

Policy Choice and Economic Structure

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**Policy Choice and
Economic Structure**

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Policy Choice and Economic Structure

by

John B. Taylor*

International comparisons of the economic performance of different countries are a valuable source of information for making judgments about the effects of economic policy. A policy change which has appeared to improve economic performance abroad might be tried in the hope of a similar success at home. Similarly, failure abroad may serve as a useful warning at home. However, an analysis which uses international evidence to draw recommendations for policy should take full account of "non-policy"

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or “structural” differences between countries. Structural differences—arising from behavioral, technological, or institutional factors—themselves influence economic performance and, more significantly, may prevent an economic policy which was successful at one time and place from being successful at another. Sorting out the effects of economic *policy choice* from economic *structure* is a prerequisite to the effective use of international comparisons.

In this paper I report on an econometric approach to sorting out policy choice from economic structure in a comparison of *macroeconomic* performance in several large OECD countries. In particular, the aim is to determine whether international differences in *cyclical fluctuations in inflation and real GNP* are due to policy differences in monetary and fiscal procedures, or to structural differences in wage and price setting arrangements and the susceptibility of each country to external shocks. Since the approach is econometric, it yields quantitative measures of *how much* of the difference between countries is attributable to each of these sources. It suggests that a major part of the reason why many countries find great difficulties in achieving greater inflation stability is that they would suffer a large increase in fluctuations in output because of the structure of their economies.

The criterion of economic performance used in this study is magnitude of fluctuations in inflation and output around longer term secular trends. The secular trends themselves are not the immediate focus of the analysis, although the results have some secular implications. Economic performance is rated poor according to this criterion if the fluctuations are large and long-lasting; a good rating results if the fluctuations are small and temporary. The ratings are most reliable if recorded over a time span which includes several cyclical fluctuations.

The macroeconomic policies I am concerned with in this context—usually referred to as “short-term stabilization policies”—have the objective of holding down the size of these cyclical fluctuations. Although every country would like to use these stabilization policies to minimize *both* inflation and output fluctuations, the evidence suggests that there is a macroeconomic tradeoff which forces a choice between the two. When a country is up against this tradeoff, smaller fluctuations in output can only be achieved through larger fluctuations in inflation. Since some countries have greater concern with inflation stability while others have greater concern with output stability, they will naturally choose different policies when faced with this tradeoff. Hence, policy choice will differ across countries.

This tradeoff between fluctuations in output and inflation has been discussed in recent theoretical and empirical research¹, and can be viewed as successor to the widely discredited Phillips curve tradeoff between the *levels* of inflation and output. As discussed in more detail below, the tradeoff

occurs because fluctuations in inflation can smooth out cyclical fluctuations in output. The general features of such a tradeoff are succinctly summarized in Arthur Okun's recently published book: "... cyclical fluctuations in the inflation rate around the secular average are an automatic stabilizer of output and employment. The weaker these cyclical responses in the inflation rate are, the more fiscal and monetary policies are called upon to provide the stabilization."² The use of monetary and fiscal policy to *accommodate* cyclical fluctuations in inflation will result in smaller business cycle fluctuations. Greater output stability (or inflation stability) can be "bought" at the cost of price (or output stability). The policy is how accommodative aggregate demand policy should be; and much will depend on the terms of the tradeoff.

1. The Importance of Cyclical Fluctuations

Cyclical fluctuations in inflation have not received as much attention in international comparisons as have cyclical fluctuations in output and employment. Some remarks are therefore in order about why such fluctuations are an important factor in judging macroeconomic performance—perhaps more important than the secular inflation rate. Cyclical fluctuations in inflation reduce economic efficiency by decreasing the predictability of future prices. To quote Okun again, "Cyclical fluctuations in the inflation rate introduce an enforced lottery and haphazard redistribution of income and wealth similar to those emerging from a shift in the secular inflation rate. These detract from transactions efficiency and impose social costs."³ Moreover, cyclical fluctuations in inflation have become quantitatively significant in recent years. In the United States, for example, the inflation rate for consumer goods averaged 6 percent during the 1970's, but rose to quarterly highs of 12 percent in 1974 and again in 1980, and reached cyclical lows of 3 and 4 percent in 1971 and 1976. International differences in inflation fluctuations have also been large and significant. For example, during the 1970's the standard deviation of inflation was 1.5 percent in Germany, 2.7 percent in the United States, and 5.6 percent in the United Kingdom. In a world of flexible exchange rates, these international differences in cyclical inflation behavior generate cyclical fluctuations in exchange rates between countries and have implications for international coordination of macroeconomic policies.

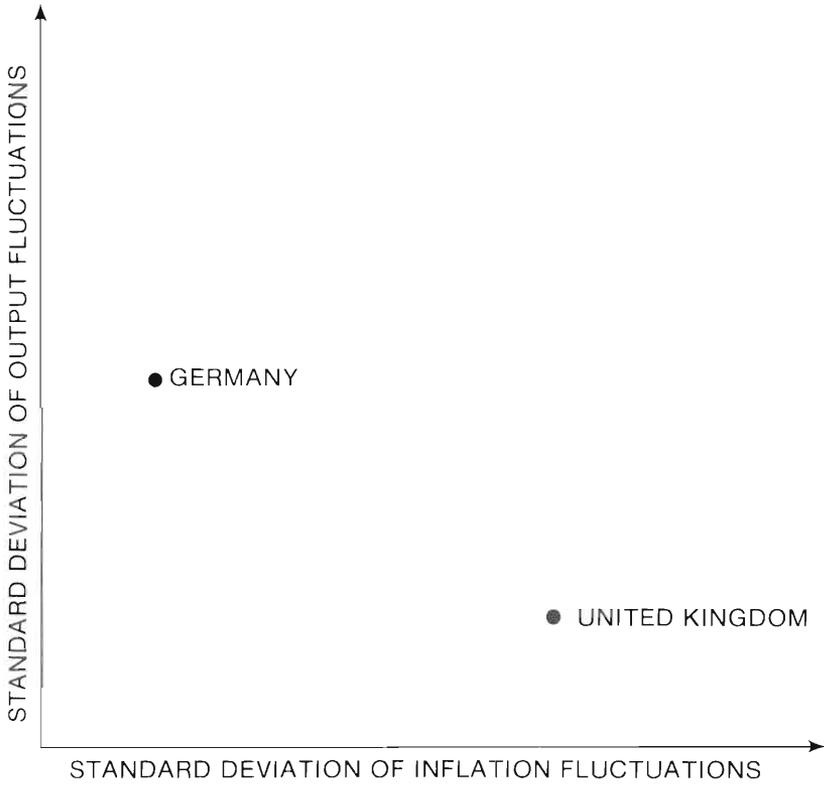
Sorting out these inflation fluctuations into policy and structural components also has implications for international coordination. If structural differences are great, an international system which emphasizes policy coordination may require compromises in policy choice which are

not feasible. The debates between the United States and several European countries over the appropriate aggregate demand policy following the 1974-75 recession, and again in 1980-81, are two illustrative episodes. The ability to reach compromise agreements in such discussions will depend on whether the observed differences in economic performance are due to policy choices or to economic structure. In reviewing the earlier episode for the Federal Reserve Board, Robert Gordon (1979) noted that "It has been suggested, in fact, that the slower post-1975 recovery that occurred in most OECD countries (relative to the United States) resulted not from a different 'taste for avoiding inflation' but rather from a different set of wage-setting institutions that cripple the output-creating impact of stimulative aggregate demand policy."

The analysis proceeds as follows: In the next section, the general procedure for sorting out policy choice from structure are illustrated using graphical techniques. The reasons for a tradeoff between inflation and output fluctuations are outlined in Section 2. The quantitative results are reported in Section 3 and focus on six OECD countries: Canada, Germany, Italy, Sweden, the United Kingdom, and the United States. Implications of the results are then summarized in the final section. The tradeoff is represented algebraically in the Appendix.

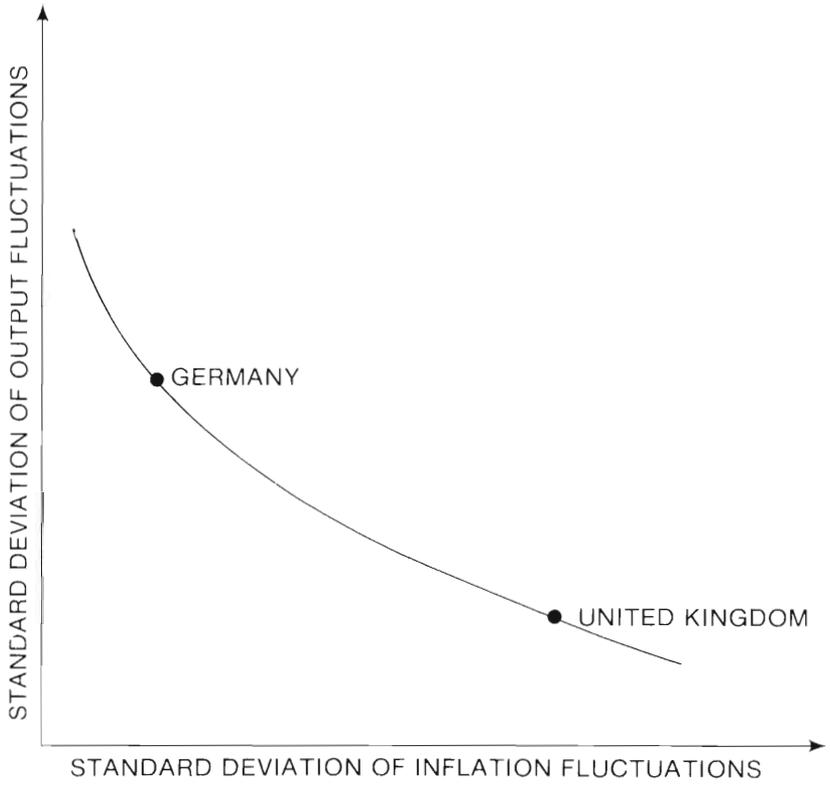
2. Methodology

The general method for distinguishing between policy and structure can be illustrated graphically. In Figure 1, two countries—Germany and the United Kingdom, for the sake of example—are located graphically according to their macroeconomic performance as measured by inflation and output fluctuations. The time period is 1955-1975. The magnitude of fluctuations in output (real GNP relative to a secular trend) is on the vertical axis, while the magnitude of fluctuations in inflation (the GNP deflator relative to a secular trend) is on the horizontal axis.⁴ Movements above and to the right represent deterioration of economic performance. As Figure 1 indicates, Germany has experienced relatively large output fluctuations with small inflation fluctuations. The United Kingdom is at the opposite end of the chart: relatively low output fluctuations and high inflation fluctuations. The relative position of Germany and the United Kingdom on this chart may correspond to popular views about macroeconomic policy choice in the two countries. Our objective is to formally determine whether these relative positions are due to policy choice alone, or whether wage-setting arrangements and other elements of the economic structure are factors as well. For this, we need the policy tradeoff.



