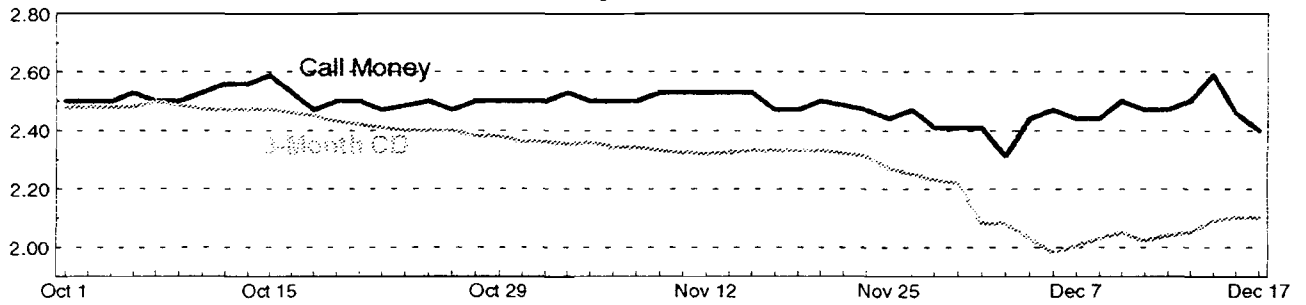
\*Implied by series of 3-month Euro-Yen Futures contracts.

### Official Discount Rate and Implied Future Interest Rates\*

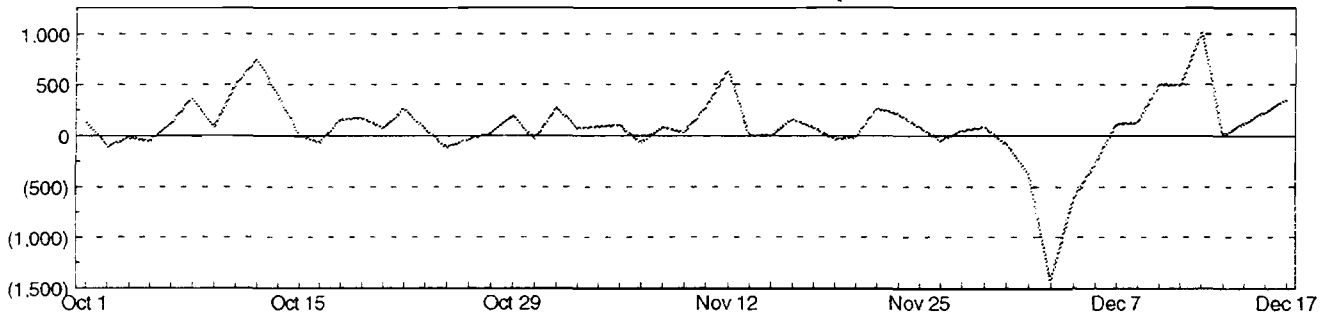


\* Interest rates implied by March 94 Euroyen futures contracts.

### Call Money and C.D. Rates



### Banks' Deviation from Reserve Requirements\*



\*Deviation of actual bank reserves from levels suggested by the BOJ based on reserve requirement ratios and time elapsed in the current reserve maintenance period.

Notes for FOMC Meeting  
12/21/93  
Joan E. Lovett

Desk operations continued to seek reserve conditions associated with a Federal funds rate in the area of 3 percent. The borrowing allowance was cut twice, by a total of \$50 million, as seasonal use continued to wane. The allowance now stands at \$50 million. Adjustment borrowing was very light on most days, and for the full period it averaged only \$15 million. The funds rate hewed pretty close to the 3 percent level for most of the period.

At the time of your last meeting, the Desk anticipated large and growing seasonal reserve needs, peaking in the maintenance period that covers the year-end. Cumulative revisions to operating factors reduced actual and prospective reserve needs considerably as did weaker-than-expected required reserves, reflecting slowing demand deposits.

