

MONETARY POLICY AND EXCHANGE-RATE TRENDS

Remarks of

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Mr. Balles asks: What lessons can we learn from a review of the past decade's experience with exchange rates? The most important lesson, he says, is that we cannot have a strong and stable dollar without a steady, credible anti-inflation policy. Second, the dollar (and financial markets generally) react increasingly to expected future policies. And third, our new policy of targeting bank reserves in an effort to achieve closer control of money growth may mean somewhat more volatility in short-term interest rates, and hence more short-term fluctuations in the dollar, than we used to encounter. But in his view, the costs of high and variable inflation are likely to be much greater than the costs of some increase in the short-run volatility of the dollar.



Monetary Policy and Exchange Rate Trends

The Federal Reserve Bank of St. Louis has been a leader in the study of monetary policy and exchange rate trends. In its recent work, the Bank has focused on the relationship between monetary policy and exchange rate movements. This work has been particularly important in light of the recent developments in the international financial system. The Bank's research has shown that monetary policy has a significant impact on exchange rates, and that exchange rate movements can in turn affect the domestic economy. This research has provided valuable insights into the complex interactions between monetary policy and exchange rates, and has helped to inform the Bank's policy decisions. The Bank's work in this area is ongoing, and it remains committed to providing the public with the best possible understanding of these important issues.

Monetary Policy and Exchange-Rate Trends

I'm glad to have this chance to participate in the work of the Institute on International Banking, and to share with you my thoughts about the complex relationships of monetary policy and exchange rates. The world has changed tremendously in the past decade, and international banking has been one of the main arenas of change. I hope that whatever you learn from these discussions will help you deal more successfully with the problems created by this changing world.

Those who buy and sell foreign exchange have not had an easy task in recent years. The dollar has strengthened over the past year, but its value is substantially lower than it was four years ago, and it has experienced some painfully sharp and sudden fluctuations during that period. U.S. policy-makers consequently have become concerned about the impact of these changes on the nation's economic policy. Clearly, it is in the U.S. interest to preserve confidence in the dollar, which plays such a critical role in international trade and finance. Equally clearly, policy-makers want to avoid foreign-exchange crises, which might put downward pressure on the dollar and thereby add to domestic inflationary pressures.

Still, I believe that policy-makers have learned some valuable lessons from the past decade's experience with floating exchange rates. Certainly we have learned that the course of the dollar depends critically upon the policies toward inflation followed here and abroad. Today I would like to explain how monetary policy affects exchange rates, and summarize the lessons policy-makers have learned from their experiences.

Perspective on the Issue

Before I discuss in detail the relationship between monetary policy and exchange rates, I would like to provide some background perspective on the issue. The exchange rate can be considered as a price, much like the price of any commodity. It reflects how many U.S. dollars it takes to purchase a foreign currency. For example, at the present time one U.S. dollar will buy approximately 200 Japanese yen, two Deutschemark, or 1,000 Italian lira. As with any price, the exchange rate is determined by the forces of supply and demand. The international supply of dollars is determined by U.S. residents, who wish to purchase foreign goods and services and financial assets. The international demand for dollars comes from foreign residents who wish to purchase U.S. goods and services and financial assets.

Thus, monetary policy can affect the exchange rate by affecting the international supply and demand for dollars. We generally find it convenient to divide the international supply and demand for dollars into a *trade* account, to reflect the purchases and sales of goods and services, and a *capital* account, to reflect the purchases and sales of financial assets.

Under the regime of flexible exchange rates we've had since 1973, the trade and capital accounts together have determined the value of the dollar. But in the long-run, monetary policy influences the dollar primarily through the trade account, by determining the level of U.S. prices relative to abroad. The dollar, of course, must ultimately adjust to this level to preserve the competitiveness of U.S. goods in world markets — this is simply the well-known “purchasing power parity” explanation of exchange rates.

