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# FLOATING EXCHANGE RATES AND THE NEED FOR SURVEILLANCE

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*International Finance Section*

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# Floating Exchange Rates and the Need for Surveillance

## Introduction

The move from fixed to more flexible exchange rates among major currencies has been rapid and widespread in recent years, but it has fallen far short of a complete shift to a freely floating exchange-rate regime. Rate-management policies continue to play a major role. Such policies may involve intervention by the central bank in the foreign-exchange market, official or quasi-official borrowing or lending, various forms of controls on foreign transactions and payments, monetary-policy measures, and statements by public officials on the appropriateness of prevailing rates. The major issue at the moment is the extent to which national authorities should use such management policies rather than rely on the free play of market forces for the determination of their exchange rate. This issue is central to the definition of the duties and responsibilities of national authorities and of the International Monetary Fund in a world of floating exchange rates.

Two major questions in the current debate relate to the likely behavior of exchange rates in the absence of rate management and to the role of exchange-rate flexibility in the international adjustment process. An important argument for rate management is that the free play of market forces would lead in the short run to an inappropriate rate, i.e., a rate that has been unduly influenced by temporary factors of a cyclical or speculative nature and therefore diverges significantly from some longer-run equilibrium value corresponding to underlying economic conditions.[1] A second argument for rate management is that exchange-rate flexibility is not a very effective means of reducing or eliminating payments dis-

[1] An implicit assumption here is that market forces cannot produce an inappropriate rate in the longer run. This means that political and economic preferences reflected in permanent measures affecting payments flows (e.g., tariffs, capital controls, and fiscal incentives) are taken as given in the determination of the longer-run equilibrium rate. Also, in what follows, the long-run equilibrium rate should be seen as an analytical concept referring to the rate that would clear the exchange market in the absence of temporary factors and once any adjustment lags have worked themselves out, given foreseeable underlying price and economic conditions. Since such conditions are uncertain and may change rapidly, the long-run equilibrium rate is obviously not a precise value and will change whenever the foreseeable conditions that it reflects are modified.

equilibrium and may have harmful consequences for domestic economic objectives, in particular the objective of price stability. Exchange-rate movements, in this argument, lead only to offsetting local-currency price changes and result in a vicious circle of depreciation/inflation or appreciation/deflation.

Even if market forces often led to an inappropriate rate or if exchange-rate flexibility was not very effective in bringing about international adjustment, there still might not be a case for an active policy. Such a policy might be ineffective, the potential for policy errors might be large, the cost of the policy measures might be high, and finally the welfare costs of the inappropriate rate might be low.

These issues have obvious implications for the development of effective international surveillance over countries' exchange-rate policies. If the free play of market forces can be presumed to result in exchange rates that contribute to the smooth working of the international adjustment process, the interest of the international community can concentrate on cases involving deliberate rate management; the concern will be whether policy measures affecting the exchange rate are justifiable in the context of a country's overall economic strategy, and whether such measures place undue burden on other members. If, on the other hand, such a presumption about market-determined rates cannot be made, the international community will have a legitimate interest also in the policies of countries that do not pursue an active exchange-rate policy, and ultimately an assessment of whether an active or inactive policy is justified will have to be made.

This essay begins by discussing a number of important issues related to the short-term variability of exchange rates: the role played by exchange-rate risk and the risk preferences of market participants, the effects of various kinds of monetary measures, the role of exchange-rate expectations, and the costs of short-run exchange-rate variations. We conclude that the free play of market forces may lead to inappropriate rates in periods of unstable underlying economic conditions, and that such rates, if they persist, can impose significant economic costs. Inappropriate rates are less likely to result, however, if the underlying economic conditions are stable and if well-developed capital markets exist without strict capital controls.

We go on to discuss issues related to the role of exchange rates in eliminating payments disequilibria. While recognizing that there is solid empirical evidence for large feedbacks from exchange-rate movements to domestic wages and prices, we conclude that there is most often no

realistic alternative to the use of exchange-rate flexibility for the elimination of protracted imbalances. While exchange-rate flexibility is a necessary part of the adjustment process, however, it is not a substitute for domestic stabilization policies.