The Desk met a good portion of the seasonal add need when it purchased \$4.6 billion of Treasury coupon issues in the market on November 30th. We also actively bought securities directly from foreign accounts, acquiring a further \$2.2 billion through this channel. However, as the reserve outlook changed, total outright purchases were kept well below the amount we had originally prepared for, and it proved unnecessary to use the extra leeway we had requested at your last meeting.

Our outright purchases brought the total expansion of the System's portfolio this year to a record \$35 billion, with the average maturity of the portfolio now just over 38 months, about 2 months longer than at the start of the year.

Remaining reserve needs during the interval were met with temporary transactions. A sequence of overnight and multiday repurchase agreements was arranged over most of the period, many of which were of substantial size and, in the case of the multiday transactions, some were for fixed-term. Revisions to market factors over the second period helped to gradually turn an expected modest reserve shortage into a surplus. After the need to drain reserves became clear, a round of overnight matched-sale purchase transactions was arranged on the settlement day, the first in some months.

Looking ahead, the seasonal add need is expected to peak in the next period before rapidly receding, and we anticipate having to provide a sizable amount of reserves through the year-end with temporary operations. The need, at least as we now see it, appears manageable. Market participants do not seem to be nervous about year-end funding conditions. Some added degree of tightness in the funds and RP markets during this time is typical, but most believe that these pressures will be contained. December 31st falls on a Friday, and many institutions reportedly have already finished their year-end financing in order to avoid having to pay possibly more elevated rates over the holiday weekend. Right now, domestic banks are

paying 3 1/2 to 4 percent for funds over the turn. The Japanese banks are said to be paying in the neighborhood of 4 1/2 to 5 1/2 percent, but these rates are down from the 8 to 9 percent range reported just a few weeks ago.

In the securities markets, interest rates on Treasury coupon issues have risen between 5 and 20 basis points since your last meeting. The sharp move up in yields that started in mid-October extended into the early part of the past interval as the market continued its reappraisal of prospects for the economy and monetary policy. Estimates were revised up further and, at this point, estimates of fourth quarter GDP growth are almost universally within a 4 to 5 percent range. The outlook for the first half of next year remains cloudy, however.

Thus, following the discounting of near-term strength, rates have bounced around in a 20 basis point range with no clear trend--what one participant called the "debate range." Falling oil prices helped rates ease off their highest levels. However, some recent increases in other commodities prices have been a bit worrisome, and the latest set of monthly price reports--while generally in line with expectations--were not as comforting as some traders had hoped for. Meanwhile, the string of favorable indicators of economic activity has continued.

A growing number of analysts now think that the momentum of faster growth in the current quarter might well carry over into next year. But opinions still diverge on the degree to which the current improvement will be sustained, or whether the



economy will be restrained by the now oft-cited factors capping growth. For its part, the Fed is expected to be on the alert for any indications that price pressures are coalescing, and a number of observers anticipate that the FOMC will switch to a firmer policy bias soon. At the same time, the dominant market view remains that the Fed will want a solid case for actually moving, which entails waiting for some evidence in data from the first quarter.

Trading volume has begun to thin out as we approach the year-end, and issuance in some sectors, such as corporates, has diminished. Treasury issuance has also fallen off in recent weeks. Meanwhile, trading in the latest 30-year bond continues to command a premium. The yield on this issue generally remained about 15 to 20 basis points below the rate on the February 2023 bond, not far from where it now stands.

Despite the run-up in yields since mid-October, this past year has witnessed an impressive overall decline in rates, at least in the longer maturities. The yield on the current 30-year Treasury bond now stands about 110 basis points below the rate on the comparable issue at the start of the year. Perhaps more representative, yields on ten-year issues have fallen a net 90 basis points or so. Meanwhile, the Treasury coupon yield curve has flattened by about 85 basis points.

Michael J. Prell  
December 21, 1993

FOMC Briefing

The economy clearly has ended the year on a strong note. Supported by robust final demand, production of motor vehicles and other consumer and producer durables and construction in both the residential and nonresidential sectors have moved up sharply since the summer. Our guess is that real GDP expansion this quarter will be in the vicinity of 5 percent, at an annual rate. That may be a shade higher than the current consensus, but many analysts are in this neighborhood. The bigger question--particularly, I would think, from a policy perspective--is what will happen as we move into 1994?