In the short-run, monetary policy acts primarily through the capital accounts to affect the dollar — first, by influencing investors' expectations about future inflation and, second, by changing real interest rates (i.e., interest rates adjusted for inflation). When monetary-policy shifts or other factors change investors' expectations about inflation, they naturally move out of the inflating currency to avoid a loss of purchasing power, which immediately pushes its value down on the foreign exchanges. In this way, exchange rates tend to anticipate changes in the long-run value of the dollar as determined by “purchasing power parity.” In addition, monetary policy affects the dollar in the short-run by temporarily changing the level of interest rates relative to anticipated inflation, that is, by changing real interest rates. Rising real interest rates attract investors to the dollar, causing its value to rise, while falling real interest rates push the dollar down.

With this brief overview, let me now describe in more detail the factors which I believe have linked monetary policy and exchange rates over the last several years.

Long-Run Factors

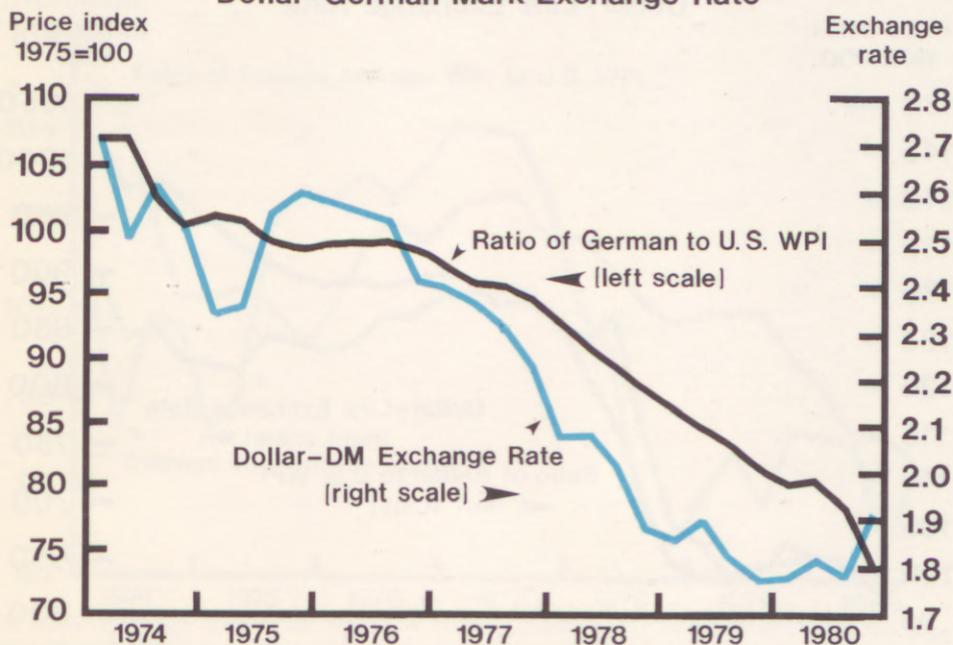
In my view, our experience with floating exchange rates since 1973 demonstrates conclusively that the long-term trend in the dollar — its direction over a year or more — is primarily a reflection of the course of U.S. inflation relative to inflation abroad. This of course means that the long-term trend in the dollar is critically dependent upon the monetary and fiscal policies we pursue here in the U.S., as well as those taken abroad.

It's easy to see why inflation here and abroad should determine the dollar's long-term course. When U.S. prices rise faster than foreign prices, our exports become more expensive than those of our competitors, while goods imported into the U.S. become cheaper than those produced in our own factories, by our own workers. Clearly the dollar will have to fall to restore our competitiveness and to keep our trade accounts in balance.

You can see this relation between inflation and exchange-rate trends most clearly if you compare the U.S. with individual foreign nations, as in Charts 1 and 2, with their comparisons of the U.S. with Germany and Italy. As you can see from the black line on the first chart, American inflation has been persistently higher than that of Germany — i.e., the ratio of German to U.S. wholesale prices has fallen. As expected, this trend has been reflected in a falling value of the dollar against the mark, as shown by the colored line. Conversely, Chart 2 shows that Italy's inflation has been higher than ours since 1974 — i.e., the ratio of Italian to U.S. wholesale prices has risen — and the dollar is now higher against the lira than it was then.

