

II Overview of the Issues

Fluctuations in exchange rates can affect international trade in a number of ways. They may increase the costs and uncertainties of trade, inducing economic agents to directly reduce their international transactions. More indirectly, they may induce producers and traders to alter the structure of their output and investment, in order to reduce their exposure to risk. This, in turn, can have implications over the long run for trade flows. Going beyond the impact of exchange rate fluctuations on the behavior of economic agents, they can also affect governments' policy formation by changing the policy trade-offs faced by governments or by increasing pressure on the government to counteract their perceived ill effects.

Uncertainty Costs

It is an accepted proposition in economics that economic agents are, in general, risk averse, so that greater risks either get built into prices or reduce quantities supplied and demanded at a given price. If the only source of uncertainty in international trade related to the exchange rate, it would probably be undeniable that greater variability in exchange rates inhibited trade (Clark, 1973; Hooper and Kohlhagen, 1978). There are, however, many forms of uncertainty to which economic agents are exposed, and it is not necessarily the case that exchange rate variability is independent of the others (Friedman, 1953). To take only the most obvious example, if exchange rates move to offset divergences in underlying inflation rates, the uncertainties facing traders might be less than in a situation where inflation rates continued to diverge but exchange rates remained constant (Pigott, Sweeney, and Willett, 1975). Similarly, where balance of payments pressures have previously been dealt with by changes in trade restrictions, acceptance of greater rate movements may simply substitute price uncertainty for the previous equally important uncertainties about administrative restraints on trade (Johnson, 1969).

Empirical testing of the effect of exchange rate variability would ideally seek a measure of the net additional uncertainty introduced by exchange rate variability in any period. In the absence of such a measure, the only available approach, and the one adopted by virtually all

researchers in the field, is to use observed exchange rate variability as a measure of uncertainty. If no adverse consequences for trade are detected, the conclusion is either that the uncertainty costs are small or that they have been systematically offset by countervailing changes in other elements of uncertainty. It cannot be stressed too strongly, however, that the difficulty of separating out the effects of exchange rate uncertainty from those of other and related features of the economic environment implies that considerable caution should be employed in interpreting empirical results, whether the results are positive or negative.

There remains the question of what measure of variability best approximates the uncertainty faced by participants in international trade. As discussed in more detail in Section III below, there is no clear-cut answer to this. Some trade has a very short-term time horizon, and is conducted on an essentially fixed price basis. In such cases, traders are concerned with the short-term variability of a bilateral nominal rate. Other forms of trade involve producing for worldwide markets that are expected to absorb sales over an extended period. In these cases, the producer is concerned with stability in the relationship between his production costs and sales proceeds in the average of all his foreign markets; the most relevant variability measure would be long-term fluctuations in the real effective exchange rate.

Adjustment Costs

In addition to increasing costs through uncertainty, exchange rate fluctuations may require costly shifts of resources between economic activities in response to changing price incentives (Kreinin and Heller, 1974). As the exchange rate for a given currency moves down, a wider range of products becomes profitable to produce and export. For currencies that are strengthening, the size of the foreign trade sector tends to shrink correspondingly. Thus traders may be induced in favorable times to develop foreign markets, and even to install production capacity that turns out to be unprofitable when exchange rates move in the opposite direction.

This effect was reviewed in the Fund's Annual Report for 1982 (p. 45):

Although little direct evidence is currently available on the costs of such swings in resource allocation, it seems likely that they have contributed to uncertainty about the profitability of various industries and may thereby have inhibited fixed capital formation, particularly in countries with a large foreign trade sector. In addition, because goods and labor markets are far from being perfectly efficient, such swings can contribute to wasteful investment and to unemployment.

The kinds of exchange rate fluctuations that give rise to adjustment costs are likely to be those that persist for a protracted period. Investment and production decisions are rarely changed in response to short-term fluctuations in profitability, nor will such short-term fluctuations affect the viability of firms or industries (Williamson, 1983). Indeed, as McKinnon (1978) points out, the fact that exchange rates have become more variable may well reduce the responsiveness of resource allocation decisions to relative price changes, at least in the short term. Economic agents may be reluctant to change existing patterns of resource use and trade flows until they are persuaded that a given exchange rate change will not soon be reversed. It is more likely to be relatively long-lasting departures from exchange rate trends that cause decisions to be taken which, in a more stable environment, would not have been made.