In the final section of the essay, we consider the implications of these judgments for the desirability of various forms of rate-management policies and for the development of effective international surveillance over countries' exchange-rate policies. We conclude that no simple set of rules can adequately cover the various exchange-market circumstances that are likely to arise. There will be occasions when rate management is desirable to counter short-term disturbances in the exchange markets and promote smooth balance-of-payments adjustment. There are risks, however, that deliberate management of the rate will be used to meet short-term economic goals at the expense of underlying adjustment. Effective surveillance of exchange-rate policies cannot therefore rely on a set of mechanical guidelines but must take account of the special circumstances of each individual case. In building experience with operating the new, more flexible system, the International Monetary Fund can be expected to accumulate a body of "case law" that will enable member countries to form a clearer impression of the kind of behavior most conducive to effective international adjustment.

## Issues Related to the Short-Run Variability of Exchange Rates

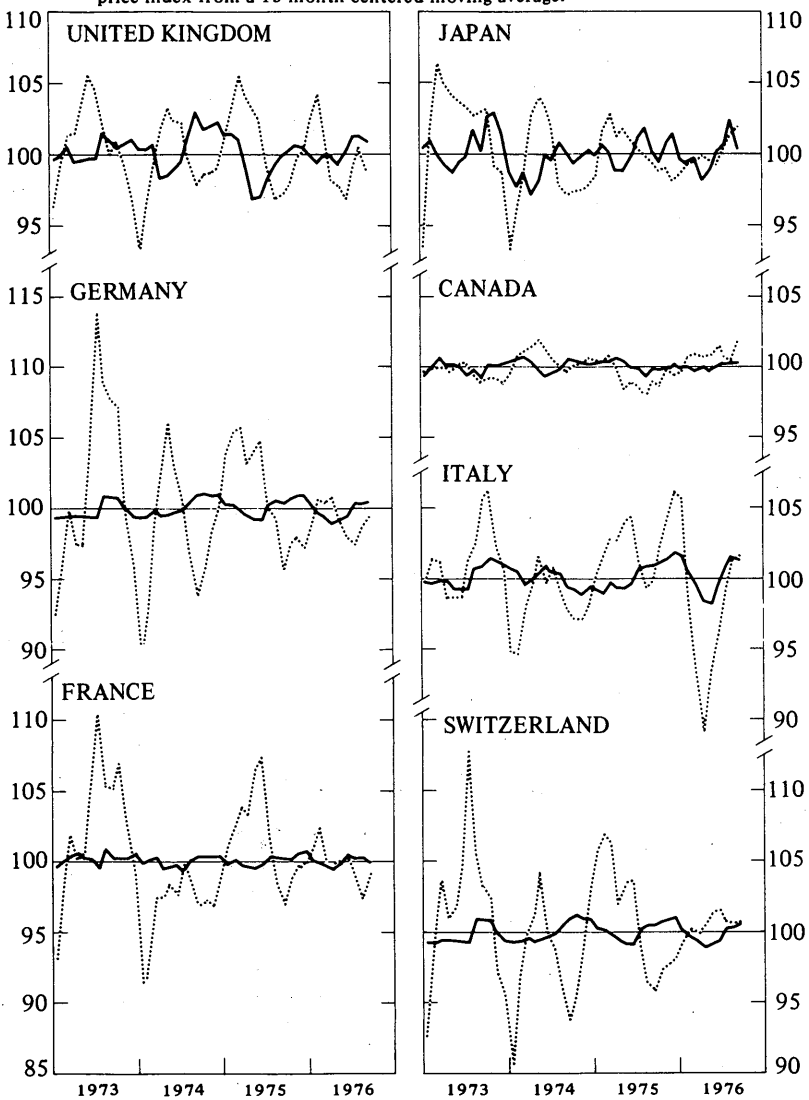
During the first few years of floating exchange rates among the major industrialized countries, short-run exchange-rate movements have been far greater than the corresponding movements in domestic price levels. This is illustrated in Figure 1 by comparing deviations of exchange rates and local-currency consumer price indices from their corresponding thirteen-month centered moving averages. (In this chart, the U.S. dollar and the U.S. domestic price level are used as reference points.) This experience suggests two questions: (1) What are the reasons for the short-run variability of exchange rates? And (2) are there significant economic costs when exchange rates fluctuate widely over the short run? Answering these questions requires, first, a theoretical digression on the nature of the process of exchange-rate determination. This digression provides the context for a discussion of the effects of exchange-rate risk, monetary-policy measures, and speculative excesses on the short-run variability of the exchange rate. The concluding part of the section assesses the costs of exchange-rate variability.