A COMPARISON OF MACROECONOMIC PERFORMANCE IN TWO COUNTRIES, 1955-1975

FIGURE 1



TWO COUNTRIES FACING THE SAME TRADEOFF:
INTERNATIONAL DIFFERENCES IN MACROECONOMIC
PERFORMANCE ARE DUE SOLELY TO POLICY CHOICE

FIGURE 2

The rationale for this tradeoff between inflation and output fluctuations is provided later in the paper. But for the purposes of illustrating the methodology we can take such a tradeoff as given and represent it graphically in a diagram similar to Figure 1. An example of such a tradeoff is shown in Figure 2 superimposed on the same two points which were used to represent the experience of Germany and the United Kingdom. The tradeoff indicates various combinations of inflation and output stability, which are assumed to be feasible. Points to the right and above the tradeoff are attainable but are dominated by points on the tradeoff. It would be inefficient for a government to choose a policy in this upper region. Such inefficient results could arise, for example, if the monetary authorities introduced pure randomness in monetary policy—above and beyond the degree of randomness which is inherent in the technology of monetary control. Throughout this study we will assume (as an approximation, of course) that such inefficiencies are relatively small in actual policy choice, and that uncertainty in the control of aggregate demand policy is at a technological or institutional minimum. This minimum differs across countries and is part of the structure. According to this interpretation, policy choice involves picking a combination of output and inflations *on* the tradeoff curve as drawn in Figure 2. Both Germany and the United Kingdom could choose any point on it and adjust monetary policy accordingly.

Social preferences for inflation stability versus output stability could be represented through the use of “social indifference curves” on the same diagram. Although not explicitly shown here, these curves would also be negatively sloped, indicating social indifference of a move from a high to a low inflation stability point only if output stability improved. If social preferences could be represented by an index which combined inflation fluctuations and output fluctuations linearly, (the analogy of a “misery” or “discomfort” index), then the indifference curve would be a straight downward sloping line. A shift of the line downward and to the left would represent a higher level of utility.

The tradeoff shown in Figure 2 passes through both countries’ actual performance points. If this were indeed the tradeoff which each country faced, then we could conclude that any difference in their macroeconomic performance was due entirely to policy choice. According to the example, German policy could be shifted in a less inflation-conscious direction with the result being an “economic performance” in this particular sense much like that of the U.K. Alternatively, British policy could be shifted in a more inflation-conscious direction to match that of Germany. Or, one could imagine a compromise shift—if, for example, that were thought to be important for international purposes—in which both Germany and the United Kingdom move toward the center. The main point, however, is that with each country facing the same structural tradeoff we could attribute all

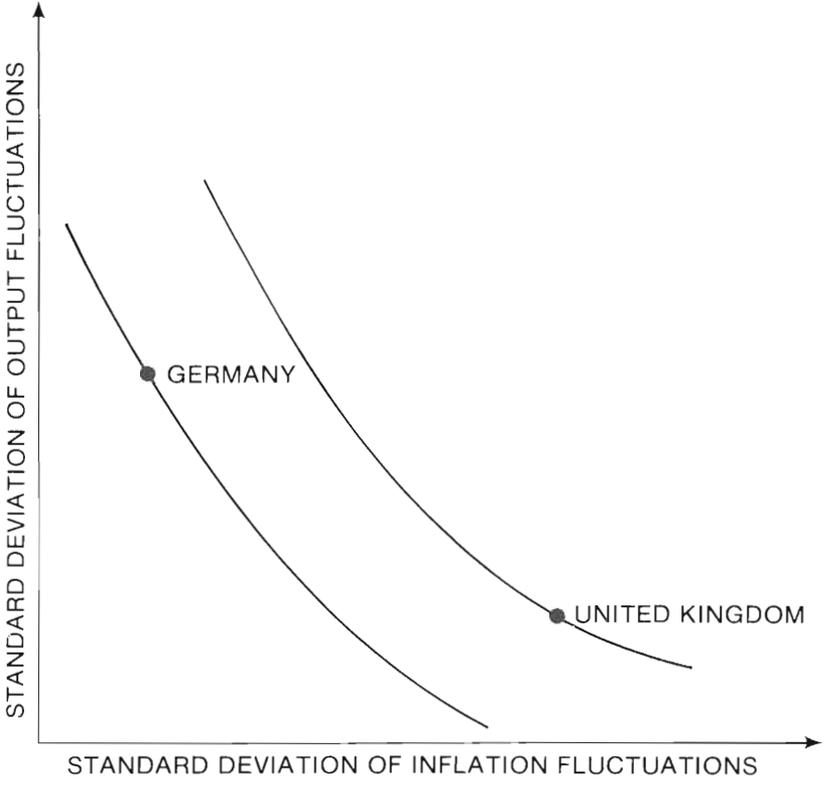
international differences to policy choice.

The example in Figure 2 is rather special, however. There is no *a priori* reason to suppose that Germany and the United Kingdom in fact face the same tradeoff. We would expect to find each country facing a different tradeoff, as illustrated in Figure 3. In this illustration it is clear that Germany can opt for smaller fluctuations in output and inflation. Even if both countries had the same preferences (as indicated, for example, by points on their social indifference curves with the same slope) their macroeconomic “performance” would be different. Moreover, by defining preferences explicitly it is possible to measure how much of the difference is due to policy. Hence, this simple graphical example can be translated into a formal econometric procedure.

This general approach of identifying policy choice with *movements along* a tradeoff, and structural differences with *shifts* in the tradeoff is not new to macroeconomics. In fact, the old-style Phillips curve relationship defining achievable *levels* of inflation and output has been used as a tradeoff for this purpose. By determining what the Phillips curve tradeoff was for a particular country, one could define policy choice by simply observing what point on the Phillips curve policy-makers chose. For international comparisons one could locate Phillips curve relationships for several countries. Different locations for these Phillips curves would then represent different structures. Drawing the analogy between the policy analysis performed with the Phillips curve and that proposed above may be of some help in interpreting our results. However, it should be emphasized that the “cyclical fluctuations” tradeoff, illustrated in Figures 1 through 3, is a much different and independent representation of the constraints faced by macroeconomic policymakers. In particular, the fact that the long-run Phillips curve no longer is empirically relevant has no implication for the tradeoff shown in Figures 2 and 3.

3. Policy Tradeoff Between Inflation and Output Fluctuations

The reasons for supposing that there is a tradeoff are based on two macroeconomic principles, both of which have considerable theoretical and empirical support. First, changes in inflation depend, among other things, on the degree of slack in the economy. In particular, inflation rises relative to *recent* average inflation rates when unemployment is below normal levels (that is, during cyclical boom periods when real GNP rises above its secular growth path), and inflation declines relative to *recent* average inflation rates when unemployment is above normal levels (that is, during cyclical slumps when real GNP falls below its secular growth path).



TWO COUNTRIES FACING DIFFERENT TRADEOFFS:
INTERNATIONAL DIFFERENCES IN MACROECONOMIC
PERFORMANCES ARE DUE TO ECONOMIC STRUCTURE
AND POLICY CHOICE

FIGURE 3

Moreover, there is a “persistence” or “inertia” in inflation which causes the increase or decrease in inflation to occur with a lag. This inertia is due to expectations—firms or workers are reluctant to reduce their demands for price and wage increases because they expect inflation to keep going, as well as to contracts—some firms and workers are precommitted to wage or price increases under formal or informal contracts which cannot easily be broken. The speed at which inflation rises or falls in response to the market pressures or slack depends on whether expectations or contracts are predominant factors in the inertia, a point to which I return below.

There are a number of familiar reasons for this sensitivity of inflation to the degree of slack in markets, however small it may be because of expectations and contracts. The relative bargaining position of buyers and sellers depends on market conditions. Unions will be reluctant to demand higher rates of wage increase if unemployment is high. Firms will not have to bid up wages to recruit workers under slack market conditions, but may try to outbid other firms if labor markets are tight. To be sure, the degree of market tightness is not the only factor in explaining changes in the rate of inflation. Shifts in expectations due to a perceived change in future money growth, large changes in relative prices as they pass through the price system, exchange rate changes, minimum wage changes, and the rate of growth of real GNP have all been shown to have effects on the rate of inflation. These other shocks to inflation are important. They sometimes mask and make it difficult to detect the sensitivity of inflation to the state of the economy, and they sometimes require an offsetting policy response which exploits this latter sensitivity if they are not to be propagated into higher rates of secular inflation. But these other factors do not diminish the policy importance of the sensitivity of inflation to overall market conditions.

The *second* macroeconomic principle relates to aggregate demand policy in general (both fiscal and monetary), but I will focus on monetary policy here, and rely on the relationship between money and economic activity. There is no shortage of theoretical or empirical research to show that there is a strong relationship between the level of *real* money balances—total money divided by prices—and the level of *real* GNP. The relationship can shift because of changes in interest rates, technological innovations, or even fiscal policy. Such velocity shifts introduce an element of uncertainty in the relationship, but, as with the shocks to the inflation relationship, they do not eliminate the relationship or make it irrelevant for policy.

The importance of the relationship for our purposes is the connection it gives between past changes in inflation and the state of the economy—sort of an inverse to the first relationship I discussed. If there is an increase in inflation with no change in money, then, according to this second relationship, there must be a decline in real GNP relative to trend: real money

balances have declined. This decline in real GNP relative to trend will have an automatic stabilizing effect on inflation because the increase market slack will tend to reduce the rate of inflation. This is the automatic stabilizer effect mentioned in the passage from Okun's book referred to above. Clearly the stabilization works in reverse when there is a decline in inflation.