Quantitative assessment of adjustment costs is particularly difficult. They may not show up in a reduction in the volume of trade relative to output since the ebb and flow of trade shares among countries may be offsetting in an aggregate sense. To the extent that adjustment costs do have an adverse effect on trade flows, this may work through reducing levels of output and investment and creating higher levels of frictional unemployment. Since such an effect would not alter the relationship between trade and its other determinants, there would not necessarily be any residual effect to be explained by exchange rate factors.

Some broad indication of the degree of adjustment that is taking place in the external sector is provided by developments in current account positions. Section V, below, therefore presents some evidence on the extent to which greater fluctuations in exchange rates have been associated with greater shifts of real resources into and out of the foreign trade sector.

International Investment

As well as influencing patterns of trade, exchange rate variability can have an impact on the pattern of international investment. A multinational firm, in deciding where to locate new investment, has to take into account not only technical factors affecting cost but also the uncertainties of currency relationships. This may lead to

a diversification of investment, even at some cost in terms of efficiency, in order to minimize risks stemming from currency instability. As a result, instead of production facilities being concentrated in the lowest-cost location, they may be located in a number of different currency areas.

While this kind of diversification may appear to be in response to exchange rate uncertainty, in the majority of cases it is more likely to be the prospective level of the rate, rather than its variability, that causes the uncertainty. When a company decides to invest abroad to diversify its exchange rate risk, the risk it is likely to be most concerned about is the level around which the exchange rate is likely to fluctuate rather than the size of month-to-month or quarter-to-quarter fluctuations that cancel out over time. Such a company will also be more concerned with exchange rate movements that affect the relationship between its cost of production and its sales return rather than just the nominal value of one currency in terms of another. For example, a company could prefer to invest in a country that had a well-established mechanism for adjusting its exchange rate, to ensure that domestic costs and prices did not get too far out of line with those abroad, rather than in a country where nominal exchange rate variability was less but exchange rate "stickiness" resulted in more uncertainty about real rates and hence profitability.

Structure of Output

While the potential adverse effects of exchange rate variability are most apparent for producers and traders directly involved in international transactions, they can be important also for suppliers in their domestic markets. If foreign producers have a significant share of a given market, an improvement in their competitiveness may require domestic producers to cut their profit margins or face an erosion of their market share. Hieronymi (1983) suggests that a more erratic behavior of relative prices, engendered or reinforced by exchange rate movements, has shortened the time horizon of decision makers, made long-term commitments less attractive, and had a dampening or delaying effect on investment decisions.

To the extent that relative price uncertainty is a major factor in decisions on resource allocation, it would be expected to also result in a gradual switch in investment and output away from traded goods industries (which are more exposed to such uncertainty stemming from exchange rate variability) and toward nontraded goods in the service and other sectors. If, as seems plausible, the capital/labor ratio is generally higher in manufacturing and traded goods industries than in the nontraded goods sector, such a shift in industrial structure could also result in lowering the total level of investment. If, as is also sometimes alleged, technological advances tend to

be more rapid in manufacturing than in services, this factor would compound the influence of lower investment in reducing potential growth rates. These and other issues are investigated further in Section V, below.

Large vs. Small Firms

It is sometimes argued that excessive exchange rate variability tends to have a more serious effect on small firms than on large firms, and thus tends, over time, to promote an undesirable degree of industrial concentration. There are several channels by which this effect could come about. Since foreign exchange risk management involves fixed costs, in terms of management time, these weigh more heavily on smaller enterprises. It is also likely that larger enterprises have a more diversified product and market structure than smaller ones, and have more "natural" protection against swings in exchange rates. This is particularly true for multinational enterprises (Aliber, 1983), whose production sources, as well as markets, are in several countries whose currencies move independently. Last, it is argued that larger firms have greater financial resources, and are thus better able to withstand a period of weak profitability due to an adverse movement in exchange rates.

If, for these reasons, larger firms tend to acquire a competitive advantage vis-à-vis smaller firms during periods of exchange rate volatility, this could affect trade in several ways. A reduced role for smaller firms could inhibit innovation, which is sometimes considered to be stronger in smaller enterprises, while more concentration would tend to reduce competition.

