I Introduction

In view of the continuation of substantial movements in exchange rate relationships among major currencies, the recent increase in protectionist pressures, and the disappointing performance of world trade, renewed concern has been expressed about the possible adverse effects of exchange rate variability on trade. Against the background of this concern, the following decision was reached at the ministerial meeting of the General Agreement on Tariffs and Trade (GATT) in November 1982.

> THE CONTRACTING PARTIES DECIDE:
> To request the Director-General to consult the Managing Director of the International Monetary Fund on the possibility of a study of the effects of erratic fluctuations in exchange rates on international trade, to report to the Council on the results of these consultations and to forward any such study to the Council so that it may consider any implications for the General Agreement.

This paper has been prepared in response to the above decision, and in consultation with the Director-General and officials of the GATT. It is worth noting that concern over the recent functioning of the exchange rate regime goes beyond those officials concerned primarily with trade issues. Early in 1983, U.S. Secretary of State George Shultz (1983, p. 379), noting that the Japanese yen/U.S. dollar rate had moved down by 20 percent and then back up again by the same amount over a seven-month period in 1982, stated that "the problem [of excessive exchange rate volatility] warrants close study by the major currency countries." Alexandre Lamfalussy (1983, p. 2), Economic Adviser to the Bank for International Settlements, says: "It is hard to imagine that the volatility of such a key price as the exchange rate could have anything other than an adverse influence on economic decision-making . . . . [It] creates a climate of uncertainty which is bound to have an adverse impact on decisions concerning investment, production and trade." Akio Morita (1983, p. 3), Chairman of Sony Corporation of Japan, expresses the view: "If the value of currency fluctuates widely for various reasons entirely unrelated to the business involved, then it would not be difficult to understand that normal economic activity suffers as a result." And the former Governor of the Bank of England, Lord Richardson (1983, p. 198), says that "one must suspect that [exchange] markets have displayed a persistent tendency to overshoot, and have produced greater volatility than justified by underlying conditions."

These concerns have been heightened by the recent weakness of world trade. The volume of world trade, which had grown at an annual average rate of 8½ percent during the period 1963–72, increased by only 6 percent per annum during the remainder of the 1970s, and was stagnant, on balance, during 1980–82. While a number of factors have contributed to this development, as discussed in more detail below, the coexistence of trade weakness and exchange rate instability has naturally prompted questions about the possibility of a causal link.

The objective of this paper is to review, analyze, and, where possible, present evidence concerning the implications of exchange rate variability for international trade. It adopts a deliberately broad definition of "erratic exchange rate fluctuations," and of the consequences that are relevant for trade flows. The aim is to deal with as many as possible of the potential costs and uncertainties for producers and traders that arise from reversible movements in exchange rates. All reversible movements will be considered, whether or not the reversal takes place within a short time span, and whether or not the movement can be "explained" with reference to financial market factors such as shifts in interest rate differentials. Indirect as well as direct consequences of exchange rate variability will be discussed. The paper will, therefore, consider not only direct effects of exchange rate fluctuations on the level and pattern of international trade but also their effects on domestic production and investment decisions, their implications for inflation, and the constraints they place on governments' ability to pursue domestic economic objectives.

Given the breadth of the subject, it is necessary to place certain limitations on the scope of the paper. First, it will be concerned with the implications of fluctuations in exchange rates rather than with levels. The judgment of what constitutes an appropriate exchange rate level, and what are the trade implications of indefinite maintenance of an inappropriate level, lies beyond the purview of this paper. Of course, some of the adverse effects of exchange rate volatility arise from a sequence of inappropriate levels—as when resources have to be shifted in and out of the foreign trade sector in response to shifting incentives. Thus a hard-and-fast distinction between the

consequences of fluctuations in exchange rates and inappropriate levels is not really sustainable. When an exchange rate movement is reversed only after a considerable period (something that is considered here as a long-term fluctuation and thus within the scope of the paper), any perceived misalignment during the intervening period may well appear to observers as a problem of the exchange rate level (Williamson, 1983).

Second, the paper does not venture into an accounting of the welfare costs and benefits of international trade. It is generally assumed that a reduction in the level of trade tends to reduce welfare. While this is true, broadly speaking, the welfare implications are hard to measure and not always clear cut (Lanyi, 1969). In some circumstances, an increase in trade can imply substantial welfare benefits, whereas in others, the benefits may be offset by distortions in the pattern of trade. The paper will attempt to point out some of the considerations that need to be taken into account in judging the gains and losses from changing levels and patterns of trade but does not go into formal measurement.

Third, the paper does not attempt to compare one exchange rate system with another (e.g., fixed vs. floating rates). The objective is rather to assess the implications of exchange rate variability for trade whatever the formal system that is in existence for establishing nominal exchange rates. Exchange rate variability is only one dimension of instability or uncertainty, and changes in it may be associated with offsetting (or compounding) changes in other factors.

Fourth, the paper deals largely with exchange rate variability among the major industrial countries. While it is true that the exchange rates of other countries, particularly developing countries, exhibit considerable movement over time, it is the degree of movement among the major currencies that constitutes the exchange rate "environment" within which other countries have to plan their policies. The implications of this "environment" for developing countries are discussed and analyzed in the sections that follow; but the additional variability resulting from the actions of countries outside the major seven is not explicitly considered.

Last, the paper does not discuss whether policies are needed to achieve greater exchange rate stability and if so what those policies should be. The considerations to be taken into account in managing the evolution of the international monetary system go beyond its implications for trade flows, although this is important.

Section II of the paper provides a comprehensive summary of the mechanisms by which exchange rate variability could be expected to influence trade flows. It attempts to cover the main concerns that have been raised about the possible adverse consequences of exchange rate variability, and to identify the kinds of evidence that might be relevant in assessing them. Section III is concerned with the quantitative measurement of exchange rate variability. Measurement involves a number of quite difficult conceptual issues, on which no final agreement is possible, since economic agents are in different situations, and the kinds of instability that matter to them vary. After a discussion of the conceptual issues, this section turns to an analysis of the evidence on variability over the past two decades, using a variety of definitions.

Section IV discusses evidence on the direct effects of exchange rate variability on trade flows. Existing theoretical and empirical work is reviewed, and in some cases updated. In addition, the results of survey work are reported. Section V deals with the indirect impact of exchange rate variability on trade, through its effect on the pattern of output and investment. Among the subjects included in this section are differential impacts on traded versus nontraded goods industries; consequences for small versus large firms; and impacts on competition and industrial concentration. Section VI assesses the effects of exchange rate fluctuations on the economic environment in which firms operate. The issue here is whether exchange rate fluctuations worsen the trade-off between unemployment and inflation, or otherwise complicate the process of formulating macroeconomic policy and controlling inflation. Another important issue that is dealt with in this section is whether exchange rate volatility leads to greater pressures for protection.

Section VII attempts to put the preceding discussion in perspective by analyzing the significance of the findings that have been reached. It discusses some of the reasons why exchange rates might have been so variable over the past ten years, and the economic functions that exchange rates perform, over and beyond their task of providing appropriate signals for international trade flows. Section VIII of the paper is intended to be a self-contained synopsis of the analysis and conclusions of the main text.

A number of appendices present statistical series on exchange rate variability and describe the empirical tests that are reported more briefly in the main text.