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January 3, 1984

To: Members of the Executive Board

From: The Acting Secretary

Subject: The Exchange Rate System - Lessons of the Past and Options for the Future

The attached paper on lessons of the past and options for the future of the exchange rate system has been tentatively scheduled for discussion at an Executive Board Seminar on Monday, January 30, 1984.

If Executive Directors have technical or factual questions relating to this paper prior to the seminar, they should contact Mr. Goldstein, ext. (5)7678.

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INTERNATIONAL MONETARY FUND

The Exchange Rate System: Lessons of the Past and Options for the Future

Prepared by the Research Department

(In Consultation with other Departments)

Approved by Wm. C. Hood

January 3, 1984

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I. Introduction

The last few years have witnessed a resurgence of calls for a re-examination, or perhaps even a reform, of the international monetary system. This paper contributes to the ongoing debate on that subject in three ways: first, it suggests a set of criteria for evaluating alternative exchange rate systems; second, it provides a comprehensive appraisal of a decade of experience with the present exchange rate system in terms of those criteria; and third, it selects some key issues as a basis for discussion on how the evolution of the exchange rate system might best be managed over the medium term.

To keep the paper within manageable proportions, two restrictions have been placed on its scope. The first is that the paper does not deal with the issue of international liquidity. In a sense, therefore, the paper confronts only "half" of the international monetary system. This is not meant to imply that there are no serious problems outstanding in this area. Clearly, while some of the "confidence" and "liquidity" problems highlighted so effectively by Triffin [1960] have subsequently been reduced by the creation of an internationally managed reserve asset (the SDR) and by the increased flexibility of exchange rates, 1/ other problems still remain, 2/ and some new ones have arisen. 3/ However, a thorough treatment of such liquidity questions would go beyond the feasible range of one paper, and it remains the case that many issues in the evolution of the exchange rate system can be profitably discussed within current reserve and liquidity arrangements.

The second restriction is that in discussing both the past performance of managed floating and the broad options for modifying the exchange rate system, the emphasis is on the larger industrial countries. 4/

1/ The importance of managing international liquidity under floating rates is analyzed in Crockett [1978] and in Haberler [1977].

2/ Such "old" problems include the effect of liability rather than asset settlement of external imbalances on the incentive to adjust, large and sudden demand shifts among reserve currrencies, the different attitudes about the valuation of gold in public versus private portfolios, and how to ensure an appropriate transfer of real resources to the developing countries.

3/ Examples of these "new" problems are the abrupt shifts in commercial bank lending to developing countries, the identification of lender of last resort in the Eurocurrency markets, and how to keep the SDR viable during the periods when there are no allocations. Some of these new problems are discussed in Witteveen [1983].

4/ This restriction may not be too serious because at least three recent studies (namely, Cline [1976], Helleiner [1981], and Williamson [1980]) focus specifically on the impact of the exchange rate regime on developing countries. Also, see the Brandt Report [1980], pp. 201-220. Finally, Chapter 2 in the Fund's Annual Report traditionally contains an assessment of how developing countries are coping with exchange-rate-system problems.

This is not intended to deny the importance of the exchange rate system to the smaller industrial countries or to the developing countries; nor does it question the desirability--indeed the necessity--of their full participation in any restructuring of that system. Instead, this emphasis reflects the facts that the larger industrial countries account for a large share of total international trade and capital flows, 1/ that much of the trade of other countries (particularly in primary commodities) is denominated in the currencies of the large industrial countries, 2/ that most developing countries and many of the smaller industrial countries have adopted some form of "pegging" or "limited flexibility" in their exchange arrangements, that "structural" factors limit the feasible set of exchange rate system options for these countries, 3/ and that it is the variability of large-country currencies that has prompted calls for re-examination of the system.

The plan of the rest of the paper is as follows. Section II contains a background description of both the present exchange rate system and the global "environment" of the past ten years. The description of the exchange rate system covers the nature of exchange arrangements and of international codes of conduct for exchange rate behavior, and the extent of both exchange rate variability and official intervention in exchange markets. The environment is described not only by the performance of the seven larger industrial countries with respect to inflation, unemployment, economic growth, and labor productivity, but also by the combination of external disturbances and structural and institutional changes that contributed to that (unfavorable) macroeconomic performance.

Section III provides a comprehensive evaluation of the present exchange rate system, drawing not only on the past ten years of experience with managed floating but also on accumulated experience with earlier exchange rate systems (especially the adjustable peg system). That evaluation is guided by four criteria that are applicable to all exchange rate systems, namely: (i) how does the system help or hinder macroeconomic policy in pursuit of fundamental domestic economic objectives; (ii) how effective is the system in promoting external payments adjustment; (iii) how does the system affect the volume and efficiency of world trade and investment; and (iv) how robust or adaptable is the system to changes in the global economic environment? The main "lessons" of the floating rate experience, as well as a summary of the present system's principal strengths and weaknesses, are presented in Section IV.

1/ In 1982, for example, the seven largest industrial countries accounted for 51 percent of world exports and 51 percent of world imports.

2/ See Magee and Rao [1980].

3/ These "structural" factors include the breadth and depth of financial markets, the commodity structure and degree of openness of trade, and the degree of real wage flexibility in labor markets.

Finally, Section V considers some possible directions for the managed evolution of the exchange rate system. The purpose of Section V, however, is not to draw firm conclusions but rather to offer a focus for discussion by Executive Directors on how the present exchange rate system might be altered in desirable and feasible ways. The Board will receive other papers from time to time, and in particular the paper on "Review of the Document 'Surveillance Over Exchange Rate Policies' and Annual Review of the Implementation of Surveillance," in which more specific judgments as to whether to retain or adapt features of the present system will be offered.

II. Background Descriptions of the Exchange Rate System and the Operating Environment

A logical starting point for any discussion of modification of the exchange rate system is an examination of the present exchange rate system. Such an examination should include at least three elements: first, an identification of the main descriptive characteristics of the present system; second, a summary of the operating environment in which the present system has had to function; and third, an evaluation of the present system in terms of normative criteria applicable to all exchange rate systems. This section of the paper is aimed at the first two of those elements.

1. Descriptive characteristics of the present exchange rate system

The present exchange rate system can be described by the following four prominent characteristics.

a. There is a wide diversity of exchange arrangements among countries. Peggers far outnumber floaters but most of world trade and finance is conducted among countries whose exchange rates float against each other. Under the Bretton Woods system of adjustable par values, all countries had to adhere to declared par values for their currencies; further, these par values could be altered only to correct "a fundamental disequilibrium" and only after "consultation with the Fund." In contrast, the present system allows member countries almost complete freedom of choice about their exchange arrangements; indeed, the only restriction is that if a country chooses to peg its rate, it must not denominate that peg in terms of gold.

This freedom of choice has been vigorously exercised. As of June 30, 1983, 93 countries, almost all of them developing countries, chose to peg their currencies to a single currency or to a currency composite; 17 countries opted for what the Fund calls "limited flexibility vis-a-vis a single currency or cooperative arrangements," including the 8 European countries that operate within the cooperative

exchange arrangements of the European Monetary System; and 35 countries adopted "more flexible" exchange arrangements, including "independent floating" by 4 of the largest industrial countries (namely, Canada, Japan, the United Kingdom, and the United States); see Appendix Table 1 for a more detailed breakdown. Over the floating rate period as a whole (1973-83), there has been a trend away from "pegged" exchange arrangements to "other" arrangements, and within pegged arrangements from single-currency pegs to currency-composite pegs (with former U.S. dollar peggers accounting for the bulk of the latter shift). 1/ Thus, if anything, exchange arrangements have become more heterogeneous during the period of floating rates.