As you might expect — and as the third chart confirms — trends in the average value of the dollar against the major foreign currencies have also followed the course of U.S. inflation relative to the average abroad. For example, it's no coincidence that the dollar rose during 1975 and 1976, at the same time that the prices of U.S. goods were falling relative to abroad. Nor is it coincidence that when, beginning in early 1977, U.S. inflation accelerated faster than in other countries, the dollar fell back.

Chart 1
Relative Wholesale Prices
and the
Dollar-German Mark Exchange Rate



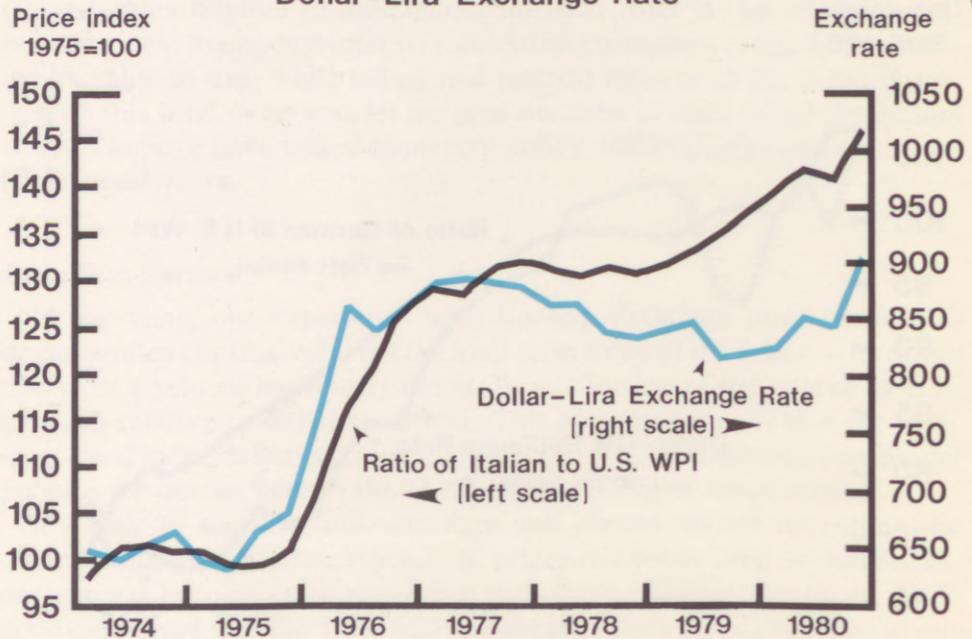
The wholesale-price indices are seasonally adjusted. Data are quarterly from 1974.1 to 1980.4, with the exchange-rate value for February 27, 1981 added.

Money Growth and Exchange Rates

The long-run relationship between inflation rates and exchange rates suggests that U.S. policies toward inflation play a key role in determining the strength and stability of the U.S. dollar. Furthermore, inflation in the long-run is mainly the result of overly rapid money growth. This is not to deny that a variety of factors other than money, such as food and energy costs and mortgage rates, can temporarily affect inflation in the short-run. But the experience of the last twenty years demonstrates conclusively that when a country raises its money growth rate excessively, its inflation rate can be expected to rise over time. This is simply a reflection of the "law of supply and demand," which applies no less to money than to any other commodity. Raising the supply of money relative to the supplies of goods will inevitably lead to inflation.

In 1974 and 1975, U.S. money growth slowed substantially. This helped lead to a slowing of U.S. inflation relative to abroad, and hence to a rise in the dollar's value. Then, when money growth began to accelerate beginning in late 1976, the dollar fell and U.S. inflation later surged. This pattern

Chart 2
Relative Wholesale Prices
and the
Dollar-Lira Exchange Rate



The wholesale-price indices are seasonally adjusted. Data are quarterly from 1974.1 to 1980.4, with the exchange-rate value for February 27, 1981 added.