Monetary policy enters the picture because it in turn can respond to the increase in inflation, and thereby influence the overall response of real GNP. By accommodating the rise in inflation (that is, increasing the rate of money growth), the monetary authorities can mitigate or even offset entirely the effect on real GNP. In doing so, the monetary authorities would clearly alter the stabilization mechanism. In the extreme of full accommodation they would eliminate it. Of course, the monetary response could work to reinforce the automatic stabilizer. This could be accomplished by regularly decreasing the rate of money growth when inflation rises, and increasing it when inflation falls. Note that the monetarist constant growth rate rule lets the automatic stabilizer work unaltered. An interventionist monetary strategy attempts to tune-up or tune-down the automatic stabilizing mechanism. Empirical evidence indicates that most countries have chosen a policy strategy which is at least partially accommodative on average during the last 20 years. They have tuned down the automatic stabilizer.

Given these two central relationships the tradeoff between inflation fluctuations and output fluctuations can be readily explained. Consider some hypothetical episodes. Suppose a country faces a sharp shock, such as a rise in import prices or some excessively large wage negotiation, either of which will tend to raise the inflation rate in the short run. Suppose also that prior to the shock no domestic pressures to lower the inflation rate further and real GNP and employment are on their potential growth trends. In this situation, policy makers are faced with an important decision: increase inflation by relaxing monetary policy, or accommodate it? If policy does not fully accommodate this increase in inflation by raising the growth rate of nominal GNP by the full amount of the shock to prices, then real GNP must drop relative to its trend and unemployment must increase. This recession (whether it is a full-fledged recession or a growth recession is not relevant here) will tend to reduce the rate of inflation. In effect, the recession will prevent the price increase from perpetuating itself, and thereby will help to stabilize inflation behavior. The larger the recession, the smaller will be the bulge in inflation. If on the other hand, a very accommodative policy is attempted in order to avoid all but a minor recession, then the upward swing in inflation will be quite large and would persist for an extended period of time. In effect, policymakers face a tradeoff between the size of the downward swing in real GNP and the size of the upward swing in inflation. This was the choice countries did, of course, face after the oil shock of 1973-74.

Other types of shocks could give rise to similar swings in output and

prices with policymakers facing a similar tradeoff. For example, a mistake in money growth policy or a financial innovation increasing velocity could lead to excess aggregate demand which will give rise to an acceleration in inflation. As in the earlier example, policymakers face a choice between moderating this acceleration in inflation by letting the economy slow before its potential growth path, or by tolerating the inflation and thereby avoiding a business downturn. Shocks could occur in opposite directions as well, and while there is no reason to expect the argument to be perfectly symmetric, a decline in inflation and a rise in real GNP would be expected when such shocks occur.

These hypothetical situations are different from the actual experiences of most industrialized countries in that shocks are rarely isolated episodes; they occur almost continuously as world prices shift, financial innovations occur, and tastes and technologies change. Large shocks—such as the oil price shocks of 1973 and 1979—are less frequent and more readily identifiable than the smaller disturbances which steadily influence the behavior of even relatively closed economies. But whether they are identifiable or not, the degree of accommodation which policymakers choose for the response of the aggregate demand policies will determine whether the “business cycle” swings which are set off by these shocks display output stability or price stability, or more accurately how much of one type of stability is traded off against the other.

As mentioned in the introduction, because this type of policy tradeoff requires the comparison of cyclical swings, it is necessary to take a longer perspective than is usual in international comparisons. In particular it would be misleading to consider only the recovery of the major industrialized economies from the 1974-75 recession. A single recovery is only part of one business cycle. The kind of comparison referred to above requires examining the policy choices and the resulting economic performance over several business cycle swings. This longer perspective appears to make this view of the policy tradeoff less relevant to the day-to-day decisions of policymaking officials, who frequently cannot afford to take a longer run perspective. But for those interested in longer run economic performance or with issues of monetary reform (international or domestic) which establish game rules of policymaking behavior, such a perspective seems particularly appropriate.

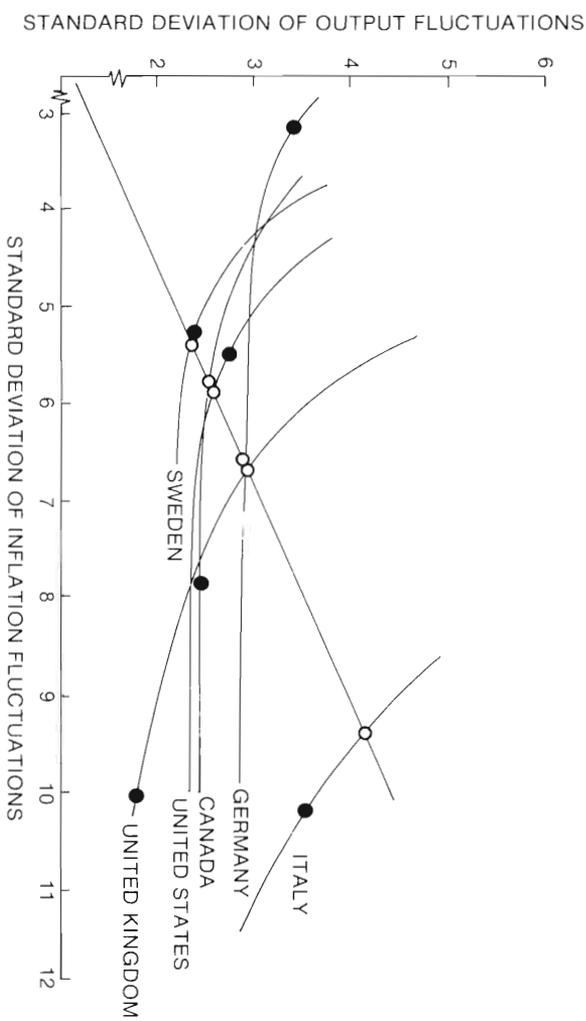
To sum up then, policymakers must decide how much accommodation to provide. By moving toward a more accommodative policy the monetary authorities can reduce the impact of an inflation shock on real GNP. The fluctuations in real GNP are smoothed. This, however, reduces the stabilization effect on inflation. The fluctuations in inflation are increased. Graphically the movement is along the tradeoff toward smaller output fluctuations and larger inflation fluctuations, a move down and to the right,

in the direction of the United Kingdom in Figure 2. A less accommodative policy will bring about the opposite movement along the tradeoff, in the direction of Germany in Figure 2.

As mentioned above, expectations play an important role in determining how fast inflation will decelerate during a cyclical downturn. For example, workers in wage negotiations may expect that any wage adjustment to a higher price level will be accommodated by the policymakers, and therefore they will have less incentive to hold wage settlements down. Hence, expectation of accommodation may tend to prolong the persistence of a given price shock. These expectations will therefore affect the terms of the tradeoff represented in Figure 2. If possible it is desirable to account for these expectations effects when obtaining quantitative estimates of the tradeoffs. Otherwise changes in expectations will shift this tradeoff much as expectations have already shifted the Phillips curve tradeoff. In the econometric models which form the basis of the comparisons of economic performance reported in this paper, an attempt is made to account for this expectations effect by assuming that (on average) workers and firms expect as much accommodation as the policymakers normally provide. This approach has been referred to as the "rational expectations technique" in recent research on macroeconomic policy. (The general procedure can be most efficiently illustrated by introducing some simple algebra which is shown in the Appendix).

4. Empirical Tradeoffs

In Figure 4 tradeoff curves for 6 OECD countries are presented. On each curve the darkened circle represents the actual economic performance of each of the countries. The time period for which the econometric parameters were derived is 1955-75. This shows that the relative position of the actual performance of Germany and the United Kingdom is just as in the examples in Figures 1 through 3—Germany having better price performance but worse output performance. (The ray extending from the origin should be ignored for now.) Note that the estimated tradeoffs for these two countries are somewhat different than in the examples: they cross about midway between the two actual performance points. The intriguing inference is that it would be possible for Germany and the United Kingdom to experience the same "economic performance." Germany would have to become more accommodative and Britain would have to become less accommodative. At this mutually consistent point, however (which might be desirable on international grounds), they would not both be maximizing their social welfare functions.



POLICY TRADEOFFS FOR SIX COUNTRIES

- ACTUAL POLICY, 1955-1975
- POLICY UNDER A COMPROMISED SET OF IDENTICAL PREFERENCES DETERMINED BY AVERAGING THE OBSERVED PREFERENCES OF EACH COUNTRY

NOTES POLICY TRADEOFFS ARE COMPUTED USING AN ECONOMETRIC FRAMEWORK DESCRIBED IN THE TEXT WITH STRUCTURAL PARAMETER ESTIMATED FOR EACH COUNTRY DURING THE 1955-1957 PERIOD

FIGURE 4

The actual performances of the 6 countries in Figure 4 are substantially different from each other, the “best” being Sweden and the “worst” Italy. However their tradeoff curves are also quite different. This demonstrates that these differences are not entirely due to policy choice. Only the United States and Canada have tradeoff curves which are nearly the same. For these two countries a large part of the difference between their economic performance can be attributed to policy choice, with Canada choosing a relatively accommodative policy and the United States choosing a relatively non-accommodative policy. It is interesting that Canada is located on a very flat part of the tradeoff curve. According to these results Canadian economic policy could have been made considerably less accommodative with only a negligible deterioration of output performance, and big gains in inflation performance.

Italy appears to have the most unfavorable tradeoff in the group. According to these results, the difference between Italy and the other countries in the group is mostly due to structure. Unless this tradeoff curve shifts, the economic performance of Italy would not match that of Germany if the Italians chose a less accommodative policy.

5. Defining Preferences

Although it is evident from Figure 4 that social preferences cannot explain all international differences, determining *how much* they explain requires making some assumptions about tastes.⁵

We use these two criteria to “hold tastes constant” when comparing economic performance across countries: (1) countries are defined to have the same taste when they choose the same ratio of price stability to output stability (measured in terms of standard deviations of the fluctuations), and (2) countries are defined to have the same taste when they choose the same “marginal rate of substitution” between output and price stability; in terms of Figure 4, this occurs when countries choose points on the tradeoff curve with the same slope.

In Figure 4 we indicate how the first preference assumption would be taken into account, by extending a ray from the origin of the diagram with a slope determined by the average of the ratios of inflation fluctuations to output fluctuation (of all countries.) Along this ray each country would have the same ratio of output to inflation stability as the average of all countries during the observation period; but some would have far better “performances” than others. If each country had average tastes with regard to output stability vs. inflation stability (by this definition), there would still be significant difference in economic performance; but the differences in price

stability would be considerably smaller, and differences in output stability would be larger. Specific numerical values are given in Table 1 and show the extent of the reduction in the price stability differences. For comparison, Table 1 also presents the results that come from assuming that the marginal rates of substitution are the same (preference assumption 2). One interesting result is that, on this evidence, fluctuations in inflation rates among countries could be reduced significantly without aggravating differences in output fluctuations, if each country adopted "average tastes."