The relatively large number of countries maintaining some form of pegging arrangement should not create the impression that the present system is basically one of fixed rates. In fact, in trade-weighted terms, the current system is much better classified as "floating." This is because most of the largest traders maintain either "limited flexibility" or "more flexible" exchange arrangements. More specifically, whether one measures "floating trade" as the total trade of those countries with other than pegged exchange arrangements, or in a more sophisticated manner, as the global sum of that portion of each country's trade that takes place at floating rates, it turns out that about two thirds to four fifths of world trade is conducted at floating rates. 2/

The fact that countries have chosen to adopt such a wide variety of exchange arrangements carries at least two important implications for the succeeding analysis. The first one is that caution is needed in referring to the present exchange rate system because there are in reality many exchange rate subsystems. This feature serves to cloud comparisons with more homogeneous past exchange rate systems. The second implication is that the optimal degree of exchange rate flexibility may really be different across countries, owing in large part to their different

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1/ For example, the Fund's 1982 Annual Report (p. 58) indicates that between 1975 and 1981 the proportion of Fund membership that maintained "pegged" exchange arrangements declined from 78 percent to 65 percent while participation in the residual category "other arrangements" increased from 12 percent to 26 percent. During the same time span, the proportion of single-currency pegs among all peggers dropped from 72 percent to 62 percent; also, within single-currency peggers, the proportion of dollar peggers fell slightly from 69 percent to 68 percent (in tradeweighted terms, however, the shift away from dollar-pegging is much more pronounced). Other statistics on the geographic dimensions of floating can be found in de Lattre [1983].

2/ See Goldstein and Young [1979] and Solomon [1983].

economic structures and to the different nature of the shocks facing them. 1/ This means, for example, that any proposal that requires all participants to adhere to the same degree of exchange rate flexibility, be it large or small, may well meet strong resistance from at least some country group or groups. This is apt to make the process of consensus building that much more difficult.

b. Exchange rates continue to be viewed as a matter of international concern. A stable system of exchange rates is now seen, however, as dependent more on stable macroeconomic policies at the national level than on the form of the exchange rate regime itself. Also, the Fund's obligations for surveillance over countries' exchange rate policies are now much greater than before. Despite frequent complaints that present arrangements are a "non-system," it is not true that there is less concern in present codes of conduct about the obligations of countries with respect to their exchange rate policies. Like their immediate predecessor, the present Articles of Agreement (as amended in 1978) enjoin member countries to collaborate with the Fund and other members to "...assure orderly exchange arrangements and to promote a stable system of exchange rates." 2/ Further, the present Articles are quite specific in their view of why a stable system of exchange rates is beneficial to the world community. Such a system, in the words of Section 1 of Article IV, "...facilitates the exchange of goods, services, and capital among countries, and... sustains sound economic growth." What is different about the present codes can be summarized under three points.

First, the present codes give clear support to the view that the path to exchange rate stability lies fundamentally in the pursuit of sound domestic policies at the national level, whatever the particular form of exchange arrangements adopted by a country. Toward this end, each member country should "...endeavor to direct its economic and financial policies toward the objective of fostering orderly economic growth with reasonable price stability" and "seek to promote stability by fostering orderly underlying economic and financial conditions and a monetary system that does not tend to produce erratic fluctuations." In contrast, the Bretton Woods codes required stability of exchange rates in terms of adherence to declared par values but were not explicit

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1/ Some of the recent theoretical literature supports this conjecture; for example, see Branson [1983], Frenkel and Aizenman [1982], and Lipschitz and Sundararajan [1980].

2/ Article IV, Section 1. The previous Articles (Article IV, Section 4) enjoined members to collaborate with the Fund "...to promote exchange stability, to maintain orderly exchange arrangements with other members, and to avoid competitive exchange alterations."

as to how the domestic policies conducive to such stability were to be fostered.

A second key difference is that the present codes recognize explicitly that a system of stable exchange rates can be jeopardized as much by insufficient exchange rate flexibility (in the form of prolonged maintenance of overvalued or undervalued rates) as by excessive flexibility. Thus, whereas the Bretton Woods code directed countries to "...avoid competitive exchange alterations," the present codes warn countries to avoid manipulating exchange rates either "...to prevent effective balance of payments adjustment" or "...to gain an unfair competitive advantage over other members."

Third, the present codes imply a more active role for the Fund itself in monitoring the adherence of countries to their exchange rate policy obligations. Thus, whereas the Bretton Woods code assigned the Fund only the responsibility to concur or to object to par value changes proposed by a member country, the present codes require the Fund "...to oversee the international monetary system in order to ensure its effective operation," and in so doing, "...to exercise firm surveillance over the exchange rate policies of members" and "...to adopt specific principles for the guidance of all members with respect to those policies."

The actual achievement of a stable system of exchange rates rests, of course, not only on the existence of clearly specified and well understood codes of conduct but also on the implementation of such conduct. If such conduct has not been forthcoming during the floating rate period, it is not because the codes for such conduct do not exist.

c. Exchange rate variability has been substantial--and this for both nominal and real exchange rates, for both bilateral and effective exchange rates, and for both short- and longer-term time horizons. Exchange rate variability has been significantly greater than under the adjustable par value system and greater than variability in national price levels but less than the variability of other "asset" prices. Also, there are strong indications that most exchange rate changes have been unexpected. Prior to the advent of (managed) floating, critics of floating exchange rates predicted that exchange rate changes under such a regime would show considerable volatility. Advocates of floating rates countered with the argument that stabilizing speculation would act to "smooth" exchange rate movements (especially for real exchange rates) so that the greater freedom of exchange rates to move would not necessarily lead to an abrupt increase in actual variability. With over ten years of experience under floating rates, it is now clear that exchange rate variability has been more substantial than advocates of the system expected.

Charts 1 and 2 provide convenient pictures of the short-run variability of nominal bilateral exchange rates and of longer-term swings in real effective exchange rates, respectively, for the major currencies over the floating rate period. It is apparent from these charts that exchange rate fluctuations have often been "large" during the floating rate period, with even day-to-day changes in nominal bilateral rates sometimes averaging 2-3 percent over a few quarters and with real effective rates occasionally moving by 30 percent or even more over a period of two to three years. More broadly, recent studies of exchange rate variability point to the following conclusions about the characteristics of such fluctuations.

First, by almost any measure, exchange rate variability has been much greater during the floating rate period (1973-82) than during the last decade of the adjustable par value system (1963-72). The recent staff study, "Exchange Rate Volatility and World Trade" (SM/83/203), for example, reports that short-term (monthly or quarterly) variability of nominal exchange rates for the seven major currencies was about five times greater under floating than under fixed rates. 1/ Switching to real exchange rates or to longer time horizons (e.g., deviations from, say, four- to five-year trends) does not alter the qualitative nature of this conclusion.

Second, within the floating rate period itself, there has not been a sustained tendency for exchange rate variability to decline over time. 2/ On most measures, exchange rate variability peaked in 1973, was on a declining trend for the next four to five years, and then rose sharply again during the late 1970s and early 1980s. Thus, the oft-heard prediction that the large variability experienced at the onset of floating exchange rates would fade away as traders and policymakers "learned" how to operate under the new regime has proved false.