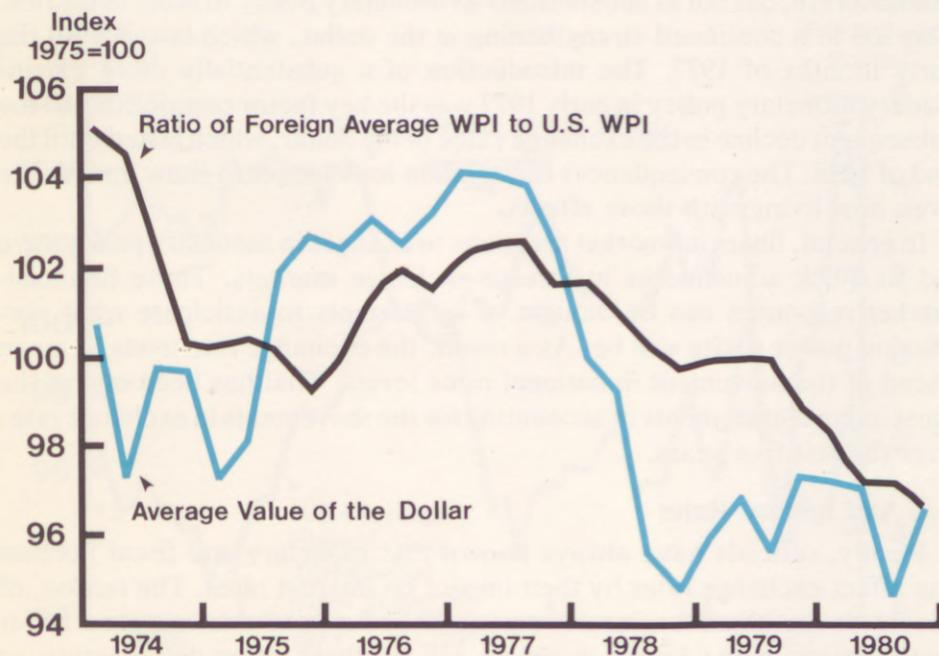
suggests that whether the dollar rises or falls in coming years will depend primarily on relative inflation rates in this country and abroad — which in turn will reflect relative money-growth trends here and abroad.

Short-Run Factors . . .

While it is clear that the long-run path of the dollar is determined by inflation trends, it has also become evident that it can depart substantially from this “purchasing power parity” path in the short-run. However, only fairly recently have we begun to appreciate how monetary policy affects the dollar in the short run by changing flows through our capital account. The capital account’s influence on exchange rates simply reflects the ease with which funds now move among the major industrial nations in response to profit opportunities. As a result, the demand for dollars and other major currencies has come to be dominated in the short-run by investors’ actions.

Now, investors in dollars must reckon with the possibility that the purchasing power of their assets will fall if U.S. inflation rises in the future.

Chart 3
Relative Wholesale Prices
and the
Average Value of the Dollar



The index of average value of the dollar is a trade-weighted average of the dollar’s appreciation or depreciation against the currencies of fifteen trading partners. The ratio of foreign WPI to U.S. WPI was constructed from (trade-weighted) wholesale price indices of six major industrial nations. Data are quarterly averages from 1974.1 to 1980.4.

Naturally, those investors will try to predict future inflation when deciding whether to buy or sell dollars now. This forward-looking character of the foreign-exchange markets means that inflation anticipated for the future affects the dollar immediately by influencing capital flows. This explains why the exchange value of the dollar seems at times to run ahead of, i.e. anticipate, inflation trends. For example, you can see from Chart 3 that the dollar began to rise early in 1975, even before the early 1976 decline in the U.S. inflation rate below the average abroad — i.e., rise in the ratio of foreign to U.S. prices. This dollar strengthening continued until mid-1977, when a major reversal occurred and the dollar declined sharply, well ahead of the relative rise in the U.S. inflation rate — i.e., decline in the ratio of foreign to U.S. prices. In effect, the financial markets were anticipating a change in purchasing power parity, and the forward-looking foreign-exchange market adjusted to it rather quickly.

Some of you may recall that U.S. monetary policy was relatively tight in early 1975. Investors, of course, knew that this slower growth in the U.S. money supply would, in time, reduce the U.S. inflation rate. This increased the incentive to purchase dollar assets at the expense of foreign assets, and led to a large capital inflow and the immediate appreciation of the dollar you can see in Chart 3. U.S. monetary policy eased in the second half of 1975 and into 1976, but not as substantially as monetary policy in other countries. This led to a continued strengthening in the dollar, which lasted until the early months of 1977. The introduction of a substantially more expansionary monetary policy in early 1977 was the key factor contributing to the subsequent decline in the exchange value of the dollar, which lasted until the end of 1978. The consequences for inflation took longer to show up. We are even now living with those effects.