Regardless of which preference assumption is used, these results indicate that much of the difference in economic performance across countries is due to structural differences rather than to policy (or taste) differences. In particular, it is interesting to observe the extent to which high price stability in Germany appears to be due to a favorable economic structure rather than solely to more "dislike" for price instability. Germany can buy a high degree of inflation stability at the cost of only a small increase in output fluctuation, whereas other countries, such as Italy at one end of the scale and Sweden at the other, have to sacrifice a great deal of output stability for a given improvement in inflation volatility. Such observations are dependent on one's definition of taste, however, as well as on this particular accounting approach. But whatever particular definitions or procedures are used, these findings indicate the potential value of formally attempting to sort out the reasons for differences in international economic performance.

6. Concluding Remarks

The macroeconomic performance of several large industrial countries has been compared by examining their experience with fluctuations in output and inflation during the post-war period. Measured in terms of these fluctuations, macroeconomic performance has differed widely among the countries. Some have maintained relatively small fluctuations in inflation with relatively large fluctuations in output. Others have scored better on output stabilization and worse on inflation stabilization. Still others have done poorly on both accounts.

The results suggest that an important source of the differences in economic performance are large structural differences between countries. The tradeoff between inflation and output stability is different in each country. Nevertheless, the evidence suggests that the difference in inflation fluctuations could be reduced without widening the difference in output fluctuations, if each country conformed to average tastes.

These results are based on an historical analysis, and in particular on economic estimates of the tradeoff between inflation fluctuations and

Table 1

**Impact of Policy Preferences on Output and Price Stability
(1955-1975)**

	Canada	Germany	Italy	Sweden	U.K.	U.S.	Variance of Stability Measures Across Countries
Actual Performance:							
Output Stability	2.4	3.1	3.5	2.4	1.8	2.7	.36
Price Stability	7.8	3.6	10.3	5.3	10.0	5.4	7.50
Preference Assumption 1:							
Output Stability	2.5	2.9	4.1	2.4	3.0	2.6	.36
Price Stability	5.7	6.6	9.4	5.3	6.7	5.8	2.20
Preference Assumption 2:							
Output Stability	2.7	3.2	3.0	2.4	2.4	2.6	.11
Price Stability	4.8	3.6	11.6	5.2	7.8	5.6	8.29

Notes to Table: The measures of output and price stability are standard deviation of the percentage fluctuation of real GNP and the GNP deflator around trend. Under preference assumption 1 all countries have the same ratio of output stability to price stability. Under preference assumption 2 all countries have the same marginal rate of substitution between output and price stability.

output fluctuations. Like all econometric estimates, they should be used with care when evaluating policy proposals for the future. While the econometric methods have attempted to take account of expectation shifts using the new “rational expectations” approach, there is no guarantee that other types of structural shifts might not take place. In conclusion, therefore, it might be wise to step back from the quantitative details reported here, and emphasize the general qualitative policy implications which are implicit in the analysis. The old-style Phillips curve tradeoff between the *levels* of inflation and unemployment (or output) provides an extremely poor guide to macroeconomic policy evaluation, and it should be replaced in policy discussions by tradeoff between the *fluctuations* in inflation and unemployment (or output). This fluctuations-tradeoff places a constraint on macroeconomic policy choice which does not disappear as expectations of inflation shift. Moreover, there is no reason to expect this constraint to be the same in all countries, for it depends on wage and price setting arrangements and other elements which differ across countries. In fact, the results reported in this paper indicate that the constraints do differ among the large industrialized countries, and therefore raise significant issues for international policy coordination as well as for policy choice within each country.⁶

Appendix

A Simple Algebraic Illustration

The principle macroeconomic relationships previously discussed can be represented algebraically as follows: Let π equal the current rate of inflation, y equal the level of real GNP, and y^* equal the secular trend (potential) GNP. The symbol π_{-1} indicates the rate of inflation lagged one period. Then the first relationship between the change in inflation and the level of GNP relative to trend can be represented by:

$$(1) \quad \pi = \pi_{-1} + c(y - y^*) + e$$

where c is a positive parameter indicating the sensitivity of inflation to the degree of economic slack, and e is a measure of the other factors influencing inflation (the shocks mentioned above). Equation (1) is special in that the persistence or inertia of inflation is captured solely through one lagged term on the right hand side. Moreover, the equation is not specific about the reason for that persistence term; it makes a difference whether it is expectational or contractual. It is possible, however, to model this difference using the c parameter. A higher c will indicate that expectations are more predominant while a lower c will indicate that contracts are more predominant. The rationale for modelling the distinction between contracts and expectations using this parameter can be shown formally using an explicit model of contracts and deriving its reduced form. Such a derivation is provided in Taylor (1979) and shows that the degree of responsiveness of inflation to economic slack will increase, the more important are expectations. The same derivation will show that this responsiveness depends also on the degree of accommodation being used in monetary policy. Hence the parameter c will change when the monetary strategy being employed changes. It is this connection which enables the econometric procedures to incorporate the effects of expectations when calculating the tradeoff. For the purpose of the current derivations, however, it is sufficient to know that c is an estimable function of the degree of accommodation (the more accommodation the smaller is c) and that this functional relationship is taken into account in the econometric estimation of the tradeoff. Algebraically, $c = f(a)$ where a is the accommodation parameter to be defined below.

The second relationship between inflation and real GNP discussed in Section 2 (in conjunction with a monetary strategy) tells us how real income responds to changes in inflation. This can be represented by

$$(2) \quad y = y^* - a(\pi - \bar{\pi}) + v$$

where a is the parameter depending on the degree of accommodation and where v is a shock variable representing unanticipated velocity shocks, or unavoidable errors in the conduct of aggregate demand policy. The term $\bar{\pi}$ represents the secular inflation rate to which the policymakers would like the actual inflation rate to return after a shock or policy mistake. It can be interpreted as the long-run target inflation rate about which fluctuations will occur, and which depends on the long-run average rate of money growth. According to equation (2) an increase in inflation above this desired level brings forth a decline in real GNP below its growing secular level y^* . The degree of decline in real GNP depends on how much accommodation is provided. Full accommodation would correspond to $a=0$. For the automatic stabilizer which would be achieved under a monetarist rule, $a>0$. This parameter could be made larger than what is achieved under the monetarist constant growth rate rule, by decreasing money growth when there is a positive inflation shock.

The magnitude of the fluctuations in e and v , summarized here by their variances σ_e^2 and σ_v^2 , as well as the parameters of f , define the location of the tradeoff curve. These are the *structural* parameters. (Note that by defining the variance of v as a structural parameter we are implicitly assuming that aggregate demand policy errors have reached a technological or institutional minimum). The parameter a on the other hand is a policy parameter. It determines the location on the tradeoff curve. To see this, suppose that e and v are uncorrelated over time and with each other. Then by subtracting π from both sides of equation (1) and substituting for $y-y^*$ in equation (1) using equation (2), we get

$$(3) \quad \pi - \bar{\pi} = (1-ac)(\pi_{-1} - \bar{\pi}) + e + cv \quad .$$

This simple dynamic equation illustrates the automatic stabilizing features of the economy. As long as $0 < ac < 1$ an inflation shock of one percent above target results in a smaller deviation next period: $(1-ac)$ percent; subsequently an even smaller deviation next period: $(1-ac)^2$ percent; and so on.

When equation (3) is being continuously disturbed by inflation and aggregate demand shocks with variances σ_e^2 and σ_v^2 , the variance of $\pi - \bar{\pi}$ is given by

$$(4) \quad \frac{\sigma_e^2 + c^2 \sigma_v^2}{1 - (1-ac)^2} \quad ,$$

and therefore from (2) the variance of real GNP relative to trend ($y-y^*$) is given by

$$(5) \quad a^2 \left(\frac{\sigma_e^2 + c^2 \sigma_v^2}{1 - (1-ac)^2} \right) + \sigma_v^2 \quad .$$

The tradeoff curve in Figure 2 is simply a plot of (4) versus (5) as the parameter a is increased from 0. From (4) we see that (if we hold c constant), as the parameter a is increased (less accommodation), the variance of the inflation rate declines and the variance of real GNP about trend falls. These general features continue to hold when one incorporates the effect of a changing a -parameter on the c -parameter, though, of course, the magnitudes will be different.

The parameters σ_c^2 and σ_v^2 , and c , or their analogues in a more detailed economic model can be estimated for different countries. From these, a tradeoff curve can be constructed using expressions (4) and (5). Moreover, the parameter a can also be estimated, enabling us to determine what point on the tradeoff curve a given country has chosen. Except for sampling error this point will correspond exactly with the actual economic performance of the country. (In practice sampling error is small so that the points correspond very closely). In the next section I construct such tradeoff curves making use of parameter values which I estimated previously and reported in Taylor (1980). The econometric estimates are based on a model very similar in spirit to that presented in this section, except that the connection between the policy rule and the parameters is explicitly derived and estimated. Readers interested in the technical details of the estimation are referred to that paper.

References

- Baumol, W. J. (1977) *Economic Theory and Operations Analysis*, fourth edition, Prentice-Hall, New Jersey.
- Dornbusch, R. (1979) *Open Economy Macroeconomics*, Basis Books, New York.
- Gordon, R. J. (1979) "Monetary Policy and the 1979 Supply Shock," NBER Working Paper No. 418, Cambridge, Mass.
- Okun, A.M. (1981) *Prices and Quantities: A Macroeconomic Analysis*, Brookings Institution, Washington, D.C.
- Taylor, J. B. (1979) "Staggered Wage Setting in a Macro Model," *American Economic Review*, May, 108-113.
- Taylor, J. B. (1980) "Output and Price Stability: An International Comparison," *Journal of Economic Dynamics and Control*, February, 109-132.
- Taylor, J. B. (1982) "Macroeconomic Tradeoffs in an International Economy with Rational Expectations," forthcoming in W. Hildenbrand (ed.) *Advances in Econometrics*, Cambridge University Press, Cambridge, England.