Third, the variability of nominal exchange rates under floating has been sustantially greater than implied by inflation differentials across countries, thereby yielding sizable changes in real exchange rates as well. The failure of purchasing power parity to hold under floating has been particularly marked over the short to medium term (i.e., month-to-month

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1/ Not surprisingly, this increase in variability has not been uniform across currencies. Specifically, SM/83/203 reports that variability of the real effective exchange rate has been greater for the U.S. dollar, the pound sterling, and the Japanese yen than for the French franc, the deutsche mark, the Italian lira, and the Canadian dollar. Lanyi and Suss [1982] similarly demonstrate that exchange rate variability during the 1973-79 period has differed by type of exchange arrangements.

2/ See Shafer and Loopesko [1983], Kenen and Rodrik [1983], and SM/83/203.

or quarter-to-quarter, to even two- to three-year periods). 1/ Thus, only over long periods and only when relative price changes among countries have been quite large, has purchasing power parity served as a useful rule of thumb for explaining actual exchange rate movements. 2/ Without addressing alternative theories of exchange rate determination, it is enough to note here that such exchange rate behavior is consistent with the view that: (i) national price levels are "sticky" and "backward looking" in the short to medium term (often reflecting the existence of previous contracts) while exchange rates are, like other asset prices, "flexible" and "forward looking" (often reflecting expectations about future events); (ii) relative goods prices are only one of many factors operating on exchange rates and they are not the predominant influence over short time horizons; and (iii) the vast majority of exchange transactions take place on capital rather than current account.

Fourth, and going in the other direction, the variability of nominal exchange rates under floating has still been considerably smaller than the variability of some other asset prices. For example, Bergstrand [1983] documents that average absolute monthly changes in nominal exchange rates for the seven major currencies over the 1973-83 period were typically much smaller than changes in national stock market prices, or changes in either short-term interest rates or in long-term bond yields, or changes in either commodity prices or prices of commodity baskets. 3/ Such results are consistent with the view that the floating rate period was one of sufficient turbulence to make all asset prices, not just exchange rates, fluctuate substantially.

Fifth, and of direct interest for making the transition from exchange rate variability to exchange rate uncertainty, most exchange rate changes under floating appear to have been unexpected. The evidence for this conclusion is that market indicators of the expected exchange rate, such as the forward rate, have typically turned out to be poor predictors of the actual exchange rate at the time of maturity of the forward contract. 4/ Further, the forecast errors of such market indicators of expected exchange rate changes have proved to be greatest during the periods when exchange rates have shown the greatest (short-run) variability. 5/ Furthermore,

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1/ See Frenkel [1978], Katseli [1979], and Isard [1977].

2/ Actually, even over the long run, there have been some notable departures from purchasing power parity; see Frenkel [1978] and Horne [1983].

3/ Nordhaus [1978] and Frenkel and Mussa [1980] obtain similar conclusions.

4/ See Mussa [1979]. Another piece of supporting evidence is that structural models of exchange rate determination have proved no better than naive models in forecasting exchange rates out of sample, e.g., see Rogoff and Meese [1982] and Dooley and Isard [1983].

5/ IMF [1982a], Chapter 2, Chart 15.

CHART 1

SHORT-RUN VARIABILITY IN NOMINAL BILATERAL EXCHANGE RATES FOR FIVE MAJOR CURRENCIES, APRIL 2, 1973 - NOVEMBER 30, 1983

(Daily percentage changes)

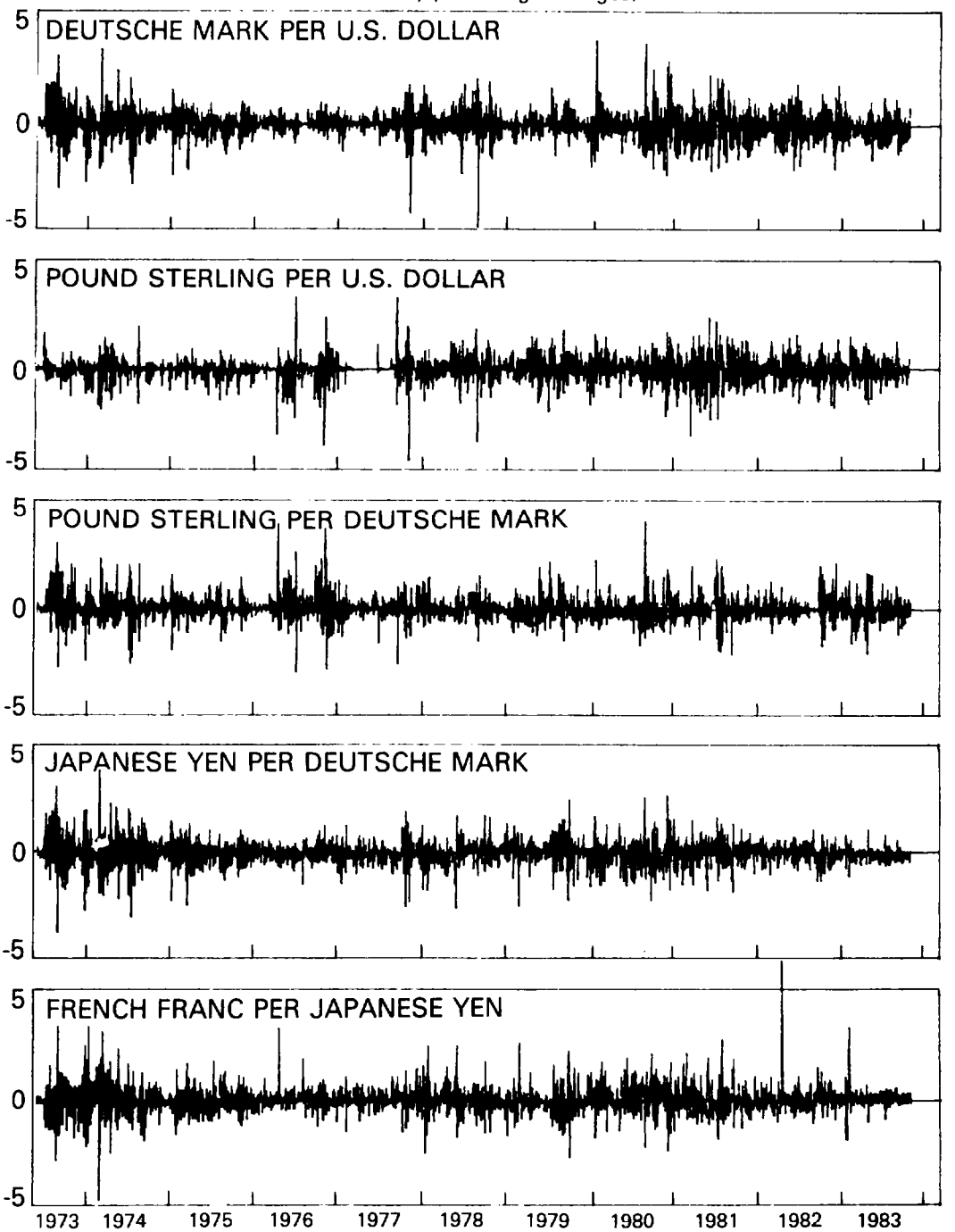


CHART 1 (concluded)

SHORT-RUN VARIABILITY IN NOMINAL BILATERAL EXCHANGE RATES FOR FIVE MAJOR CURRENCIES, APRIL 2, 1973 - NOVEMBER 30, 1983

(Daily percentage changes)