## FIGURE 1

### Short-Run Variability in Exchange Rates and Relative Consumer Prices

..... Deviations of exchange rates in terms of U.S. dollars from a 13-month centered moving average.

—— Deviation of the country consumer price index relative to the U.S. consumer price index from a 13-month centered moving average.



*A Simple Analytical Framework*

In recent years, a broad measure of support has developed, at least among academic economists, for the asset-market theory of exchange-rate determination. The essence of this approach is to view the exchange rate as an asset price—the relative price at which the stock of money, bonds, and other financial and real assets of a country will be willingly held by domestic and foreign asset holders. The asset-market approach does not, of course, neglect the requirement that exchange rates must balance the current demand for a currency with the current supply (i.e., flow equilibrium), but it highlights the role played in the determination of current (flow) demand and supply by factors affecting the relative desired stocks of domestic and foreign assets.

The asset-market approach has its main relevance for countries with well-developed capital and money markets, where exchange controls are free enough to permit substantial arbitrage between domestic and foreign assets. In countries where the possibility of such arbitrage is limited or nonexistent, the exchange rate is determined by supply and demand in goods markets and by the amount of intervention undertaken by the authorities. For other countries, the asset-market approach has two major advantages. First, it draws attention to the multiplicity of factors affecting the exchange-rate-determination process. Asset holders continuously adjust or attempt to adjust the composition of their portfolios to reflect expected rates of return, adjusted for degrees of risk, on various domestic and foreign assets. Variability in the factors that influence expected rates of return or relative risk will tend to result in variability in exchange rates.

A second advantage of the asset-market approach is that it draws attention to the predominant role of financial factors in the short run. New unexpected financial developments leading to desired portfolio readjustments occur continuously, and they may at times cause sharp exchange-rate changes. In contrast, changes in current-account positions (apart from their effect on expectations) play a more subdued role in the short run, both because prices in goods markets usually change more gradually and because longer lags operate in the adjustment of trade and invisible flows to price changes. Also, expectational factors play a more limited role in determining trade and service flows. Thus, over any short period the potential demand for a currency resulting from changes in desired *stocks* of financial assets will be large relative to the *flow* demand arising from current balance-of-payments transactions and will be more important in determining the short-run equilibrium value of the exchange rate.

Relative prices of goods and of factors of production are dominant factors in exchange-rate determination in the long run, but the usefulness of the asset-market approach is much greater when the focus of the analysis is on the short run. A brief review of this approach will provide an analytical framework for discussing the various issues related to the short-run variability of exchange rates. (A more extensive review of this approach and its implications for the analysis of exchange-rate variability can be found in Schadler, 1977, and Dornbusch and Krugman, 1976.)

The foreign demand ($A^f$) for assets denominated in the currency of a given country, net of the demand for foreign assets by the country's residents, can be assumed to be determined by the expected yield on that country's assets relative to the expected yield on assets denominated in other currencies.[2] The expected relative yield reflects the interest-rate differential and the expected exchange-rate change. The elasticity of demand for domestic-currency assets with respect to their expected relative yield will depend on the degree of substitutability between assets denominated in the domestic currency and assets denominated in foreign currencies. Exchange-rate risks and the risk preferences of speculators, which are discussed in more detail below, will be the major determinants of this substitutability.

In terms of flow demand, the change in $A^f$ occurring during a given period will be related to changes in the interest-rate differential and in the expected exchange-rate appreciation or depreciation. At the same time, the change in $A^f$, which is nothing other than the net balance on private capital flows, will have to be equal *ex post* to the sum of the balance on current transactions, official capital flows, and the net amount of intervention by the monetary authorities in the exchange market.