Footnotes

- ¹ See Taylor (1979) for example. The empirical analysis which forms the basis of the quantitative measures reported below is described in Taylor (1980).
- ² A.M. Okun, *Prices and Quantities: A Macroeconomic Analysis* (Washington, D.C.: Brookings Institute, 1981), p. 286.
- ³ *Ibid.*, p. 985.
- ⁴ The empirical work reported below measures price stability in terms of the standard deviation of the aggregate price level around a deterministic trend. This measure is somewhat different than the standard deviation of the inflation rate. Technically, one measure uses deterministic detrending and the other uses stochastic detrending. Throughout this paper we will ignore this distinction and refer to "fluctuations in inflation" whether measured one way or the other.
- ⁵ In principle, we need an estimate of the social welfare function for each country. However since the policy choice of each country is observed only once, we can obtain but one point on the social welfare function. Obtaining the entire social welfare function is therefore impractical. The problem is very similar to the "index number" problem which arises when comparing gross national product in different countries. Any comparison is ambiguous because we cannot observe utility functions in each country and thereby determine how much would be produced and consumed at a different set of prices. See Baumol (1977, pp. 350-353) for a discussion of these problems with reference to index numbers of real income.
- ⁶ The models discussed in this paper do not explicitly discuss exchange rate policy, which may complement or substitute for aggregate demand policy in open economies. Exchange rate policy has effects on the macroeconomic tradeoff which are very similar to aggregate demand tools such as monetary policy. For example, an exchange rate policy which "accommodates" a domestic price shock by depreciating the currency prevents aggregate demand from falling much as an accommodative monetary policy does. Dornbusch (1979, Ch. 9) emphasizes the similarity between exchange rate policy and monetary policy for the type of tradeoff discussed in this paper. The implications for an international monetary system consisting of several countries are discussed in Taylor (1982).

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Exchange Rate Policy Reconsidered

Otmar Emminger

Group of Thirty, New York, N.Y.



Occasional Papers 10

Author

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Otmar Emminger

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Exchange Rate Policy Reconsidered

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Exchange Rate Policy Reconsidered¹

Otmar Emminger

Former President of the Deutsche Bundesbank

I. Economic policies are becoming more exchange-rate oriented — and for good reasons

Over the last few years, exchange rate movements have been very much in the limelight. In the two years 1980 and 1981 the major exchange rates

- showed great short-run volatility,
- and were subject to wide medium-term swings, often very much out of line with inflation differences or even contrary to them, so that “real” (or inflation-corrected) exchange rates shifted more and faster than ever before, and in some important cases more than nominal exchange rates.

Within less than two years the dollar’s “real” average value against other major currencies regained much more than it had lost in the seven years from 1972 to 1979. The reverse was true of the Deutschemark, whose average “real” value by the second half of 1981 had declined considerably below its 1972 level.² High interest and dollar rates, as well as high volatility of interest and exchange rates, became the distinctive features of the money and currency markets in 1980 and 1981.

The last few years have also brought us convincing evidence of how important the relative level of an exchange rate can be for the whole economy. We have seen that significant changes in “real” (or inflation-corrected) rates

- can have surprisingly strong effects on the domestic inflation rates of the countries concerned, both in a stabilizing and in a destabilizing direction,

¹ Revised and enlarged version of an address before a Bankers Forum of Georgetown University, Washington, on September 28, 1981.

² In both cases measured against 17 currencies of other industrial countries, and corrected by relative movements of wholesale prices of manufactured goods.

- can also have stronger and faster effects on trade and current account balances than many had assumed in the first period of floating exchange rates,
- and, hand in hand with that, can also strongly influence economic growth and employment.

No wonder that in many countries the exchange rate has achieved a comeback in the minds of policy-makers as one of the most important prices in the economy. Not that a fixed (or a fixed but adjustable) rate has again become a policy goal — except within a limited regional area (EMS) the European Monetary System¹ and for smaller countries which peg their currencies to a key currency or a currency basket. But in most countries the feeling has grown that economic policy should see to it that destabilizing shifts in the exchange rate should be avoided or at least mitigated. Thus, we have seen cases where monetary policy in general, and interest rate policy in particular, became largely geared to the exchange rate; not only in smaller countries like Belgium or Austria, but also in countries like Britain and Germany. This has sometimes led to sharp conflicts between external constraints on monetary policy and domestic policy requirements.

At the same time, when a number of countries' economic and particularly monetary policy became more exchange-rate-oriented than before, in the United States the pendulum swung over to the other side. In the autumn of 1978, at the time of the dollar crisis, the United States had gone over from "benign neglect" to purposeful management of the exchange rate. Two and a half years later, the new Reagan team withdrew from any market management of the dollar rate (except "in unusual circumstances of great disorder", to quote Beryl Sprinkel, Under Secretary of the US Treasury) with the slogan "the market knows best".

I shall briefly describe and assess these recent experiences, and draw some conclusions for exchange rate policy. My main conclusion will be:

- a) Most countries cannot but have an "exchange rate policy", in the sense that they cannot be indifferent to where the exchange rate is going, and *that they have to take exchange rate movements into account in their overall economic policy*. This exchange rate orientation of policies has been increasing in importance, and for good reasons.
- b) It would, however, be a misapprehension to confuse exchange-rate policy with intervention policy. Intervention in the foreign exchange markets is one possible instrument. But there are other, and often much more important instruments, such as monetary measures determined or influenced by exchange rate considerations, and all other measures of economic policy which are apt, and intended, to influence the current or capital account of the balance of payments, in particular a deliberate policy of borrowing abroad.
- c) The American turnabout to non-intervention in the spring of 1981 does not necessarily mean that the US authorities don't have "a view of the dollar rate"; their exchange rate policy may consist in maintaining the external value of the dollar by tight domestic monetary policies and

relatively high interest rates. But it does mean that the dollar has reverted to the role of the passive n^{th} currency in the markets, a role which it had so gladly dropped in 1973.

- d) A passive non-intervention policy by the United States may be compatible with a more active exchange rate policy by other countries. The current assumption of many politicians (recently expressed strongly by the French Finance Minister) that an effective exchange rate policy vis à vis the US dollar requires joint action on both sides is not very convincing; and under the existing conditions, it is at any rate unrealistic to ask for such cooperative intervention (which even in the pre-1981 period occurred only intermittently). The same is true of the perpetual call for a "common dollar policy" on the part of the EEC member states, which has all along been based on a misunderstanding of the working of the exchange rate system and on an unrealistic neglect of the interests of the more stable countries.

II. Exceptionally large shifts in "real" rates of exchange

In order to gain a proper perspective, let me first briefly outline the most important exchange rate fluctuations of recent years. In the two years, 1980 and 1981 the *dollar rate against the Deutschmark* — often considered a key rate — moved from a low of DM 1.72 in January, 1980 to a high of DM 2.57 on August, 10, 1981, an increase of nearly 50 per cent, and then fell back to DM 2.25 at the end of 1981. Between the low in January 1980 and the high in August 1981 there were no fewer than four cycles, with the Deutschmark declining each time by 14-15 per cent and rising again by percentages between 4 and 14-15 per cent. Apart from these medium-term fluctuations, the really important development has been the shift in the dollar/DM rate to a definitely higher real level. At the end of 1981 the nominal dollar rate against the Deutschmark was still 30 per cent higher than in December 1979. As prices increased more in the United States than in West Germany during 1980 and 1981, the "real" appreciation of the dollar was even larger. In a more general way, at the end of 1981 the average weighted value of the dollar against a group of important currencies was in real terms about 10 per cent higher than in 1972, the year before the transition to widespread floating. Even if the dollar should decline somewhat from its December, 1981 rate, it is unlikely to fall significantly below its 1972 level in real terms. Thus it would appear that after a turbulent 9-year period of over- and undervaluations, the average (weighted) exchange rate of both the dollar and the Deutschmark, as well as their bilateral relationship, have returned to their approximate purchasing power parities of the early 1970s. The recent movements of the dollar against the Deutschmark

are broadly reflected also in its movements against a sizable group of other European currencies.

The fluctuations of the pound sterling and the yen have also been of great importance. To gain a full picture of their medium-term swings one has to start in 1978. Sterling rose strongly between 1978 and the first quarter of 1981. At its peak in February, 1981, the "real" average sterling rate against a group of important currencies was not only about 50 per cent above its depreciated value of 1976, but about 30 per cent higher than in 1972. This is by far the most excessive overvaluation which any major currency has experienced in recent monetary history. It dwarfs the "real" upvaluation of the Deutschemark between 1972 and its peak at the beginning of 1980, which was slightly above 10 per cent. The large real appreciation of sterling from 1979 to 1981 was probably the most important single element in that period's British economic policy, as concerns its effects both on domestic inflation as well as on British trade, production and unemployment.

A factor of crucial importance for international trade relations has been the movements of the Japanese yen. The yen, together with the Swiss franc, reached a peak in the autumn of 1978 (against the Deutschemark in August, 1978, against the dollar in October, 1978); from this peak it declined in a long downswing to a low in March/April 1980 — a decrease of about 30 per cent against the dollar and 32 per cent against the Deutschemark; from this low point in April, 1980 it appreciated again until February, 1981, regaining most of the ground lost in the previous period of weakness. Since Japan's domestic inflation rate, and even more the evolution of its unit labor costs, remained below that of the United States and of many other countries, the "real" depreciation of the yen between 1978 and 1980 was even larger than the nominal decline; and despite the subsequent recovery of the yen, Japan still retained a considerable price/cost advantage compared with 1978. This competitive advantage increased after February, 1981, since the yen declined again in the subsequent 12 months — very much in contrast to what one would have expected on the basis of inflation differentials, as Japan in 1981 had the lowest inflation rate of all industrial countries.

It was the long-drawn-out downswing of the yen against the dollar and the Deutschemark (and other European currencies) from 1978 to 1980 which so much exacerbated the trade frictions and current account problems connected with the structural changes in favor of Japanese industry. The problem can best be illustrated by the enormous increase in the Japanese trade surplus against the United States and the European Community (EC) between 1979 and 1981, which followed the movements of relative exchange rates with a time-lag of 1 to 1½ years: the trade surplus

against the United States rose within this 2-year span from \$6 billion in 1979 to \$13 billion in 1981, and in a similar way, against the EC countries from \$8.7 billion to \$15.8 billion. Thus Japan met its enormous oil payments deficit to a great extent by increased surpluses in its trade with other industrial countries. Let me emphasize that the depreciation of the yen from 1978 to 1980 was not deliberately engineered by the Japanese authorities (as has often been alleged by the press or by competitors from other countries). On the contrary: during the downward swing of the yen from the end of 1978 to the spring of 1980 the Japanese central bank tried to slow down the depreciation by throwing about \$18 billion of its reserves into the battle, thus covering nearly the entire Japanese current-account deficit of 1979/80 out of the nation's foreign exchange reserves. In the spring of 1980 the Bank of Japan even negotiated with the central banks of West Germany and Switzerland an arrangement for the cooperative support of the yen in order to stem the decline. This coincided with the turning point in the movement of the yen's exchange rate, so that it was of no substantive but only of psychological importance.