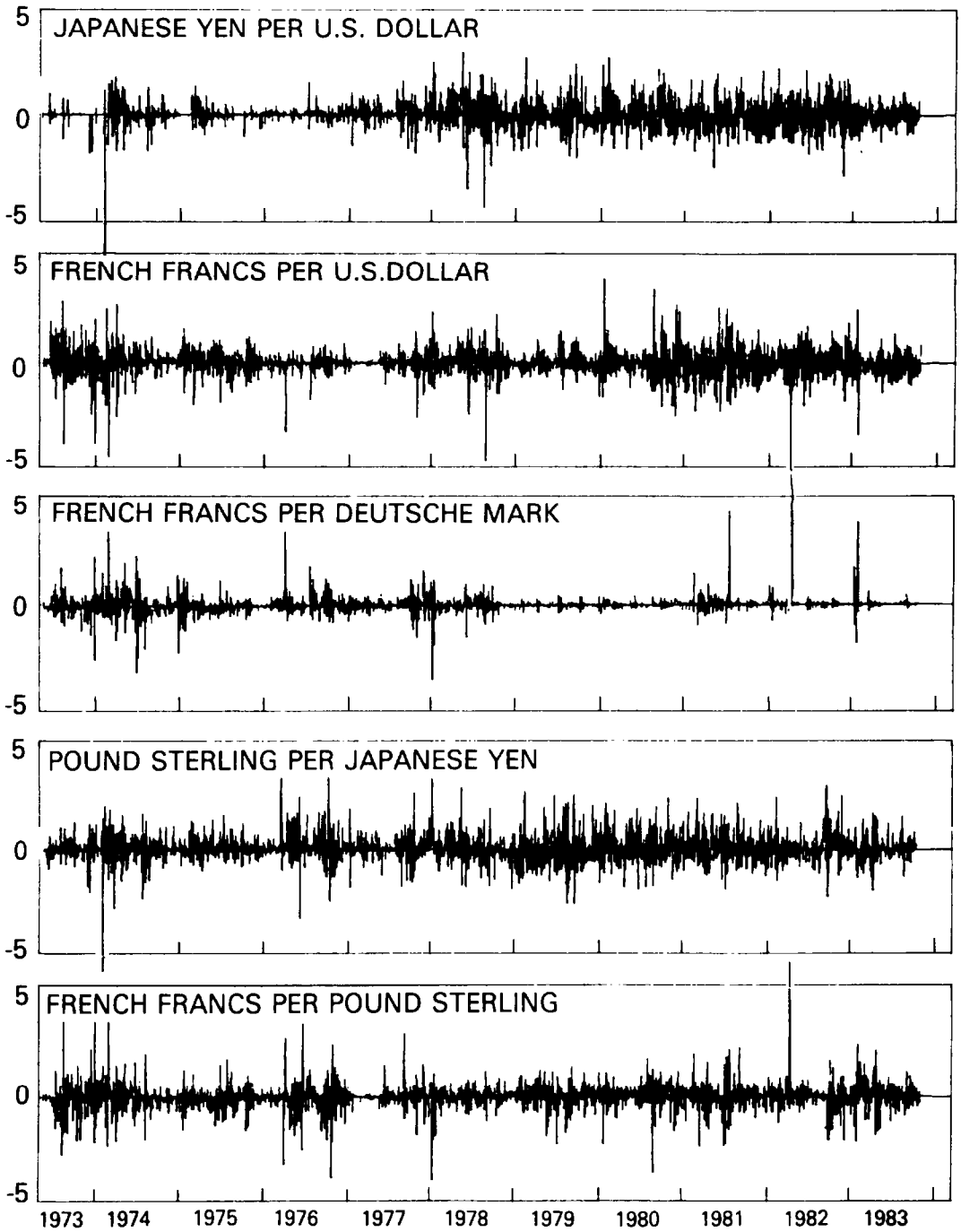
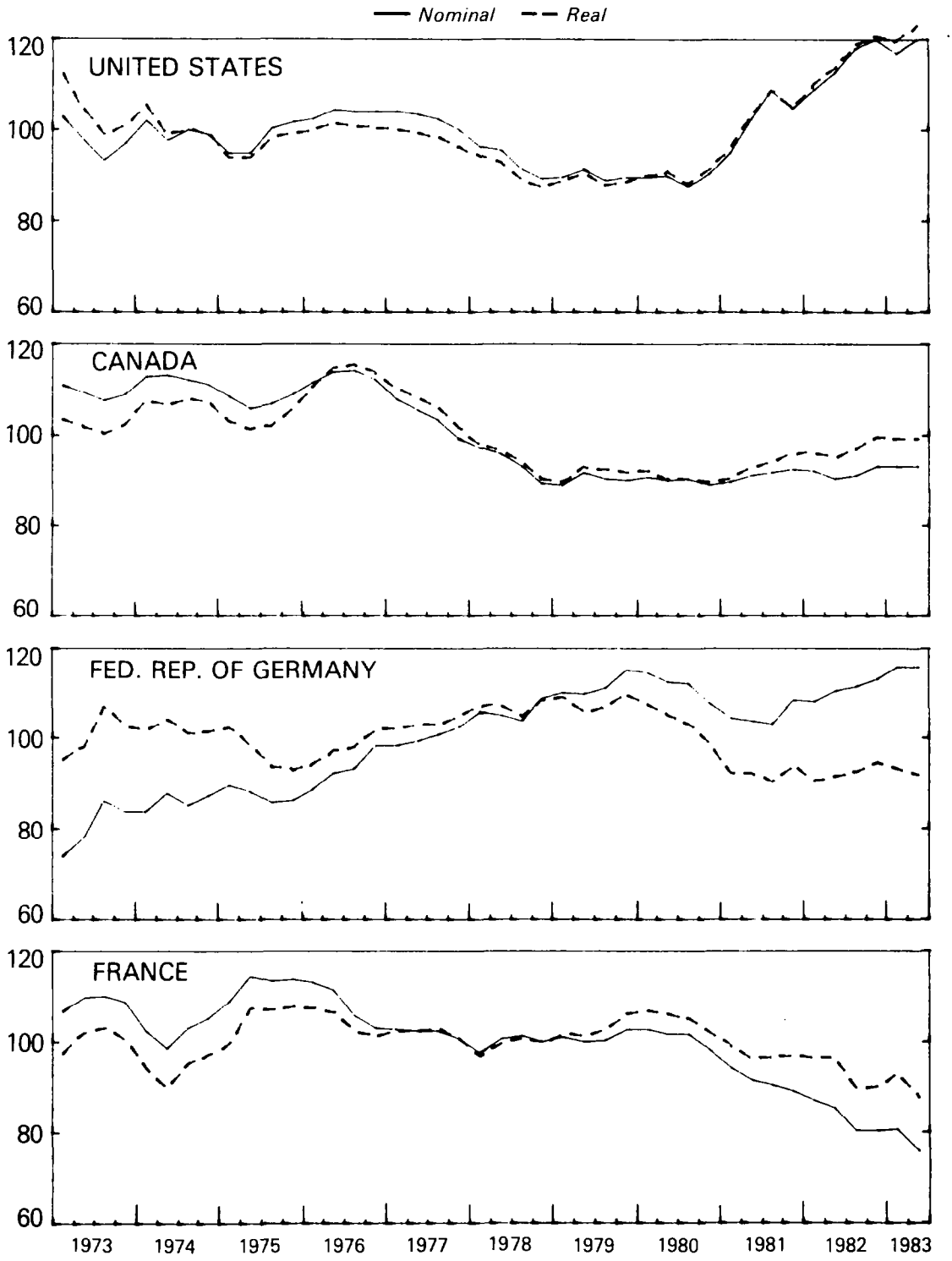