We have dwelt at some length on the analytical framework of the asset-market approach because it is the key to understanding the potential for exchange markets to produce in the short run exchange rates that are inconsistent with effective adjustment in the longer run. The factors that establish a stock equilibrium in financial markets are not necessarily consistent with those that would produce continuing flow equilibrium in goods markets. In particular, stock equilibrium may be influenced by expectational and risk-aversion factors not relevant to transactions on current account. And because the lags that govern the response of current-account flows to changes in their underlying determinants are generally presumed to be longer than those for the capital account, the exchange rate may move to a level which, while clearing the foreign-

[2] Foreign currencies are all grouped together here for purposes of exposition.

exchange market in the short term, is not consistent with continuing equilibrium in the longer term. In such cases, it may be desirable for the authorities to take action which keeps the exchange rate at (or moves it to) a level consistent with longer-term equilibrium. The following sections therefore examine those factors which may give rise to differences between the equilibrium short-term rate that is dominated by asset-market developments and the rate that would result in payments equilibrium over a longer-term time horizon.

*Exchange-Rate Risk*

The degree of exchange-rate risk and the risk preferences of participants in the foreign-exchange markets influence significantly the behavior of exchange rates in the short term. Financial assets denominated in different currencies and carrying the same yield would be perfect substitutes if speculators were risk neutral.[3] In this case, temporary disturbances in the goods markets or temporary changes in "autonomous" capital flows would be rapidly offset by speculative capital flows, with little or no cost in terms of exchange-rate variations.[4] Even substantial capital flows resulting from the speculative activity of a significant number of misinformed speculators would be offset by the action of the better-informed speculators.

Even if there were variations in the degree of risk attached to particular currencies, say because of changes in the underlying economic and political conditions in the issuing countries, these would not in themselves be a source of exchange-rate change if speculators were risk neutral. Under such circumstances, it would also be impossible for the authorities to influence their exchange rate by intervening in the foreign-exchange market while offsetting the effect of this policy on the monetary base. Perfect asset substitution implies that excess money creation in one country immediately creates an incentive for capital outflows and pushes the exchange rate down to a point where the higher money stock is willingly held. Thus, the authorities can have a target for the money

[3] Risk neutrality means that speculators would make decisions on whether to acquire or dispose of assets denominated in certain currencies entirely on the basis of the mean values of their expected relative yields (interest plus capital-value change). They would not be influenced by any change in the overall degree of risk (i.e., variance of the expected yield) of their portfolio that such decisions might cause either because of differences in the degrees of risk attached to assets denominated in different currencies or because of diversification considerations.

[4] Examples of changes in "autonomous" capital flows would include, in the present context, bulky overseas direct investments related, say, to the discovery of a new oil field, a large bond issue in the Eurodollar market, or a loan to a foreign government.

supply or for the exchange rate, but not both. Imperfect asset substitution opens the way for exchange-rate variations caused by temporary changes in trade flows or autonomous capital flows, or by the action of misinformed speculators; at the same time, it permits, within limits, an independent monetary policy and provides justification for an active policy of intervention by the central bank in the foreign-exchange market.

Early arguments in favor of a flexible-exchange-rate regime (see, e.g., Friedman, 1953, and Sohmen, 1961) assumed that benign speculators with a firm view of where the equilibrium value of the exchange rate lay and unlimited supplies of funds would ensure the short-run stability of the exchange rate. A few years' experience with floating exchange rates has, however, led to a re-examination of the importance of exchange-rate risk and its effect on the degree of substitution between various currencies.

Essentially, currency risk is related to the perceived likelihood that the exchange rate will vary in an unpredictable way during the period a currency is held. One reason for such uncertainty is to be found in the "thinness" of exchange markets for many currencies, a characteristic that is often the result of exchange restrictions. Even with large markets, currencies of countries with unstable underlying political or economic conditions are likely to be considered particularly risky. Variations in their rate may be dominated by political factors rather than relative prices or other predictable economic variables, and the risk of exchange controls is always present. Since the depth of exchange markets and surrounding economic and political conditions vary among countries, it seems likely that perceived risk will differ considerably between currencies.

As to the risk preferences of banks and other large institutional market participants, there is a growing body of evidence (see, e.g., McKinnon, forthcoming) which suggests that they are very much risk averters as far as foreign-exchange operations are concerned. Strict legal and regulatory constraints have been imposed on the speculative activity of commercial banks in many countries. In addition to such constraints, difficulties encountered by a number of financial institutions as a result of their foreign-currency dealings have led banks to shy away from taking substantial net open positions in foreign currencies. Oil exporters and multinational corporations tend also to have a "defensive" policy; they are mainly searching for a stable haven for their funds. (Corporations or other transactors with operations in several countries may, of course, have a need to maintain cash balances and other financial assets denominated in various currencies to finance their worldwide operations.