III. Questions raised by recent experiences

Let me point out some salient features of these recent experiences:

First, some important exchange rate movements were clearly out of line with existing inflation differentials over considerable periods of time. This is true of the depreciation of the Deutschmark from the beginning of 1980 to August, 1981, the appreciation of sterling from 1978 to the beginning of 1981, and also the depreciation of the yen from the end of 1978 to the spring of 1980. As a consequence, changes in real rates during these periods were even larger than those in nominal rates.³

Second, the shifts in real rates were generally of a much larger magnitude than in former periods. To repeat the two most striking examples: the dollar rate against the Deutschmark appreciated from December, 1979 to December 1981 (taking monthly averages) by over 35 per cent in real terms (and this level has continued into 1982). The sterling rate against a weighted average of other currencies rose by 37 per cent in real terms between 1978 and the first quarter of 1981.

Third, it can be assumed that part of these spectacular movements was a reaction to a previous undervaluation. But there can be little doubt

³ This was in contradiction to a widely accepted rule according to which changes in real rates are normally smaller than those in nominal rates (because of the impact of exchange rate changes on domestic prices).

that the reaction went too far in the other direction and that the equilibrium rate was overshoot again, so that there inevitably followed a new corrective movement in the opposite direction. This has produced a medium-term roller-coaster movement of important exchange rates.

These experiences raise a host of questions:

- What has determined these large medium-term exchange rate fluctuations?
- What effects do they have on the economies of affected countries and in particular on their balances of payments?
- Should one accept both the short-run volatility and the excessive medium-term fluctuations, or is there a case for smoothing them out?
- Are central banks or other official agencies really in a position to know what is the appropriate exchange rate? And do they have the means to prevent destabilizing and otherwise harmful market movements?

Determinants of Exchange Rate Movements

First, what has determined these exchange-rate movements? I leave aside political or psychological influences (e.g. the Polish crisis, or the “Reagan bonus” for the dollar), as they usually are of only short-term importance for the flow of funds in these markets. Let me concentrate on the “fundamentals”, such as differences in *inflation rates*, the *balance of payments on current account*, *interest-rate movements*, etc.

Differences in National Inflation Differentials

After the experiences of the last few years, I think we have to discard *differences in national inflation differentials* as a reliable explanation for exchange rate movements *in the short run*. And “short run” may extend here to periods of several years. The relatively good German price performance in the years 1978-1980 — with its inflation rate being 4 to 5 per cent per annum lower than the average rate of other OECD countries — did not prevent the spectacular fall of the Deutschemark in 1980/81. In the long run there is no doubt a relationship, although not always conforming fully to the purchasing power parity theory. But the causal relationship may run both ways. A depreciating exchange rate can exert a strong inflationary push on the domestic price level, particularly if the depreciation takes place against the dollar, in which most commodity prices, including those of oil, are denominated. (In July, 1981 the French Finance Minister complained that the appreciation of the dollar was equivalent to a third oil price explosion.)

Of little help in explaining exchange rate movements, at least in the short run, is also the now fashionable “*asset market view*”, coupled with the theory of rational expectations. According to this school, exchange rates

are relative asset prices which are determined in a similar way to prices of common stock. If one starts from the proposition that an exchange rate is the relative price of two national monies, and that the supply of these monies is controlled by the respective central banks, one can quickly reach the conclusion that exchange rates are primarily determined by the relative money creation of the respective central banks, and by the expectations of the markets concerning future monetary policies. Thus, if the foreign exchange markets don't behave properly, if they over- or undershoot, or if they suffer from "disorderly conditions", this school has a convenient, although unprovable, explanation which ascribes their behavior principally to uncertainties and misperceptions of government or central bank policies and/or to a credibility problem concerning these policies.

Far be it from me, as a former central banker, to minimize the importance of the central bank's monetary policy, and its influence also on the exchange rate. But without going into too much detail, let me point out that the foreign exchange market by its very nature cannot be compared to the stock market; that it is only partially a pure asset market and mainly a flow-of-funds market; and finally that it is not the whole money stock supplied by the central bank which is put up and measured in this market against one other country's money stock, but that supply and demand in this market are determined by that part of countries' money stocks (or rather money flows) which is used to generate demand for foreign goods, services and assets — and this can be a changing fraction of the total.

As a footnote I would mention that in the two years 1980 and 1981, which were characterized by dollar strength and Deutschemark weakness, money creation in Germany was "relatively" (also in relation to real economic growth) lower than in the United States, especially if measured by the M 1 definition, so dear to the hearts of dogmatic monetarists. And what is more: Germany's money creation was consistently lower, and monetary policy was consistently stricter, than practically all economic experts, particularly those of the major German business research institutes, had recommended and expected. In spite of this consistent, clearly announced and also attained monetary strictness, the Deutschemark was weaker — and therefore the inflation rate in Germany considerably higher — than anybody, including the government, the economic institutes and market experts, had expected.

Balance of Payments

The "asset market view" can only be applied to some segments of the external capital balance, especially those related to the holdings of official currency reserves or commercial liquidity reserves. More important are usually the flows of supply and demand originating in the *current account*

of the balance of payments and those directly influenced by interest rate differentials.

The experience of the last four years has convincingly demonstrated that the major medium-term influence on the exchange rates has been the variations in the balance of payments *on current account*, provided they exhibited a strong tendency. Look at what happened to the dollar: it was relatively strong in 1975/76 when the American current account showed large surpluses. The subsequent dollar weakness of 1977/78 coincided with the record deficits on current account of about \$74 billion in each year. When in 1979 the current account turned positive again, the dollar began to recover. It became a very strong currency when in 1980 and 1981 a current account surplus was accompanied by very high interest rates.

In Japan the long decline of the yen from the end of 1978 to the spring of 1980 was a direct consequence of the reversal of the Japanese current account balance from the record surplus in 1978 to the record deficit from 1979 to the middle of 1980. Here, as in the United States, the current account deficit was accompanied by temporary capital outflows. As soon as the first signs of an improvement in the trade account appeared in the spring of 1980, the capital balance turned around into surplus and the yen very quickly improved. After February 1981, however, the very large interest rate differential between the United States and Japan prevented a further upward adjustment of the yen rate, and produced even some downward pressure because the net capital outflow from Japan was higher than the current account surplus.

Finally, the experience of West Germany: The period of Deutschmark strength in 1977/78 was, of course, primarily the mirror image of the US situation. The loss of confidence in the US dollar, prompted mainly by the high American deficits on current account, moved large amounts of foreign funds into the Deutschmark, in spite of relatively low interest rates for Deutschmark assets. An important factor in the strength of the Deutschmark was, however, also the surplus in the German current account balance, which reached a high of \$9 billion in 1978. Subsequently, the sudden plunge into a record current account deficit of \$16.5 billion in 1980 was by far the most important influence on the exchange rate of the Deutschmark. No amount of capital outflow provoked by the Polish crisis or declining confidence in the West German political leadership, could have remotely approached the magnitude of the \$16 billion current account deficit. This deficit and its effect on the Deutschmark exchange rate soon became the dominant influences on the economic situation and the monetary policy of West Germany. The Deutschmark rate would quite certainly have been depressed even much more had not the current account deficits been financed in part by drawing on the official reserves (mainly in 1980),

and in part by very large official borrowing abroad⁴; in 1981 this official borrowing of over DM21 billion exceeded the 1981 current deficit of DM 17 billion.

Interest rate differentials

Interest rate differentials, too, can exert a significant short-term influence on the exchange rate, but only if their effect on capital movements is not counteracted by confidence factors or by large opposite current account influences. In 1977/78 an increasing interest rate difference in favor of dollar assets did not prevent the dollar from weakening. The current account and general confidence factors prevailed over interest rate differentials. Later on, namely in the period from the autumn of 1979 to the end of 1980, when the German current account was in large deficit, the Deutschmark rate against the dollar responded strongly to the wide fluctuations in the interest rate differential between dollar and Deutschmark assets. Since the beginning of 1981 the relationship between interest rate differentials and exchange rates has become blurred. A very instructive experience has been provided by the Japanese case. From the moment in 1980 it became clear to everybody that Japan's trade account was on a strongly improving trend, Japanese interest rate policy became more independent of American interest rate movements and could maintain a greater distance from American rates than was possible for West German monetary policy. This demonstrated that a pronounced current account trend can have more influence on the exchange rate than do interest rate differences. The recent downward pressure on the yen rate shows, however, that a current account surplus of moderate size can be over-compensated by capital movements induced by very large interest rate differences.

IV. The effects of “overshooting” exchange rate movements

Overshooting, i.e. a change in exchange rates going beyond the differences in national inflation rates, or a change in “real” exchange rates, is not in itself a bad thing. It is often indispensable in order to bring about a necessary adjustment of a payments imbalance, and/or to adjust to structural changes. Overshooting can, however, also have negative results, especially when it is excessive. Let me briefly list some positive and negative experiences.

⁴ The borrowing abroad was done in DM. The lenders, mostly Arab countries, had to convert their dollar holdings into DM in the foreign markets for this purpose.

The reaction of trade and current account balances

First, in several important cases the reaction of trade and current account balances to changes in exchange rates was stronger and faster than was to be expected in the light of former experiences. These had suggested rather long time-lags — of 2 to 4 years — before an exchange rate change can have its full effect on the trade and current account balance, usually with an initial period of even perverse effects (“J-curve”). The time-lags were supposed to have lengthened during the 1970s, partly due to the uncertainties for trade and investment decisions associated with floating rates (where the durability of changes in exchange rates could not be relied upon). This pessimism concerning the adjustment potential of exchange rates was belied by the relatively quick reversal of the US current account in 1979 and of the Japanese current account in 1980. In both cases, record deficits on current account were eliminated within 1½ to 2 years. What is particularly surprising is that these relatively fast reversals came about in the face of the second oil shock with its huge payments burden on oil importing countries⁵, and at a time when the world economy and world trade were beginning to slow down.