It is perhaps unlikely that these effects could be detected among all the other influences on trade and productivity. Whether there is a measurable effect at all depends on the initial premise that rate variability works against the interests of smaller enterprises. Very short-term movements in rates need not impose uncertainty costs, since hedging through the forward market is an option that is available to all. Considering longer periods, for which effective hedging in the forward market is not an option, the issue is whether small firms are less able to survive periods in which exchange rates have an adverse effect on profitability. The kind of evidence that would be relevant, although not conclusive, in this connection is whether the survival rate of small firms, relative to large firms, has changed significantly during the period of exchange rate volatility.

Competition and Concentration of Output

For similar reasons that exchange rate variability could favor large firms over small ones, it could also favor relatively efficient producers over less efficient ones. In

broad terms, of course, this is desirable, and indeed is the mechanism by which economic resources are redirected over time to their most appropriate uses. But if it leads to an undue concentration of production, in particular firms or countries, it could, over the longer term, have adverse effects on the level of competition and on the stimulus to innovation and productivity.

It may be, for example, that when a particular country's exchange rate is low relative to trend it makes such inroads into export markets that local producers in these markets lose economies of scale and are forced to cease, or severely curtail, production. (It is sometimes alleged that this has tended to happen to European producers of consumer electronic goods in the face of Japanese competition.) Then, when the exchange rate moves back again, the exporter may have a sufficiently strong market position to maintain his export share, despite a loss of competitiveness. Over time, this could lead to a pattern of international trade in which countries become increasingly specialized in particular products and industries. This would actually lead to more trade (relative to production), but the advantages of such added specialization could be outweighed by a reduction in effective competition, and also by the fact that adjustments to changes in trade flows resulting from exogenous developments would become more difficult.

Such a tendency could be examined by reviewing data on the commodity composition of trade to ascertain whether there had been an observable increase in concentration. Among all the other factors that affect the commodity composition of countries' foreign trade, however, it seems unlikely that exchange rate variability could easily be distinguished as a separate causal element.

Inflation

It has been argued that greater variability of exchange rates may itself be an independent cause of inflationary pressures (Wanniski, 1975). The basic mechanism at work depends on price increases resulting from exchange rate depreciation having a larger or more lasting impact than reductions that occur when the exchange rate appreciates (Mundell, 1976). This can occur for a variety of reasons: because price setters respond more rapidly to developments that tend to erode their incomes than to those that increase them; because there is downward rigidity in prices, so that a ratchet effect operates on the price level; and because it is easier for price setters to put through an increase in real prices when there is an external circumstance (e.g., a declining exchange rate) on which to place the blame. It could also be the case that monetary authorities are more willing or able to resist exchange rate appreciation through exchange market in-

intervention than to undertake the corresponding action to resist depreciation. If this were so, intervention, to the extent that it was not sterilized, would tend to increase the global stock of money. Countries with appreciating rates would tend to acquire foreign exchange and thus to provide in return domestic currency which would form part of the money supply. Countries whose exchange rates are depreciating, on the other hand, might be less willing to squeeze domestic liquidity through unsterilized intervention.

Such a relationship between exchange rate variability and inflation would influence trade both because a higher average rate of inflation would increase uncertainty, and thus tend to lower output, and because the policies adopted by the authorities to counteract inflation would themselves be likely to curtail demand. The kind of empirical evidence that would be relevant to this question would involve a comparison of countries' inflationary experiences with the degree of variability in their exchange rates. More indirectly, the speed with which the domestic price level responds to increases/decreases in import prices would provide evidence regarding the existence of a ratchet effect.

Macroeconomic Policy

Beyond their impact on inflation, exchange rate movements can have implications for other objectives of macroeconomic policy, and for the effectiveness of the various policy instruments used to achieve them. To the extent that exchange rate variability interferes with or complicates the authorities' task in stabilizing the domestic economy, it would tend to worsen the conditions for optimal trade growth. Of course, the opposite also applies: if the freedom of exchange rates to move frees other policy instruments for the pursuit of stabilization goals, it can promote trade growth. This, indeed, was one of the principal arguments advanced for flexible exchange rates during the fixed rate period (Friedman, 1953; Johnson, 1969).

A distinction should be drawn between exchange rate flexibility and exchange rate variability. The fact that exchange rates are free to move may provide a shock-absorbing capacity to the system that helps permit national authorities to focus on domestic economic priorities, despite external disturbances. However, if exchange rates actually do vary substantially and unpredictably, this may be a source of uncertainty that the authorities need to counteract through diverting other policy instruments to the task of exchange rate stabilization.