As you know, we don't anticipate a repetition of the marked slowdown that occurred in the wake of a similar burst in activity a year ago. This isn't to say it's impossible, but that episode involved, among other things, some wild swings in expectations about governmental policies and a dose of bad weather, to boot.

We do, however, expect to see a moderation in the pace of expansion in the near term. We think that, given demographic trends, housing starts are close to the peak level they are likely to attain in the absence of a substantial further decline in mortgage rates. Real business fixed investment is likely to decelerate somewhat from the very rapid growth pace of the past year; in this regard, I might note in passing the release this morning of the Commerce Department's fall survey of plant and equipment spending plans, which indicated that firms expect to increase their outlays 5-1/2 percent in 1994 versus a 7 percent gain in 1993. The differences in coverage and measurement between the P&E and BFI series make interpretation of the

survey results difficult, but, at first blush, they seem to portray a less robust investment performance than we've forecast. Meanwhile, overall government spending probably will remain flat. And growth abroad is expected to pick up too slowly to generate a major surge in exports. Perhaps most important, without a boost to income growth from these other sectors, we would expect the growth of consumer spending to slow appreciably from the pace of recent quarters.

Consumer spending evidently has grown considerably faster than income over the past year and a half, and we don't think it is likely to do so for much longer. To be sure, the recent rise in consumer confidence may mean that households will remain willing to dip into their savings or borrow to finance expenditures. But, if we are right about the prospects for homebuilding, growth in the demand for appliances and furniture is likely to moderate, and the pace of motor vehicle sales is approaching what is needed to make up for the purchases postponed in recent years. And, of course, upper-income households are about to be confronted with bigger tax payments.

Could there be an upside surprise? Sure there could be. There's no sector of demand for which I can rule out the possibility of greater strength. To cite some of the most obvious candidates, consumers, earning negative after-tax real returns on short-term assets, could continue to substitute purchases of durable goods for financial savings in a big way; the enhanced affordability of single-family homes could push housing starts substantially higher for a time; or the desire for gains in efficiency, and the plunging costs of innovative computing and communications technologies, could spur even stronger equipment investment. A potent combination of these forces could produce a substantially faster growth of activity than we've forecast. Considering just the usual uncertainty of forecasting, I'd

have to say that the odds of GDP growth exceeding 4 percent next year might be on the order of one in five.

Four percent is an interesting number not only because last Friday's Wall Street Journal said some Administration economists are thinking about such a possibility, but because, starting from our Greenbook path, such growth would imply that unemployment might well fall to 6 percent by the end of 1994. Indeed, some would argue that, judging from this year's experience, unemployment could drop to 6 percent by the end of 1994 with merely the 2-3/4 percent GDP growth we've predicted. The combination of that speed of decline and the resultant level of remaining slack in the economy would suggest a significant risk of mounting inflationary pressure.

As it is, even with the Greenbook forecast of resource utilization, we can not state with assurance that there would be the modest deceleration of core inflation that we have predicted for the next two years. Although 6 percent is our working point-estimate of the near-term level of the NAIRU, this is not something one can quantify with great precision. A safe confidence interval for NAIRU estimation might well encompass the current 6-1/2 percent jobless rate, and the recent behavior of prices suggests that unemployment rates in the upper 6s have been producing only mild disinflation.

A similar set of questions can be raised about industrial capacity utilization, which jumped to 83 percent last month. That rate is less than 2 points below the last cyclical peak and well into a range that some analysts have claimed to have constituted historically a sort of natural rate of capacity utilization. We don't think those results are especially compelling at a technical level, but they do sound something of a cautionary note as we look toward a further upward drift in plant use in the next two years.

As it is, some discomfoting price developments may lie ahead in just the next several months, owing to the recent surge in activity. As we discussed in the Greenbook, we have built into our forecast a small uptick in core CPI inflation in the first quarter. This isn't because we are anticipating a repeat of the seasonal adjustment problems that have afflicted the index in recent years; the BLS is taking steps to reduce those problems. Rather, it is a nod in the direction of the so-called "speed effects" that we think were manifest in the early part of this year after a similar surge in activity.