In both cases, special factors may have helped in the adjustment. But in both cases two overriding causes were at work: first, the shifts in “real” exchange rates were large. Second, the exchange rate depreciations were accompanied by strict domestic policies and a slowdown in domestic demand. This has confirmed an old truth: the effects of exchange rate changes are largely dependent on whether they are accompanied by supporting domestic policies. Research by the IMF and others has shown that growth differentials and cyclical divergencies have a stronger short-term effect on trade and current account balances than shifts in relative prices and exchange rates. The United States eliminated its large current account deficit of 1977/78 not by an undervalued dollar alone, but by combining it with near-stagnation in economic growth in 1979/80, at a time when many other countries were still expanding. The equally spectacular turnaround in the Japanese current account balance, from the world’s largest deficit in 1979/80 to the largest surplus in 1981 was also based on an undervalued yen combined with domestic stagnation and wage restraint. Japan managed to maintain an enviable growth rate of around 4 per cent in this process. However, nearly all of this growth in 1980 and 1981 was due to the turnaround in the external account, while domestic demand nearly stagnated, real wages temporarily declined and imports in real terms were down in both years. Thus, Japanese economic growth in 1980/81 did not provide

⁵ The non-oil balance on current account of the United States swung around between 1978 and 1980 by an astonishing amount of over \$40 billion!

much support for the international economy. On the strength of these examples one can expect that West Germany will also eliminate its current account deficit by the present combination of an undervalued currency with a recession in domestic demand. (I do not, however, pretend that a recession is the best, or even a durable way of correcting a large external deficit. It was forced upon Germany by the stagnation in the world economy, or in other words, the recession in the United States.)

The effects on domestic prices

Second, the stabilizing effects of overvalued exchange rates on domestic price movements have been remarkable. This had already been demonstrated after the bout of inflation in 1973/75, when the Swiss inflation rate was reduced fairly quickly from a high of about 12 per cent to 1 per cent, and the Japanese rate from 32 per cent to 4 per cent. These results refute those theories which claim that winding down inflation from, say, a 10-12 per cent range would inevitably take 4 to 6 years, and at a great loss of GNP.

We have seen that an overvalued exchange rate can have a more direct and faster effect on the domestic price level than a restrictive monetary policy, at least in the short run. Some countries have therefore deliberately used the exchange rate as the chief tool for bringing a high inflation rate down. One of the more extreme examples has been Chile which fixed the exchange rate of its currency to the dollar in 1979 when its inflation rate was still above 30 per cent, and has since maintained this fixed rate. Mainly with the help of this rather drastic overvaluation, the Chilean inflation rate was by 1981 brought down to the American level of about 10 per cent. Some other countries, too, have used an overvalued exchange rate as an instrument of domestic stabilization, though not in the same drastic way.

I have, however, to make two caveats here: first, it is self-evident that overvaluation as an anti-inflationary device can by its very nature not be used by all major countries at the same time. Second, it has a much greater effect in smaller countries with a relatively large external sector than in a country like the United States.

More recently we have seen strong stabilizing effects of an overvalued exchange rate in the case of Britain, where in 1980/81 it was a stronger anti-inflationary force than the attempted restrictive monetary policy. Thus it was not surprising that in 1980 the Bank of England stated in its *Quarterly Bulletin*: "One of the main ways in which monetary policy affects the economy is via the exchange rate." From 1980 onwards British interest rate policy was often torn between the desire not to let the pound fall, out of fear of increasing inflation, and letting the interest rate decline in order to prevent a deepening of the recession. The British, like the Germans and others,

have been placed before the dilemma — in the words of the Bank of England — “to accept either higher interest rates themselves, with harmful consequences for economic growth, or a fall in the exchange rate with harmful effects on inflation.”

A major conflict between monetary and exchange rate policy has recently also occurred in Japan. Since the autumn of 1981 Japan has tried to stimulate its domestic demand in order to make its economic growth less one-sidedly dependent on external surpluses which had exacerbated the trade frictions with other industrial countries. At first, the Bank of Japan visibly hesitated to lower its interest rates because it feared the ensuing downward pressure on the yen exchange rate, which the Bank itself considered already undervalued. Later on it cautiously lowered interest rates, but not without some unwelcome effect on the yen rate.

In West Germany, we have experienced both useful coexistence and conflict between monetary and exchange rate policies. In 1977 and 1978 the pressure of large money inflows from abroad was deliberately taken partly by, the exchange rate, that is by letting the Deutschmark rate go up, while part of the pressure was absorbed by intervention purchases in the foreign exchange markets. There was never a fixed “line of defense,” nor an attempt at preventing strong fundamental factors from having an effect on the exchange rate, but only an attempt to prevent excesses. The interventions led to a temporary overshooting of the domestic monetary target — though never to the same degree as in Switzerland in 1978 — but this was offset in its effect on domestic stability by a visible slowdown in money velocity and by the downward pressure of the overvalued currency on prices and domestic business activity (so-called “two-dimensional monetary policy”).

Later on, West Germany experienced the *destabilizing effects* of a large real depreciation. This became acute when in the summer of 1981 an excessive decline of the Deutschmark against the dollar forced DM import prices temporarily up to a 20 per cent rate (over twelve months), in spite of the simultaneous decline in the dollar prices of many commodities, including oil, on the world markets. This pushed the German inflation rate far above the generally forecast rate of 4 per cent, in spite of a very subdued increase in the money supply which remained partially even below the lower limit of the target band. In the autumn of 1981 there was a certain danger that the exchange-rate-induced high inflation rate of nearly 6½ per cent would be built into the cost/price structure by the wage round starting in December 1981. Little wonder that, at least for a time, German interest rate policy was compelled to direct itself towards the exchange rate, because the excessively low exchange rate presented the main danger to domestic stability.

Other effects

Third: the inflationary impact is certainly a major drawback of an excessive downward shift in real exchange rates. Overvaluation, on the other hand, if it does not lead to a very fast adjustment of domestic costs, may unduly depress profits and the dynamics of an economy. Other negative effects of an over- or undervalued exchange rate can be the wrong signals given concerning direct investment abroad (or from abroad) and longer-term trade transactions. We saw a great deal of that happening during the relatively long period in the 1970s when the Deutschmark was overvalued against the dollar. Another negative effect of a strong and long-lasting under- or overvaluation may be general trade distortions and international trade friction. Japan, of course, is a case in point.

V. How far should — and can — an exchange rate policy go?

I hope I have made clear that the exchange rate is far too important a price — because of its effects on domestic stability and activity, the balance of payments, and international trade and payments relations — to be treated with “benign neglect” as a “residual outcome” of domestic monetary and other economic policies. The very fact that monetary and other economic policies are part of the forces influencing the foreign exchange markets, makes it unavoidable that those responsible for these policies *“have a view” on the exchange rate and take the possible impact of their policies on the exchange rate into account.*

This should not be misunderstood as a call for activism and interventionism in the field of exchange rates. It cannot be emphasized too much that the most important foundation for exchange rate stability is a policy of monetary and financial stability at home. This is also the principle laid down in the Articles of Agreement of the International Monetary Fund, where in Article IV it is said that as a prerequisite for a stable exchange rate system members should “foster orderly underlying economic and financial conditions and a monetary system that does not produce erratic disruptions”(!).

We would, however, delude ourselves if we believed that all that is required for stable exchange rates is the pursuit of a steady money-supply policy, and that this, together with free floating, would also ensure that foreign exchange speculation would not be a disturbing but a stabilizing factor. In the real world, we cannot assume that all major countries adhere to a strict monetary stabilization policy, and even less that they are always successful. And even then they could still have very different mixtures of

monetary and fiscal policies and, therefore, among other things, very divergent interest rate developments. And who would be rash enough to expect a complete synchronization of cyclical developments in all countries — or even consider this desirable? Thus, short- and medium-term strains and disturbances are built-in elements in the field of payments and exchange markets, even if we had firm international agreement on and successful implementation of concerted money-supply policies.

Problems and weaknesses

Apart from that, there exist some specific problems and weaknesses in the foreign exchange markets:

Volatility

First, foreign exchange markets, if left entirely to themselves, are notoriously volatile and erratic, at least on occasion, since they are very sensitive to psychological and political influences. Stronger upward or downward movements have a tendency to feed on themselves and become exaggerated (the bandwagon effect). Smoothing-out wild, erratic jumps — without trying to “stabilize” a specific rate, and without operating against basic trends — may give the market a helping hand and *can usually be reconciled with a stability-oriented monetary policy*. In my experience, when a currency was oversold or overbought, it often needed relatively small amounts of intervention to restore calm and reason. In the past, many of these smoothing-out interventions proved to be self-reversing. In the majority of such cases, the Deutsche Bundesbank made a profit out of such interventions⁶ — which monetarist economists often consider to be the criterion for permissible official intervention. But apart from that: why should one not try to avoid too “disorderly” markets, if this can be done with relatively little effort? I know that some people will object: how do you recognize a “disorderly market”, how can you distinguish it from the beginning of a more fundamental movement of the exchange rate? In the first few years of floating there was an understanding among the central banks of the “Snake” (the EEC fixed-rate arrangement) that a change in the dollar rate of more than 1 per cent in one day would create an assumption of disorderliness and lead to consultation about possible smoothing interven-

⁶ This is true of foreign exchange interventions since the transition to floating in 1973. It has been particularly true if we take medium-term swings in the dollar exchange rate into account. The Bundesbank sold dollars acquired in 1977/78 at great profit at the high dollar rates of 1981. A completely different matter is the fact that the Bundesbank had to write off enormous book losses it suffered on the large dollar reserves acquired by obligatory intervention at fixed dollar rates before.

tion. In the meantime the official guardians of exchange markets have become more tolerant of erratic jumps: in the first nine months of 1981 there were (according to Dr. Alexandre Lamfalussy of the BIS) 104 working days with fluctuations in the dollar/DM rate between $\frac{1}{2}$ and 2 per cent, and 9 days with jumps of more than 2 per cent.

In 1978, some officials in the US Treasury tried to define more closely what "disorderly conditions" in the exchange markets are. In my view, the problem is similar to that of the definition of a pretty girl: difficult to define, but one recognizes her when one meets her. And what if the "disorderly" jump is the beginning of a fundamental movement? This is less of a problem than it seems, as one would never completely suppress the "disorderly" movement but only mitigate it, and let the movement continue, although perhaps at a moderate pace.