In general, financial-market reactions to changes in monetary policy have led to quick adjustments in foreign-exchange markets. These financial-market responses can be thought of as attempts to anticipate what purchasing power parity will be. As a result, the exchange rate tends to move ahead of the movement in national price levels. That has been one of the most important elements in accounting for the movements in exchange rates over the last five years.

. . . And Interest Rates

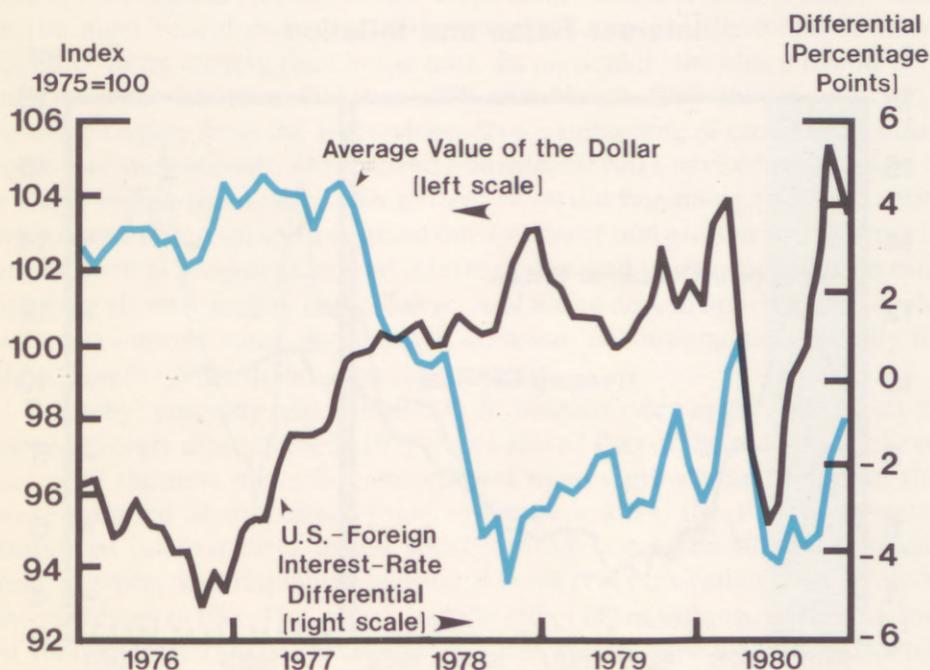
Finally, officials have always known that monetary and fiscal policies can affect exchange rates by their impact on interest rates. The reason, of course, is that the interest rates paid in U.S. financial markets are a major factor determining whether investors will purchase either dollar assets, or assets denominated in other currencies.

However, our experience since 1973 has also shown that the relation between interest rates and the dollar is not as simple as we once thought.

Conventional wisdom says that, when U.S. interest rates rise above those abroad, the dollar also rises; when our interest rates decline, the dollar is supposed to decline with them. Certainly this conventional wisdom has been accurate after October 1979, as you can see from Chart 4. As short-term interest rates here rose above the average abroad between October 1979 and March 1980, the dollar rose with them. When our interest rates fell back during the second quarter of last year, the dollar declined as well. Equally clearly, though, this conventional wisdom did not work nearly as well prior to October 1979. Indeed, rising U.S. interest rates were more often associated with a falling dollar (and vice-versa) — as you can see from Chart 4 for 1977 and 1978.