CHART 2

MAJOR INDUSTRIAL COUNTRIES

NOMINAL AND REAL EFFECTIVE EXCHANGE RATES, Q1 1973 - Q2 1983[1]

(Index, average for period shown = 100)



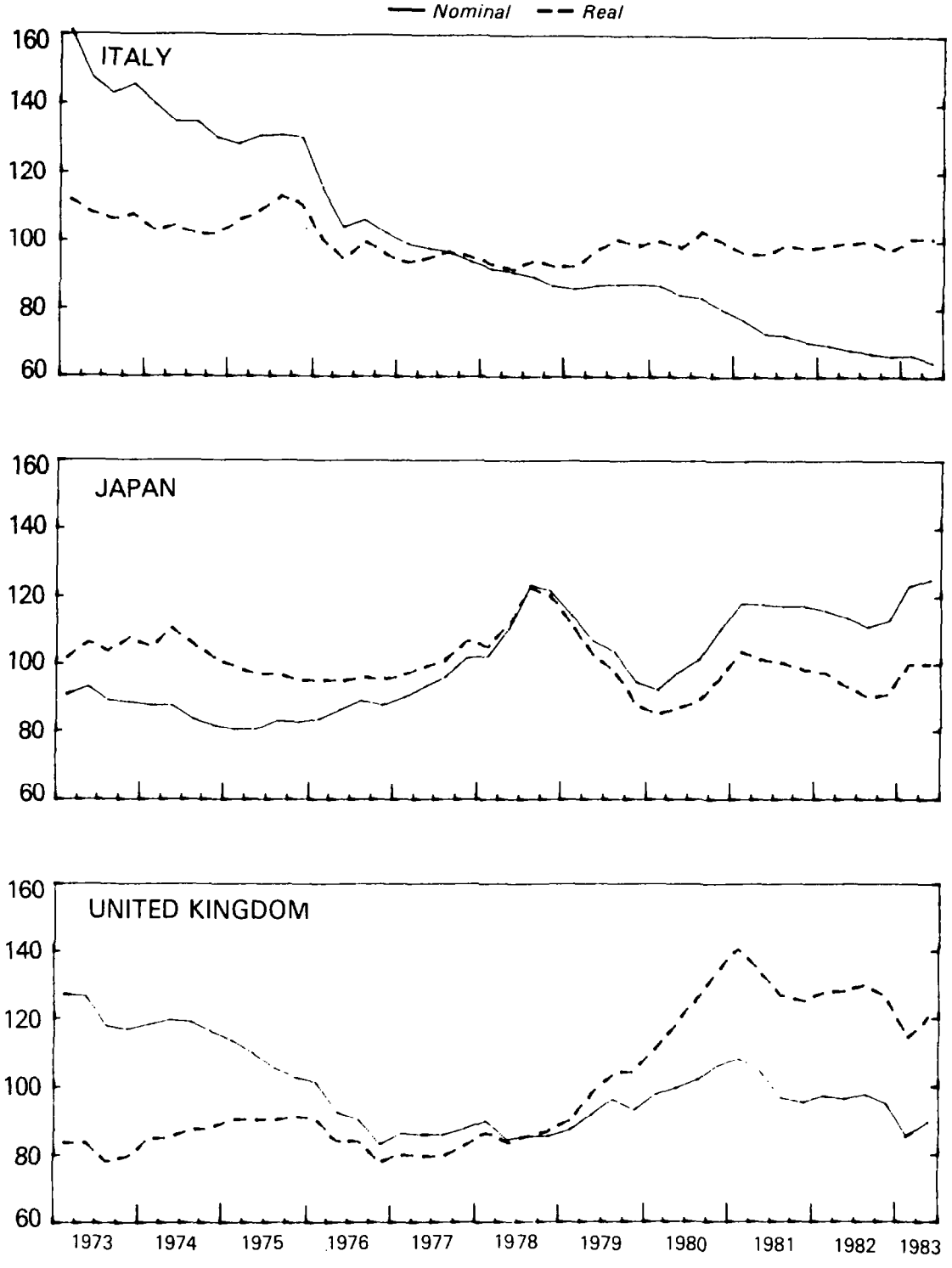
[1]The indices of effective exchange rates are based on the Fund's multilateral exchange rate model Real effective exchange rates are calculated by adjusting indices of normalized unit labor cost in manufacturing for changes in nominal effective exchange rates.

CHART 2 (concluded)

MAJOR INDUSTRIAL COUNTRIES

NOMINAL AND REAL EFFECTIVE EXCHANGE RATES, Q1 1973 - Q2 1983[1]

(Index, average for period shown = 100)



[1]The indices of effective exchange rates are based on the Fund's multilateral exchange rate model. Real effective exchange rates are calculated by adjusting indices of normalized unit labor cost in manufacturing for changes in nominal effective exchange rates.

there is evidence that the costs of buying insurance in the forward market against such exchange rate uncertainty increase with the degree of exchange rate uncertainty, with bid-ask spreads in the forward market widening appreciably when exchange rate variability is unusually large. 1/ Once more, all of this is consistent with an "asset market view" of exchange rate determination whereby "...exchange rates will not adjust slowly and smoothly, but like other asset prices, will display random fluctuation in response to new information that is continuously being received by the market." 2/

d. Official intervention in exchange markets has not gone away and the demand for reserves does not appear to have been appreciably diminished under floating rates. Most countries continue to regard exchange rates at least in part as a policy target. This is another area where actual behavior under floating rates has belied anticipation. Prior to floating many observers expected that countries would choose to intervene much less in exchange markets so as to secure the "extra degree of freedom" in policy implementation afforded by not having to defend an exchange rate target, and that the increased flexibility of exchange rates itself would permit a significant economy in the demand for reserves because the equilibrating and insulating properties of the exchange rate would reduce the size of payments imbalances.

Although official intervention in exchange markets can be tricky to measure, 3/ there is by now little doubt that official intervention has been very substantial under floating--perhaps even greater than under fixed rates. 4/ For example, for the Group of Ten countries plus Switzerland, Black [1979] reported that reserve changes averaged about $3.8 billion per month in 1973, $3.3 billion in 1974, and $2.6 billion in 1975. After that, changes got progressively larger, rising to $4.4 billion per month in 1976, $5.1 billion in 1977, and $6.3 billion in 1978. Similarly, Lamfalussy's [1979] figures on gross foreign exchange market intervention by Western central banks show a steady growth in such intervention from $36 billion in 1973/74 to $118 billion in 1978/79. Further, partial data on intervention for 1980, 1981, and 1982--published by the Bundesbank [1982] and the Board of Governors of the Federal Reserve System [1983]--suggest that intervention was substantial for the largest industrial countries (except for the United States) during this period, too. 5/

1/ Ibid., Chart 16.

2/ Frenkel and Mussa [1980], p. 377.

3/ See Taylor [1982], Dooley [1982], and the Working Group on Exchange Market Intervention [1983].

4/ See Williamson [1976] and Suss [1976].