I must stress, however, that in my view *the short-term volatility of exchange rates is not the primary problem*. Financial institutions, exporters and importers have learnt to cope with such short-term fluctuations, and to cover themselves against such risks. One could, of course, say (as Mr. Sprinkel of the US Treasury has said): why should the government act as an insurance agency by smoothing-out "disorderly" jumps in the exchange rate? I would not disagree — but when it can be done at little or no cost, which it often can, why not occasionally give the exchange markets (and foreign trade) a helping hand and avoid the impression that the foreign exchange market is a casino? Moreover, letting erratic movements go on without some smoothing-out may set the market psychology on a wrong track for quite some time.

Excessive Swings

Second, much more important, and more difficult, is the problem of how to deal with *excessive medium-term fluctuations*, which *give faulty signals* and may lead to *over-correction* of a payments imbalance, to trade distortions, roller-coaster movements in both current accounts and exchange rates. Such excessive swings are not merely the result of speculative excesses and bandwagon effects. There is something in the nature of the payments adjustment process which can lead to such results. As I mentioned before, a shift in competitive positions due to a real change in the exchange rate usually produces its full effect on the trade position only with some time-lag, sometimes of several years, quite often with an initial period of perverse effects. It is impossible for the exchange markets to take such long — and uncertain — delays into account in their evaluations and market reactions, especially as they usually do not look beyond a period of six, or at most twelve months. During this adjustment period the initial imbalance, say a large current account deficit, continues to press on the

foreign exchange market, leading to a temporary over-adjustment of the exchange rate and eventual overcorrection of the imbalance.

Financing

Third: there is a *financing problem* involved. Until the current account imbalance is corrected, the deficit must somehow be financed. Some will say: let the market do it; an exaggerated drop in the exchange rate will be recognized as such and will provoke compensatory private capital flows. Will it really? And in amounts which can offset a current deficit of \$14 or \$16 billion per year? And if the period of gross undervaluation lasts longer, will it not lead to irreversible inflation in the deficit country? After the first oil price explosion of 1973/74 it was internationally recognized that the oil-induced payments deficits could not be corrected quickly by a shift in exchange rates against the surplus OPEC countries. Therefore, it was recommended that *financing* — private and official — should bridge the time gap, until the fundamental adjustment would be attained (which took 3 to 4 years).

This temporary *deficit financing* can be achieved by

- attracting private capital inflows through a high-interest rate policy,
- by official agencies borrowing abroad,
- but also by using official reserves for that purpose.

Whether a central bank sells dollars in the market in support of its currency or a government agency borrows abroad (and itself or the lender sells the dollars against its currency), it fulfills the same function and has the same market effect — only it will be called “intervention” in the first case and part of the “basic balance of payments” in the second case. The choice between the various methods of interim financing — private borrowing, official borrowing, use of currency reserves — will depend on the circumstances of the case. The effect on the domestic economy is not necessarily the same; the sale of foreign currency by the central bank may have a restrictive effect on the economy, while official borrowing abroad may not. What is essential is the *right mixture between financing and adjustment*, so that the adjustment period is as short as possible.

Recognizing the right rate

Fourth, if one recognizes that some kind of exchange rate policy is necessary, and that part of such a policy may be an interim financing for the adjustment period, what exchange rate should the authorities aim at in the process? Can the authorities really know better than the market? I wholeheartedly agree that the monetary authorities have no way of knowing exactly what is the “right” exchange rate. *But in most cases one can*

recognize when an exchange rate is very much out of line, is destabilizing and distorting, and is likely to turn round again.

American observers, official and unofficial, sometimes poked fun at the Europeans because they always seemed to complain about the dollar: in 1978 that it was far too low and in 1981 that it was far too high. But it is likely that the Europeans were right in both cases, i.e. that at a rate of DM 1.70 to the dollar was just as much out of line with all fundamentals as at DM 2.50. It is indeed extremely unlikely that the fundamental factors determining the equilibrium rate between the dollar and the Deutschemerk could have justified a change of 50 per cent within three years. When in the summer of 1981 the dollar began to move above DM 2.30, the president of the Deutsche Bundesbank repeatedly said in public that this represented a clear undervaluation of the Deutschemerk. Equally, since the autumn of 1981 the Governor of the Bank of Japan has reiterated that he considered the yen rate against the dollar too low and that he would like to push it higher. He was prevented from using interest rate policy for that purpose; on the contrary, he was under strong pressure to lower interest rates in order to stimulate the domestic economy. Here, as in many other cases, there was a clear conflict between exchange rate policy and domestic economic requirements. I believe that such dilemma cases would sometimes justify a greater use of exchange reserves and/or official capital transactions. The central bank should put its money where its mouth is. This is particularly justified when a clearly excessive movement in the exchange rate endangers domestic stability international relations. A recent statement by the Governor of the Bank of Japan (in January 1982) where he said that his Bank would "aggressively intervene" to prevent a decline of the yen, shows that he has come to similar conclusions as I have advocated for some time.

To repeat: the authorities cannot know what the "right" exchange rate is, but they can occasionally diagnose when an exchange rate is excessively out of line and has to be corrected. Would this not lead to a system of "target zones" for an important currency, e.g. the dollar? I believe not. A "target zone" implies some official fixing of tolerable exchange limits, possibly with a wide band between. It always creates the problem of when, and how, to change these limits when the underlying fundamental factors have changed. My suggestion is more flexible, i.e. to "have a view" on the limits of tolerable fluctuations, and to act upon that view, but not to be committed to this limit publicly or internationally, and so be able to adapt the limits flexibly to changing circumstances.

Some monetarists would be critical of such an exchange rate policy because they fear that exchange-rate-oriented monetary policies or foreign exchange interventions would be incompatible with a steady domestic money-supply policy. This need, however, not be the case, as there are, for

example, ways of compensating for the liquidity effects of foreign exchange intervention. Moreover, to moderate excessive or erratic movements in exchange rates may contribute to a more stable monetary climate all round, in which it is easier to pursue a steady monetary policy. I would recommend the following *guiding principles for intervention in the exchange markets*:

- a) Intervention by a central bank should normally be measured by the 'profit test' (as recommended also by Milton Friedman).
- b) Intervention should not try to hold a fixed 'line of resistance' against fundamental trends. Part of the pressure should also be taken on the exchange rate. Only a combination with some elasticity in the exchange rate promises success.
- c) Never push intervention purchases to such a point that the concomitant money creation ruins your domestic money supply policy (as was done by Switzerland in 1978, when during a period of strong pressure the central bank officially suspended its monetary target, and its money creation exceeded the target more than threefold).
- d) Above all, intervention is not a final cure. It should be seen as a make-shift measure for temporary financing *to gain time* until fundamental factors or adjustment policies can produce results.

To sum up: Exchange rate policies cover a wide spectrum: from simply "having a view" on the exchange rate to smoothing out "disorderly conditions" to avoiding excesses which are palpably far out of line with fundamentals and are disturbing. The instruments range from intervention to interest rate policy, general monetary and other economic policies, and to official borrowing or lending.

VI. The special case of the United States

There is also a wide spectrum in the use of such policies as concerns different countries. This is partly a question of size. For the *United States*, there is quite certainly no other solution but free floating, be it with or without occasional intervention in the exchange markets. There is no other currency the dollar could hang on to. For the dollar, not even a target rate within a rather wide band, or against a currency basket, seems to me practicable, especially in view of the large and often volatile capital movements to which the dollar area is exposed. For smaller countries, however, it may make sense to attach their currency to a stable key currency, or to a common currency basket. This may give them an inducement and some political and psychological support for a more energetic anti-inflation policy. We have seen this process working in the case of several European currencies, both inside and outside the "European Monetary System." Some countries have

made the defense of their regional parity a matter of national prestige, and they have oriented their whole monetary and financial policies toward maintaining their currency against the chosen standard, sometimes accepting very high interest rates in the process, like Belgium and France. I don't want to claim that these exchange-rate induced efforts have always led to much better domestic stability. As a matter of fact, the inflation differences between the EMS currencies have not changed very much since the establishment of the EMS in 1979, but these differentials may constitute a major problem for the EMS in the longer run. But up to now, the regional parity system of the EMS has shown that it can work side by side with free floating against the dollar and other major currencies.

The problems of a more active exchange rate policy, which I have dealt with above, are mainly relevant for middle-sized industrial countries which float against the dollar, either independently like Japan and Canada, or as a common currency block within the EMS. For these countries, whose ratio of imports to GNP is often near 30 per cent, for smaller European countries up to 50 per cent, movements of exchange rates have a far greater significance for domestic stability and economic activity than for the United States where the import ratio is about 8 or 9 per cent of GNP. It is therefore natural and understandable that the attitude towards exchange rate policy is different between the United States and other industrial countries.

There is also another important difference, which *makes the United States a special case*. Other industrial countries usually take the dollar as yardstick and intervene against the dollar, if necessary, besides their obligatory interventions inside the EMS currency block. For the United States, it is more difficult to decide against which individual currencies they should measure the value of their currency, and against which to intervene in case of need. Should it be the Deutschmark, which was their main intervention currency in the years 1978 to 1980? Or the yen? Or the pound sterling? This is one of the several problems on which the often-requested joint and concerted intervention policy would founder, apart from the general philosophy of the present American administration not to intervene except in emergencies.

The withdrawal of the United States into a passive attitude vis à vis the exchange rate and the exchange markets is nothing but the return of the dollar to the position of the passive n^{th} currency of the system. This was its position in the former fixed-rate system until 1971, when the US authorities were eager to drop that passive role and to take the exchange rate of the dollar into their own hands. I do not see why this passive role of the dollar should be incompatible with a more active exchange rate policy of other countries.

Much more important than the question of whether the United States

authorities intervene in the foreign exchange market or not is another question, namely how long will the combination of high interest rates and a relatively strong American payments position continue. It is this combination which has forced so many other countries to either adjust to the American high interest rate level or let their currency drop and suffer correspondingly higher domestic inflation. The dollar will only relax its hard grip on the exchange rates of other countries and on the world economy when either US interest rates go down — which presupposes a victory in the fight against inflation — or the US balance on current account shows a pronounced deficit — which presupposes an upturn in the US economy.

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