Admittedly, there aren't many signs in the Beige Book or other anecdotal reports that firms in general perceive that they have much pricing power. But that doesn't mean there won't be some companies that will be tempted by their recent strong sales to test their markets, as GM did last week in announcing another set of price hikes. We, of course, are expecting that a return to moderate expansion will tamp down any rise in mark-ups, but given the lesser slack in the system now than was present earlier this year, the risks of inflation gathering momentum would have to be viewed as greater this time.

Fortunately, the exogenous factors that played a significant role in generating price pressures in some past cycles do not appear to be working currently in a way that should help precipitate an early reversal of the disinflationary trends in the economy. We are suffering some adverse effects from the crop losses of this past summer, but they appear limited, and they are being offset by favorable developments in the oil market. The dollar's firmness is a plus, in terms of import prices. And, though the numbers have been

erratic, there are some indications in the surveys that inflation expectations may have moved down a bit.

Our bottom line is that we still think that a significant turn in price trends probably is not at hand, but there is now a smaller margin for upside error in our projection of aggregate demand if the achievement of further progress toward price stability is viewed as a priority objective. Thus, while it may not be time yet to remove the proverbial punch bowl, it might be wise to keep a close eye on the guests.

E.M.Truman  
December 21, 1993

FOMC Presentation -- International Developments and Outlook

When we completed the Greenbook forecast, we had no comprehensive data from the fourth quarter about the external sector. The following day, merchandise trade data were released for October. The resulting adjustments to our view of current-quarter developments are relatively minor; we would be inclined to boost both exports and imports marginally in real terms, with a somewhat larger upward adjustment in imports. We continue to think that the net negative contribution to real GDP in the fourth quarter coming from net exports of goods and services will be the smallest since the fourth quarter of last year.

However, this is largely because of special factors affecting exports. Agricultural exports have recovered from their reduced level in the third quarter. Exports of motor vehicles and parts also appear to have recovered. The surge in shipments of completed aircraft this quarter is expected to be temporary. Meanwhile, the expansion of the domestic economy is producing a rapid rise in non-oil imports, paced by record increases in computers and substantial increases in other capital goods and industrial supplies.

Looking ahead, we see gradual strengthening in exports over the next two years, compared with 1993. The principal factor influencing our longer-term outlook is faster growth abroad. In the wake of the passage of the NAFTA, we expect an acceleration of economic activity in Mexico. Growth in other

developing countries, on average, should remain strong, especially in Asia where a moderate slowdown in China is expected to be roughly offset by faster growth in most other countries. Elsewhere, activity in the industrial countries should accelerate somewhat next year and the year after, following the moderate pickup this year.

I feel somewhat more confident about the positive tilt to our outlook for economic activity in the industrial countries because there is growing evidence that the recession has bottomed out in most of them. However, the recovery is expected to be moderate, and downside risks remain, especially in Germany -- where the western part of the country remains in recession -- and in Japan -- where we anticipate growth will be only marginally positive for several quarters. One reason why we expect that the pickup in growth over the next two years will be moderate is that, with the exception of Japan, other foreign industrial countries have embarked on more or less ambitious programs of fiscal consolidation. (In Japan, we expect further expansionary fiscal action, but the actual size, composition, and timing remain uncertain.) On the monetary side, declines in interest rates have been substantial, and we are projecting further reductions in continental Europe, led by an additional 150 basis points in Germany, roughly in line with the market's expectation shown in Peter Fisher's chart. We also expect modest declines in rates in Japan, Canada, and the United Kingdom. While these overall interest rate developments could put upward pressure on the dollar, we assume that their influence will be



offset by other factors such as less of an increase in dollar interest rates than the market generally expects. Nevertheless, we are projecting that the dollar, on average, will remain relatively strong at around its current level; this would imply a higher level than has prevailed for any sustained period since 1989.