5/ For example, interventions in the deutsche mark dollar market alone were apparently on the order of DM 18 billion in 1980, of DM 21 billion in 1981, and of DM 7 billion in 1982; see the 1982 Report of the Deutsche Bundes- bank, p. 72.

It is not necessary here to catalog all the reasons why industrial countries have found it useful to intervene so heavily in exchange markets during the past ten years. It is interesting to observe, however, that the recent Report of the Working Group on Exchange Market Intervention [1983] indicates that such intervention has not been aimed solely at "countering disorder" or at "smoothing day-to-day movements above a certain absolute size," or even at "leaning against the wind." Instead, it has also included, inter alia, the objectives of "resisting rate movements which bear no relation to the fundamentals," of "resisting depreciation out of concern for its inflationary consequences or resisting appreciation in order to maintain competitiveness," and for EMS participants "...to keep rates within parity bands." All in all, the 1970 prediction of the Executive Directors that "...national authorities could not be expected in modern conditions to adopt a policy of neutrality with respect to movements in an economic variable of such importance to the domestic economy as the rate of exchange..." 1/ has proved right on the mark.

Turning to the overall demand for reserves, several empirical studies (e.g., Heller and Khan [1978] and Frenkel [1983]) point to two important conclusions. First, a statistically significant shift in the demand for reserves by industrial countries took place about 1972-73, that is, about the time of the move to managed floating. A "shift" occurs in the sense that some of the factors assumed to determine the demand for reserves (e.g., the variability of payments imbalances, the propensity to import, etc.) have different effects (estimated coefficients) on reserve demand in the floating period than in the period of adjustable par values. Second, but going the other way, the net effect of these parameter shifts across exchange rate regimes was apparently not very large because the demand-for-reserves equation fitted to data for the fixed rate period (1962-72) yields good forecasts of actual reserve demand by industrial countries for the 1973-79 (floating rate) period. 2/ Thus, whatever the changes in the reserve supply mechanism as between the pre-floating and floating rate periods, 3/ the demand for reserves does not seem to have been dramatically affected by the fact that exchange rates are now more flexible than they used to be.

1/ IMF [1970], p. 42.

2/ See Frenkel [1983].

3/ See von Furstenberg [1983] for a discussion of how reserve supply arrangements have changed since the inception of widespread floating.

To sum up, the present exchange rate system is one where there is great diversity in exchange arrangements, where a stable system of exchange rates (but not necessarily unchanging exchange rates) is expected to be pursued by the application of sound macroeconomic policies at the national level, where both nominal and real exchange rates in practice have shown a lot of short-term and long-term variability, and where official intervention in exchange markets has been frequent and substantial. With this rough outline of the system in mind, we can next enquire about the environment in which the present system has operated over the past ten years.

2. The environment

Table 1 provides a summary comparison of inflation, unemployment, real income growth, unused industrial capacity, and labor productivity for the seven largest industrial countries during the floating rate period (1973-82) and the last decade of adjustable par values (1963-72). This comparison makes it abundantly plain that economic performance in the major industrial countries has been far worse during the past ten years of floating than during the preceding decade of the adjustable peg system. On average, inflation rates have been more than twice as high, unemployment rates almost twice as high, real income growth less than half as fast, output gaps in manufacturing more than twice as large, and growth in labor productivity only half as fast. If, therefore, macroeconomic policy were to be judged only by what happened on the "bottom line," the conclusion would be inescapable that policy has been much less successful under floating rates.

A distinction must be made however, between the period of floating rates and the effects of floating rates themselves. Many features of the global economic environment that are important for macroeconomic performance, but are not proximately related to the exchange rate regime, were also changing during the period of floating rates. Unless these non-exchange rate system factors are properly taken into account, outcomes may be attributed to the exchange rate system that are not related to it.

To appreciate the extent of this identification problem, it is sufficient to just note some of the other environmental factors that could have contributed to the dismal macroeconomic statistics of the past decade. These environmental factors encompass not only external disturbances but also longer-term structural and institutional changes.

Table 1. Summary Indicators of Macroeconomic Performance: Seven Larger Industrial Countries, 1963-72 Versus 1973-82

	Consumer prices (Annual percentage change)		Real GNP (Annual percentage change)		Unemployment Rate (As percent of labor force)		Output Gap in Manufacturing (As percent of actual output)		Labor Productivity in Manufacturing (Annual percentage change)	
	1963-72	1973-82	1963-72	1973-82	1963-72	1973-82	1963-72	1973-82	1963-72	1973-82
United States	3.3	8.8	4.0	2.3	4.7	7.0	-1.9	-5.5	3.2	1.5
Canada	3.3	9.6	5.5	2.5	4.7	7.5	-2.7	-6.5	5.0	1.9
Japan	5.6	8.8	10.5	4.3	1.2	1.9	-3.6	-10.1	11.7	6.1
France	4.4	11.0	5.5	2.8	1.9	5.2	-1.4	-5.5	6.9	4.8
Germany	3.2	5.1	4.5	2.0	0.9	3.8	-2.1	-4.3	5.8	4.2
Italy	4.3	16.3	4.6	2.7	5.4	7.2	-4.6	-6.1	6.4	3.8
United Kingdom	4.9	14.2	2.8	1.4	2.4	5.8	-3.6	-9.5	4.6	2.3
Seven larger industrial countries (unweighted average)	4.1	10.5	5.3	2.6	3.0	5.5	-2.8	-6.8	6.2	3.5

Sources: Data on consumer prices, real GNP, and unemployment rates are from IMF, World Economic Outlook, various issues. Figures on output gap in manufacturing are from Artus and Turner [1978]. Data on productivity in manufacturing are from Current Studies data file.

Taking the disturbances first, the most important were clearly the two rounds of large oil price increases in 1973-74 and 1979-80 and the huge expansion (57 percent) in international reserves from 1970-72 associated with the collapse of the Bretton Woods system. 1/ These disturbances, in concert with the monetary and fiscal policies adopted in their wake, 2/ produced important stagflationary effects in most industrial countries despite the recycling of much of the OPEC current account surplus and the avoidance of competitive devaluation among the oil consuming countries. 3/ From 1975-82, policy authorities in industrial countries had to face high inflation and high unemployment simultaneously.

As regards structural and institutional changes over the past decade, the list is much longer and more varied. Some of the more important include: (i) a slowdown of the shift of output and employment away from low-productivity sectors (agriculture, services) toward high-productivity ones (principally, industry); 4/ (ii) the reduced opportunities (relative to the 1950s and 1960s) for technological catch-up by Europe and Japan (from the United States); 5/ (iii) the spread of indexation of wages and salaries in response to the high and variable rates of inflation, 6/

1/ See Black [1978] and Heller [1976]. Some observers might also want to include the commodity boom of 1972-74 as another major disturbance. It is excluded here because it may not have been totally exogenous to the exchange rate regime, with some writers (e.g., Cooper and Lawrence [1975]) citing the exchange rate instability of 1973-74 as a contributing factor to the speculation in commodities.

2/ It needs to be recognized, of course, that the policy response to the two oil price disturbances differed in some important respects. For example, both monetary and fiscal policy were much less accommodating following the second oil price disturbance than following the first one; see IMF [1982b] and Larsen et al. [1983].

3/ A recent OECD study by Larsen et al. [1983] suggests that each of the two oil price disturbances raised the OECD general price level by about 2 percentage points relative to what would have been otherwise. Nordhaus' [1980] estimates of the impact of the oil price disturbances on macroeconomic performance of OECD countries are more modest but still suggest adverse effects on inflation, real income growth, and unemployment. Heller's [1976] analysis implies that the 1970-72 expansion in international reserves was an important factor in the high inflation rates of the 1973-75 period; Loneg and Willett [1982] offer an opposing view.