Perhaps the most serious difficulty that exchange rate variability presents for macroeconomic policy is its potential to generate a "vicious circle" of exchange rate depreciation (Bilson, 1979). The "vicious circle" hypothesis holds that an exogenous exchange rate deprecia-

tion will cause the country that suffers it to experience an increase in domestic inflation and a deterioration in its balance of payments (since terms of trade effects will dominate volume of trade effects in the short run). These two factors have adverse effects on exchange rate expectations, bringing about a further depreciation of the exchange rate and a renewed twist to the vicious circle. For countries undergoing an initial exchange rate appreciation, a "virtuous circle" of price stability, balance of payments strength, and exchange rate appreciation sets in. These divergent trends, it is sometimes alleged, are encouraged by, and in turn help to perpetuate, exchange rate variability. They complicate the task of restoring and maintaining stability in individual national economies, and can create strains in the operation of the international adjustment process.

Protectionism

One of the most serious potential consequences of exchange rate instability is its impact on the international trading climate (Bergsten and Williamson, 1983). Swings in exchange rates involve movements in competitiveness, which can create hardship for industries that find their foreign (and, indeed, their domestic) markets shrinking in consequence. If transitory or "unjustified" movements in exchange rates are perceived as being the cause of such hardships, there will inevitably be pressure for protection against them. If this protection cannot be provided by action to prevent or reverse the original exchange rate movement, then it may be sought in the form of direct restrictions on trade, temporary tariff protection, domestic and/or export subsidies, or a slowing down of the pace of liberalization.

Against the costs which an exchange rate movement provides to countries whose competitiveness suffers, there are benefits for countries whose competitiveness is improved. It could be that the margin for a reduction in protection in countries where the exchange rate moves down counterbalances the increase in protectionist pressures in countries where demand is adversely affected by exchange rate factors. Nevertheless, it is often observed that a ratchet effect is likely to operate: protectionist measures are quicker to be imposed than removed, and once imposed tend to acquire a constituency of interest that makes their removal difficult. It has also been suggested (Bergsten and Cline, 1983) that a "bicycle" effect operates: forward momentum toward liberalization is more sustainable than a stationary situation. When this momentum is arrested, protectionist pressures begin to feed on themselves. Thus, if exchange rate variability results in substantial swings in competitiveness, the cumulative effect may be to generate a net increase in protectionist pressures, and, by blunting the case for an open trading system, may halt the progress toward liberalization.

To the extent that such effects show up in reduced levels of international trade, their impact will be captured in the quantitative relationships discussed in Section IV, below. It would not be possible, however, to distinguish from such relationships between the effects of protectionism and those of uncertainty and other factors in inhibiting trade flows. In Section VI, therefore, a more qualitative assessment is made of the relationship between exchange rates and the stance of trade policies.

Developing Countries

For the most part, developing countries have maintained some form of pegging arrangement for their currencies (International Monetary Fund, Annual Report, 1983). This means that the uncertainty in their nominal exchange rate relationship has two components: variability in the rate at which they peg to the numeraire currency or composite, and variability in the relationship between the numeraire and the other major currencies in world trade. In terms of competitiveness, a further element of variability is added by fluctuations in relative price levels, though it is perhaps to be expected that over time this would be offset by changes in the peg.

Helleiner (1981) argues that exchange rate turbulence has relatively greater adverse consequences for developing countries than for developed countries. Since trade is less frequently denominated in domestic currencies, traders face a greater measure of uncertainty, especially because forward facilities are less readily available or more expensive. Furthermore, when a developing country pegs its currency to that of a major trading partner, and therefore floats against the currencies of other industrial countries, this creates a preference for bilateral trade with the country to which it is pegged. Such a tendency forgoes the benefits of multilateral trading relationships and causes a less than full exploitation of comparative advantage. Another potential disadvantage arises from the premium which variable exchange rates place on responsiveness and flexibility in production and trade. Helleiner considers that this is likely to leave poor countries (and small firms) at a relative disadvantage. Last, if debt is largely denominated in a single currency, as indeed is the case for most developing countries, its value relative to exports is likely to vary in response to exchange rate swings among industrial country currencies. These exchange rate fluctuations could, therefore, result in random changes in perceived creditworthiness of developing countries, with potential adverse consequences for a stable level of capital inflows.