The divergence in the effects of interest rates on exchange rates can be explained by the existence of two very different factors that can cause interest rates to rise. First, they can rise because of a rise in inflation expect-

Chart 4
Interest Rates and the Average Value of the Dollar



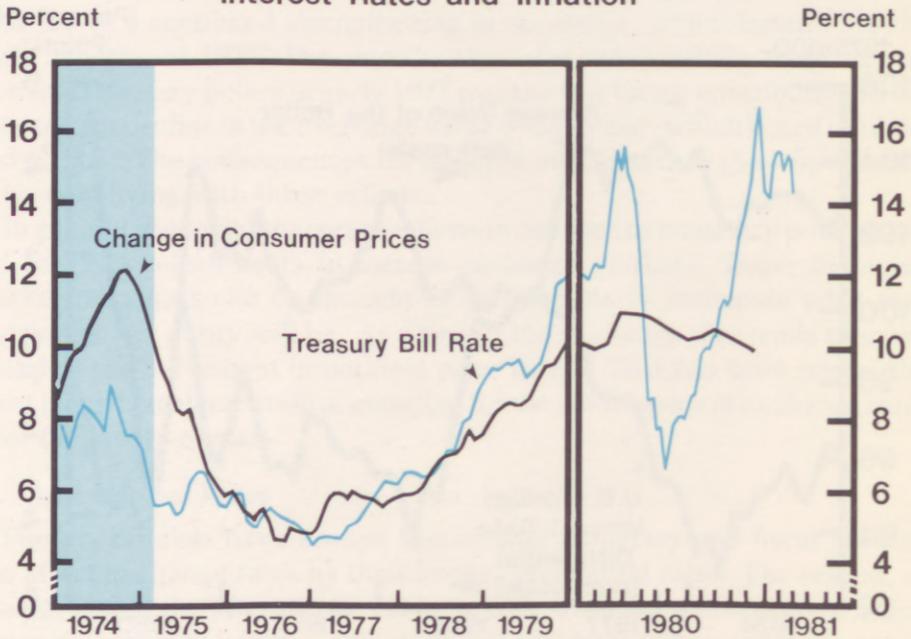
The index of average value of the dollar is a trade-weighted average of the dollar's appreciation or depreciation against the currencies of fifteen trading partners. The interest-rate differential is the difference between the three-month U.S. Eurodollar-deposit rate and a trade-weighted average of three-month Euro-currency rates for six major industrial countries. Both data series are monthly from January 1976 through January 1981.

tations, as lenders demand a higher yield to compensate for the anticipated loss of purchasing power. Second, interest rates can rise because the so-called real interest rate has gone up. This occurs when market rates rise relative to the anticipated inflation rate; by definition this means a rise in the real interest rate, which is simply the difference between the market rate and expected inflation. A rise in real interest rates is normally a temporary phenomenon, which results from unusual demand for credit relative to its available supply.

There is no precise way to separate the expected inflation and the real interest rate components of the observed market interest rate. In Chart 5 an attempt is made to approximate the two influences for the 3-month Treasury bill rate. It shows the actual inflation rate of the last 12 months as a measure of the expected rate of inflation. The real interest rate is then the difference between the actual interest rate and this expected inflation rate.

While either of these two factors can cause U.S. interest rates to rise, they have very different impacts on the exchange rate. When U.S. interest

Chart 5
Interest Rates and Inflation



Change in consumer prices (personal-consumption expenditure deflator) is shown as change from same month a year earlier. Rate for three-month Treasury bills is shown as monthly average in first panel and as weekly average in second panel. Shaded area indicates a recession as defined by the National Bureau of Economic Research.

rates increase simply because inflation is expected to increase, the dollar is likely to fall on the foreign exchanges. In this case, investors move capital out of the U.S. because they know that higher inflation must ultimately lead to a falling dollar. On the other hand, when U.S. real interest rates increase — as they have recently — then investments in the dollar become more attractive, capital flows into the U.S., and the dollar rises on the foreign exchanges. Thus, the conventional wisdom that the dollar rises when U.S. interest rates rise is correct only when the interest-rate increase is due to a rise in *real* interest rates — that is, when the interest-rate hike more than compensates for the rise in the expected inflation rate.