4/ Denison [1983], Giersch and Wolter [1983].

5/ Lindbeck [1983a], Giersch and Wolter [1983].

6/ Braun [1976].

with its implications for the magnification of supply shocks 1/ and the reduced scope for real exchange rate changes; 2/ (iv) changes in both the growth and demographic composition of industrial country labor forces, with their effects on both unemployment rates and labor productivity; 3/ (v) the fall in the profitability of firms and the contemporaneous slowdown of investment growth; 4/ (vi) the increased demand by societies for greater equity and equality at the expense of faster output growth; 5/ (vii) the adoption of preannounced money supply targets by several industrial countries in response to both high inflation and large exchange rate variability with their consequent effect on, inter alia, the variability of interest rates; 6/ (viii) the seeming increase in international competition spurred, inter alia, by the emergence of the newly industrialized countries as competitors on world markets for manufactured goods, the continuation of trade liberalization, and international technology transfers; 7/ (ix) the rapid growth of the Eurodollar market, the switch from asset to liability settlement of external imbalances for non-reserve-center countries, the liberalization of capital controls (in the United States, the United Kingdom, and Japan), and the technological advances in shifting funds across national borders; 8/ and (x) a deterioration in the functioning of factor markets and in the efficiency of economic incentives as a result, inter alia, of increases in marginal tax rates, of high inflation with a non-indexed tax system, of considerable asymmetries and non-neutralities in the tax treatment of different types of assets, and of employment legislation that restricts labor mobility. 9/

Changes in these environmental factors are enough to invalidate any simple comparison between the floating rate period and the preceding decade in terms of economic performance. It is even possible to go further and argue that the very successes of the adjustable peg period may have carried the seeds of their own destruction. Lindbeck [1983a], [1983b], for example, has emphasized the effect of government full employment guarantees in the 1950s and 1960s on the wage and price aggressiveness of unions and firms during the 1970s. He states:

1/ Fisher [1977].
2/ Modigliani and Padoa-Schioppa [1978].
3/ Haveman [1978], Medoff [1983].
4/ Giersch and Wolter [1983].
5/ Okun [1975].
6/ Bergstrand [1983] and SM/81/210.
7/ Lindbeck [1983a], [1983b].
8/ Bryant [1980] and Dooley [1981].
9/ Lindbeck [1983a].

"...if unions and firms start to raise wages and prices more aggressively than before because of a belief that the government, in order to guarantee full employment, will accommodate any cost increases by demand expansion, possibly combined with a depreciating currency, the ensuing accentuation of the inflation trend may later on force the government itself to destroy this confidence in a high level of capacity utilization and brisk expansion of demand with restrictive demand management policies and/or price controls." 1/

Perhaps the clearest manifestation of the type of aggressive behavior outlined by Lindbeck was the sharp increase in the real wage rate that occurred in many industrial countries (particularly in Europe) during 1970-75, the lagged effects of which survived throughout that decade. 2/ By Lindbeck's [1983a] estimate, the OECD real wage rate was still, in 1979, 8 percent higher than warranted by full employment labor productivity. Sachs's [1983] corresponding calculation for six major industrial countries in 1978 is 7 percent. This trend of real wages was particularly serious because it was superimposed on historically very low--in fact often negative--real interest rates; for example, the average (ex post) short-term real interest rate in the seven major industrial countries was negative every year from 1971 to 1978, save one; the corresponding long-term real interest rate averaged less than 1 percent over this period. By way of comparison, the corresponding average short-term and long-term real rates for 1962-70 were 1 1/2 percent and 2 percent, respectively. 3/

According to Giersch and Wolter [1983], this distortion between the two key factor prices--with real wages too high and real interest rates too low--was associated with the following adverse side effects: (i) a decline in the propensity to save; (ii) a tendency for governments to run deficits which could be financed by borrowing at low real interest rates; (iii) a tendency to invest in real assets rather than financial ones (but not in shares of companies which require a lot of expensive complementary labor); (iv) a bias in favor of labor-saving techniques and inventions; and (v) a tendency therefore to neglect capital formation for use in productive processes and hence a slower rate of growth of the productive capital stock.

1/ Lindbeck [1983a], p. 17.

2/ In some industrial countries (e.g., France, Germany, the United Kingdom, and the United States), this so-called "real wage gap" has risen again since 1979; see Sachs [1983].

3/ See the Managing Director's speech on "The Impact of Interest Rates on International Finance and Trade," reprinted in IMF Survey, November 15, 1982.

To summarize, because there was such an intermingling of disturbances and structural and institutional changes over the past decade, there are serious limits to the inferences that can be drawn about the independent effects of floating rates on macroeconomic performance. As such, it is perhaps best to resist the seductive appeal of simple comparisons of economic performance in the floating rate period and period(s) of other exchange rate regime(s) in favor of more specific arguments about how alternative exchange rate sytems affect various economic objectives. The answers will be more subjective but they are less likely to confuse the exchange rate regime with "other" influences.

III. Evaluation of the Present Exchange Rate System

Thus far, the broad characteristics of the present system have been described and the principal changes in the global economic environment have been identified. It is now time to move to an evaluation of the present exchange rate system. That evaluation is conducted in two distinct steps. The first step is to introduce a set of criteria that can be used to evaluate not only the present exchange rate system but other exchange rate systems as well. The second step is to apply those criteria to the operation of the present system over the past ten years. The basic reason for separating the discussion of the criteria themselves from their application to the experience of managed floating is that even if readers are to disagree about the relative strengths and weaknesses of the present system, the acceptance of a common "framework" for evaluation at least ensures that disagreements are based on different readings of the evidence rather than on different "yardsticks."

1. Criteria for evaluating exchange rate systems

The following four criteria serve in this paper as a basis for evaluating the present exchange rate system:

Criterion #1 - Does the system help or hinder macroeconomic policy in pursuit of fundamental domestic economic objectives (price stability, sustainable growth, high employment)?

Criterion #2 - How effective is the system in promoting external payments adjustment?

Criterion #3 - How does the system affect the volume and efficiency of world trade and capital flows (and thereby resource allocation in the international economy at large)?

Criterion #4 - How robust or adaptable is the system to significant changes in the global economic environment?

Because these criteria figure so prominently in what follows, it may be useful to discuss not only their rationale but also what kinds of issues are encompassed within each of them.

Criterion #1 reflects the view that the exchange rate system is basically a facilitating mechanism for more fundamental domestic economic objectives, like price stability, high employment, and sustainable economic growth. That is why, in sharp contrast to some earlier analyses of exchange rate systems, 1/ the degree of exchange rate variability, for example, is not put forward here as a normative criterion. In other words, the assumption is that exchange rate variability is only important to the extent that it impinges upon, or facilitates, the achievement of more ultimate targets of economic policy.