Our forecast contains both downside and upside risks. Among the latter is the completion of the Uruguay Round, which we do not expect to have much immediate direct effects on trade and growth but could have favorable psychological impacts. In addition, growth abroad may be stronger than we expect; after many quarters of disappointment, we are not predisposed to general optimism.

Canada and the United Kingdom are two countries where growth in 1993 has been more rapid than we projected, despite growth in their major trading partners that has been slower. However, before one takes much comfort in this fact, the more rapid growth does not appear to have been due to more-rapid-than-expected expansion of domestic demand; instead, the extra growth appears to have been associated with greater expansion of exports largely because of exchange rate effects -- larger-than-expected nominal depreciation in the case of Canada, and greater responsiveness to nominal depreciation in the case of the United Kingdom. However, as a rule, the world as a whole cannot rely on external demand to provide a stimulus to domestic growth, especially as the consequence of changes in exchange rates.

For four years prior to 1993, U.S. real exports of goods and services provided a gross stimulus to U.S. real GDP in the sense that exports increased more rapidly than domestic demand. Exports have not grown as rapidly as U.S. domestic demand this year; indeed, their growth has slowed significantly, which presents a bit of a puzzle inasmuch as foreign growth has picked up moderately on average.

This phenomenon appears to have been associated with four negative influences on exports: One is the stronger dollar since the third quarter of 1992 -- an appreciation of 15 percent. Another is a decline in exports to Mexico that has been larger than can be explained by the slowdown in economic activity in that country; uncertainties about NAFTA's passage appear to have contributed to sharply lower investment demand which tends to be import intensive. A third factor is reduced exports to OPEC which may be the consequence of lower oil prices that have depressed the revenues of these countries, but may also have reflected a scaling back of extraordinary import demands that emerged in the aftermath of the Gulf War. Finally, agricultural exports have been lower because of weak U.S. harvests and reduced demands from the former Soviet Union and China.

In our outlook, growth is projected to pick up further abroad, and the negative influences on our exports of the dollar's appreciation and NAFTA's uncertainties on Mexico should wane. Lower oil prices remain a downside risk to U.S. exports on balance -- though they would be positive for world growth as a whole -- and agricultural exports are unlikely to rebound much

further. On balance, we are comfortable with an outlook in which the rate of growth of real U.S. exports of goods and services picks up and again exceeds the pace of increases in domestic demand. However, the higher level of imports and their larger elasticity with respect to U.S. real income will combine to produce a continuing net negative effect of the external sector on real GDP, but one that declines over the forecast period.

Mr. Chairman, that concludes our comments.

December 21, 1993

Policy Options  
Donald L. Kohn

Recent information suggests the possibility of a strengthening in inflation pressures sooner than was anticipated several months ago. The margin of slack in resource utilization putting downward pressure on prices is smaller and has eroded faster than expected. The Committee has thought for some time that at some point in the current expansion the federal funds rate would have to be raised to contain inflation. The question today would seem to be whether that point is now, or at least likely to be quite soon, possibly before the next meeting in early February.

A number of arguments could be made for beginning the process of tightening sooner rather than waiting some time. For one, while the amount of slack cannot be pinpointed with a great deal of confidence, it probably is not large. Given the lags in the effects of policy on spending and prices, if the Committee thought this gap would continue to close at even a moderate rate, a fairly prompt tightening would seem to be called for. To avoid overshooting potential output and allowing inflation to strengthen requires that policy move toward a more neutral stance well before the economy reaches its potential. What this might require in terms of the federal funds rate is not clear: it depends on a host of factors other than monetary policy affecting financial markets and aggregate demand. But it probably implies an eventual increase in the federal funds rate in real terms of more than one percentage point.

To keep a downward tilt to inflation or even just to forestall a pick up, tightening would need to begin before there were

clear signs in broad-based price indexes that the trend of inflation has changed. Indeed, absent speed effects, inflation could be stable or even continue to edge down until the economy is close to its potential. And the case for early action is strengthened to the extent that the Committee would like any firming in the funds rate to be gradual over time, rather than more abrupt and aggressive, perhaps to minimize disruptions to financial markets and institutions.