This in itself does not involve risk. The multinational corporation takes risks when it speculates by reallocating its portfolio away from the equilibrium position corresponding to its normal disbursement needs. An "open position" must be understood as a deviation from the portfolio allocation corresponding to normal disbursement needs.)

Perhaps a more important reason why risk aversion can lead to exchange-rate variability is that the willingness of transactors to take additional risks is likely to decrease with their exposure in particular currencies. A small expectation of gain may be sufficient for a multinational corporation to undertake a minor reallocation in its portfolio of liquid assets, but the profit prospects might have to be much greater and more certain to induce it to accept the risk of a large open position. Except in the case where the multinational corporation is betting against a fixed rate that is clearly out of line with underlying factors, it is unlikely that it would be willing to accept a large open position. The degree of currency substitutability may thus be quite low in many cases.

Another aspect of currency substitution is that the smooth working of the adjustment mechanism requires market transactors to take open positions in "weak" currencies. It is countries with weak balances of payments that need to attract a net capital inflow, and the providers of these funds naturally ask themselves what consequences balance-of-payments adjustment will have for the value of their investment. Although an exchange-rate depreciation may appear sufficient to restore external balance, foreign holders may still be reluctant to acquire the currency if they fear that the depreciation might set off a round of domestic inflation or might be perceived as inadequate by other participants in the foreign-exchange market. Further, countries with weak balances of payments also often happen to be countries with unstable underlying economic and political conditions. The cumulative influence of all these factors may lead many transactors to consider investment in assets denominated in certain currencies as "unsuitable" in the same way that they exclude from consideration certain low-quality shares or bonds regardless of yield.

Risk aversion may therefore cause exchange rates to depart from what would be an appropriate level for longer-run equilibrium. This would be particularly likely when there is a large disturbance in trade flows. When such a disturbance occurs (for example, the oil-price increase of late 1973), it is not to be expected that current-account positions will quickly adapt to a balance financed by sustainable capital flows. Additional capital flows are needed during a transitional period while adjustment is taking place. This means that foreign residents must be prepared to take open positions in the currencies of deficit countries. If this is difficult to do

because markets are thin or unattractive or because of the risks involved in any open position, there is a danger that exchange rates will depreciate by more than is necessary to secure the needed adjustment in the current account.

In the case of the oil-price increase of late 1973, countries with large oil deficits and small financial markets might not have been able to attract capital on a sufficient scale to maintain an exchange-rate appropriate to longer-run adjustment. In such a situation, intervention by central banks financed from reserves or from compensatory official borrowing can have a key role to play while gradual adjustment takes place in goods markets. More generally, countries with narrow financial markets may find it necessary to intervene in the exchange market to offset the effects of cyclical and other temporary variations in their export receipts and import payments.

*Monetary Policies and Exchange Rates*

Another way in which exchange rates can be pushed away from their longer-run equilibrium value is through the response of exchange markets to unexpected monetary measures, and the resultant shifts in interest differentials. It is, of course, not surprising that changes in interest differentials should have an influence on exchange rates. What is less well understood is why relatively small monetary disturbances have in recent years sometimes been accompanied by disproportionately large exchange-rate changes. (For an empirical study of the effects of monetary disturbances on the U.S. dollar/deutsche mark rate, see Artus, 1976.) An explanation that is sometimes advanced to explain these disproportionately large exchange-rate movements is based on the bandwagon hypothesis: the change in the interest-rate differential caused by the monetary shock leads initially to a small change in the exchange rate; speculators project further exchange-rate movements in the same direction and act on these projections; their action brings about further exchange-rate movements. This explanation, as it is usually presented, implies irrational market behavior. There is, however, an alternative explanation that attributes greater rationality to speculators and is intuitively more appealing. It focuses on the relation between monetary measures and expected price changes, and it also draws attention to the effects of monetary measures on nominal interest rates and on portfolio composition.

For analytical purposes, a discretionary change in monetary policy, defined as a discretionary change in the money stock, can be viewed as affecting speculators' expectations in one of three possible ways: it may