On this basis, we can more easily see why the conventional wisdom about interest rates and the dollar worked after October 1979 but not before, as shown in Chart 4. And as we can also see (Chart 5), U.S. interest rates increased during 1977 and 1978 only in proportion to the rise in the U.S. inflation rate — that is, the real interest rate remained virtually unchanged. Since, as can be seen from Chart 4, the 1977-78 rise in U.S. interest rates relative to those abroad was strictly inflation-induced, it was associated with a fall in the dollar. On the other hand, since October 1979, U.S. interest rates have fluctuated unusually sharply relative to the underlying inflation rate. This suggests that we've had much more variation in real interest rates in the most recent period, causing interest rates and the dollar to move together more closely than in the past. In particular, the sharp rise in U.S. interest rates between October 1979 and March 1980 shown in Chart 5 resulted largely from the Federal Reserve's tightening of credit in an effort to slow money growth. This caused real interest rates to rise here, leading to a sharp rise in the dollar. This pattern reversed beginning in March 1980, when a reduction in credit demand due to slower real growth and the special credit control program lowered interest rates well below the inflation rate, bringing about a decline in the dollar. And we're now in another such cycle, with our interest rates again above inflation, accounting substantially for the strength of the dollar in recent months.

But why, you may ask, did real U.S. interest rates apparently fluctuate more severely after October 1979 than before? Part of the reason, I believe, lies with the new procedures to control money growth and inflation that were adopted at that time. Prior to October 1979, the Federal Reserve stabilized interest rates in the short-term. When credit-market demands rose sharply, we frequently increased bank reserves rather than allowing interest rates to rise. This policy had the effect of smoothing out fluctuations in real interest rates substantially — but at the expense, we ultimately found, of adequate control of money growth and inflation.

Since October 1979, we have allowed short-term interest rates to fluctuate more freely, placing more emphasis on controlling the quantity of

bank reserves than on tightly pegging their cost (the Federal funds rate). Our experience with this new procedure certainly suggests that we will have somewhat more short-term variability in real interest rates, and thus more short-term volatility in the dollar, than we would have expected under the old procedures. However, I believe we must still be very cautious in drawing conclusions from last year's experience about future trends in interest rates and exchange rates. The reason is that other factors besides the Fed's new procedures — such as the credit controls imposed in March 1980 and removed several months later — have contributed to interest-rate fluctuations.

Conclusion — Lessons Learned

What lessons can we learn from our review of the past decade's experience? The most important lesson is that we cannot have a strong and stable dollar without a steady, credible anti-inflation policy. Countries such as Germany and Japan have been much more successful than the U.S. in fighting inflation, and the strength of their currencies against the dollar reflected this fact until the U.S. adopted more vigorous anti-inflation measures.

Second, we've learned that the dollar, and financial markets generally, react increasingly to expected future policies. The day is long past (if it ever was) when the dollar reacted only to current policies and to officials' pronouncements about what they would be in the future. Indeed, we've become painfully aware that the penalty for erratic policies, or policies that lack credibility, can be quite severe in terms of instability in foreign-exchange markets. In a sense, the exchange markets provide a mirror in which policy-makers can see how their policies actually appear to the public at home and abroad. Sometimes that mirror has provided an unflattering picture in recent years.

We've also learned a third lesson — that our new policy of targeting bank reserves in an effort to achieve closer control of money growth may mean somewhat more volatility in short-term interest rates, and hence more short-term fluctuations in the dollar, than we used to encounter. But in my view, the record of the past several years clearly indicates that the costs of high and variable inflation are likely to be much greater than the costs of some increase in the short-run volatility of the dollar. Businesses and individuals engaged in international trade and investment normally must take a long view regarding where the dollar will be in a year's time, or in several years' time. Over this time horizon, the most critical factor affecting the dollar is plainly its long-run trend, which is determined by inflation trends in the U.S. and abroad. Consequently, the benefits of reducing our inflation — such as we hope to achieve with our new procedures — should far outweigh the inconvenience of some increased short-term volatility of the dollar.

In this respect, the dollar can be likened to a ship, and foreign-exchange market participants to its passengers. The passengers can always expect some rocking from the waves and from temporary squalls. But they will plainly be better off if their ship has a rudder and a steady hand at the helm. Stable policy measures provide the surest rudder for the dollar. And the task of policymakers over the next several years is to steer a steady course, for the sake of the dollar and the U.S. economy as a whole.

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