The size of the rise in the federal funds rate eventually needed and the success of the Committee in achieving its inflation objective will depend importantly on the behavior of inflation expectations. An uptick in inflation expectations, because prices or wages are themselves strengthening, or because delaying raises questions about the inflation objectives of the central bank, would increase the required rise in the federal funds rate. Not only would the nominal rate have to move up to cover the higher inflation expectations, but real rates will have to be higher and output lower for a time to reverse the added inflation momentum.

Although the estimated modest current size of the output gap and the lags in the effects of policy serve as cautionary elements in assessing longer-run inflation risks, the key judgment bearing on policy would still seem to be whether the economy was in fact on a trajectory that would continue to erode excess labor and capital capacity. If the recent declines in the unemployment rate and pickup in economic activity were interpreted as indicating a stronger growth path--perhaps because the usual self-reinforcing mechanisms of the business cycle were finally taking hold as financial constraints faded--a tightening fairly soon would seem to be called for. While, under these circumstances, there would be scope for some delay to

assess developments, especially if the Committee were willing to firm aggressively later. postponing action for long would run a significant risk of greater inflation pressures.

In the staff forecast, however, the economy is not on such a trajectory, and tightening does not begin until late 1994. Growth late this year has been boosted by some temporary factors that will not persist, and will be held down next year by restrictive fiscal policy. In effect, the benefits from fiscal restraint, in terms of lower interest rates and increases in interest-sensitive spending, are being realized before the actual damping effect of higher taxes on aggregate demand. In addition, the stronger dollar and higher real bond yields of recent months help offset the effects of accommodative monetary policy. If the Committee views growth at the rate of expansion of the economy's potential or only slightly greater as the most likely outcome, tightening can be safely postponed. At least, more evidence could be awaited as to whether the upside risks Mike discussed were in fact being realized.

As usual, growth of money and credit provides ambiguous guidance for your deliberations. Nonetheless, expansion in broad money and nonfederal credit has picked up in the second half of the year, reinforcing the notion that constraints on borrowing and lending are abating. Credit growth has been especially strong for households, supporting increases in spending in excess of growth of disposable income. Business borrowing continues sluggish, but, perhaps more because internal funds and equity are in ample supply to support capital spending than out of reluctance to borrow or constraints on credit availability. Both M2 and M3 have come in above staff projections for the last few months. We can explain some of this by reference to

a variety of special factors we don't expect to persist. In addition, there has been some slowing in the flows into bond mutual funds after the backup in bond yields and associated capital losses of late October. However, just as the Committee discounted weakness in M2 related to portfolio shifts out of banks and thrifts, so should it downweight any strength from these shifts abating. Even with the recent acceleration, growth of the broad money aggregates has remained moderate--averaging in the 3 to 4 percent area over the last few months.

Looking forward, in putting together our bluebook money forecasts, we faced considerable uncertainty about whether flows into long-term mutual funds would continue at the weaker November pace. We opted to assume some modest slowing in flows relative to earlier this year, but still robust growth. At the same time, the ebbing of mortgage refinancing will be subtracting from demand deposits and money growth. With this latter factor dominating, we see money growth consistent with the staff GDP forecast moderating over coming months, while private borrowing continues at about the stronger rate of the last half of this year. Further unexpected strength in money and credit could again signal unexpected strength in spending, though the Committee would want to be especially careful to interpret M2 in the context of other information about portfolio adjustments.

If the Committee were not ready to tighten at this time, but were sufficiently concerned about the potential costs to delaying action, it could adopt an asymmetrical directive. Such a directive would imply that firming before the next meeting was a real possibility--that the Committee saw some urgency to acting should, say, the economy be in a stronger track than projected or inflation expectations begin to deteriorate. Over the last six years, asymmetrical

directives have been twice as likely to be followed by policy action as symmetrical ones. If the FOMC didn't intend to move before the next meeting, but wanted to send messages about the balance of risks, the Minutes and the February Humphrey-Hawkins testimony are also available for this purpose.