The channels by which the exchange rate system might help or hinder macroeconomic policy are many. In this study, the focus is on the following issues--each of which has figured prominently in the on-going debate on the merits of the present system: (i) does the system provide the "discipline" necessary for the imposition of responsible macroeconomic policies, particularly for inflation prone governments; (ii) do exchange rate fluctuations and downward price inflexibility combine to produce an upward "ratchet" effect on national and global inflation rates; (iii) does the system exacerbate intercountry inflation differentials by drawing weaker countries into a "vicious circle" of inflation and currency depreciation and stronger ones into a "virtuous circle" of price stability and currency appreciation; (iv) does the system affect unemployment rates either by adverse effects on the efficiency of the price mechanism that increase frictional unemployment, or by generating longer-term exchange rate disequilibria that foster structural unemployment in traded goods industries; (v) does the nature of the system influence the effectiveness of monetary policy under conditions of high capital mobility; and (vi) how well does the system function as a shock absorber against different types of disturbances? In seeking to answer these questions, both short-term volatility and longer-term fluctuations in exchange rates will be considered.

Moving to criterion #2, considerations of "external balance" are introduced to supplement the "internal balance" objectives subsumed under criterion #1. By asserting that a desirable exchange rate system is one that promotes external payments adjustment, it is meant that the system should set in train an (internationally acceptable) adjustment mechanism, either automatic or discretionary, that eliminates balance of payments disequilibria over a reasonable time period. To make such a criterion operational, it is, of course, necessary to have some definition or concept of balance of payments equilibrium. This continues

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1/ For example, Williamson [1980].

to be a thorny problem. For the purposes of this paper, it is sufficient to think of it as a condition under which the current account position can be financed by "normal" capital flows without recourse to undue restrictions on trade, special incentives to inflows or outflows of capital, or wholesale unemployment. 1/ This is essentially the definition suggested by Nurkse [1945] close to 40 years ago, it is closely related to the concepts of "fundamental disequilibrium" and of "underlying payments equilibrium" employed by Fund staff, 2/ and it forms the basis for most definitions of the "equilibrium exchange rate" (which is usually defined as the exchange rate that produces this type of payments outcome). 3/ A finding that a given exchange rate system has produced "effective external adjustment" would imply that observed exchange rates were, over the medium term, close to "equilibrium" real exchange rates.

It should be recognized that criterion #2 is meant to encompass not only the question of whether the exchange rate system promotes external payments adjustment but also questions of how it does so. Specifically, criterion #2 leads to consideration of the following external adjustment

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1/ Special incentives to capital flows need to be interpreted broadly. It would include not only, say, tax advantages or disadvantages but also an interest rate that was reflecting an unsustainable mix of monetary and fiscal policies. Also, unemployment should be viewed as a proxy for a whole range of "cyclical" or "temporary" factors. Finally, where the country's level of international reserves is unduly low or high, one might want to allow for some change in reserves.

2/ For example, the 1970 Report by Executive Directors on The Role of Exchange Rates in the Adjustment of International Payments noted: "Thus, the criterion of fundamental disequilibrium is wider than the occurrence of a disequilibrium in the actual balance of payments.... For example, the concept of fundamental disequilibrium could include a balance of payments position that would have shown a deficit but for restrictions on trade and payments; or a situation of equilibrium (or surplus) in the balance of payments that would turn into deficit but for an unacceptably low rate of economic activity in the country; or a situation of equilibrium (or deficit) in the balance of payments that would turn into a surplus but for exports of capital at a rate that the country concerned did not wish to continue, or but for the country's acquiesence in an unacceptably high rate of inflation," p. 48. SM/83/263 implies a very similar definition of equilibrium payments balance.

3/ See, for example, Artus [1978] and SM/83/263. Similarly Williamson [1983] defines the "fundamental equilibrium exchange rate" as that "...which is expected to generate a current account surplus or deficit equal to the underlying capital flow over the cycle, given that the country is pursuing 'internal balance' as best it can and not restricting trade for balance of payments reasons," p. 14.

issues: (i) what are the respective weights of relative price changes and income movements as adjustment mechanisms in that system--and how do these two mechanisms differ in promoting adjustment; (ii) what are the implications in that system of different speeds of adjustment in goods versus asset markets (or in the current account versus the capital account); (iii) does the system promote symmetry of adjustment as between deficit and surplus countries and as between reserve centers and non-reserve centers; and (iv) is external adjustment in that system automatically induced or is it discretionary? Again, it is enough to note that each of these adjustment issues has been part of the debate on the functioning of the present system.

Criterion #3 derives from the proposition, given explicit endorsement in the purposes of the Fund, 1/ that global welfare is generally increased by an expansion of world trade and investment. This is another area where one wants the exchange rate system to act as a facilitating mechanism for some more basic economic objective. Criterion #3 speaks of the "efficiency" of trade and investment because in the real world where international traders sometimes are reacting to temporary relative price signals that bear little relation to longer-term changes in comparative advantage, not all increases in the volume of trade will be beneficial; that is, it is possible to have "false trading," to borrow a phrase from McKinnon [1974].

In attempting to appraise the effects of the present exchange rate system on the volume and efficiency of world trade and investment, it will be necessary to investigate two additional questions, namely (i) how does exchange rate uncertainty affect international trade and investment; and (ii) do sizable exchange rate disequilibria generate strong and effective pressures for protectionism.

Criterion #4 is different from the other criteria because it is not associated with any of the familiar economic objectives--whether foreign or domestic. The rationale for including it is that, as with political constitutions, there are non-trivial costs associated with changing international monetary constitutions, especially under crisis conditions. Other things equal, it is therefore better to have an exchange rate system that is relatively "robust" or "adaptable" to changes in the global economic environment. For example, an exchange rate system that will work well only under conditions of low international mobility of capital is undesirable unless one can be confident that capital will have low international mobility in the future. Similarly, an exchange

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1/ Article I of the Articles of Agreement cites as one of the purposes of the IMF "to facilitate the expansion and balanced growth of international trade."

rate system that relies on all changes in comparative advantage being slow and smooth will be not be as desirable, ceteris paribus, as one that can also accommodate more abrupt changes. The same logic applies to other environmental factors ranging from the degree of real wage flexibility, to the preference for a particular reserve currency, to even the assumed behavior of one particular type of economic agent (be it the reserve center country or market speculators). This is not to say that the durability of a system is as important as how well it functions while it lasts, but rather to suggest that it surely counts for something.

2. Evaluating managed floating

With these four evaluative criteria in mind, the next step is to use them in a systematic assessment of the last decade's experience with managed floating. 1/ In order to place that experience in perspective, comparisons will frequently be made with experience during the last decade of adjustable par values. Also, references will occasionally be made to experience under even earlier exchange rate systems (e.g., the gold standard). The purpose of such comparisons and references is not to draw conclusions about whether managed floating is the best, or worst, of all past exchange rate systems, but rather to provide protection against holding managed floating to an unduly high or low absolute standard of performance.

a. Floating rates and macroeconomic policy 2/

If floating rates do affect inflation, or unemployment, or the efficiency of domestic monetary policy, or the insulation of the domestic economy from external shocks, how do they do so? In this subsection, the arguments of both the advocates and critics of floating rates are examined.

(1) Floating rates and inflation

Critics of floating rates have long contended that floating rates are inflationary on three principal counts: first, because they weaken the resolve or discipline to fight inflation; second, because they interact with downward price inflexibility to ratchet-up both country and global price levels; and third, because they trap weaker countries in a vicious circle of inflation and currency depreciation, thereby exacerbating intercountry inflation differentials.

1/ Other appraisals of experience with managed floating can be found in Willett [1977], Black [1977], Artus and Young [1979], Goldstein [1980], Dornbusch [1980], Williamson [1983], Solomon [1983], and Shafer and Loopesko [1983].

2/ Some of the arguments in this section draw heavily on Goldstein [1980].

The discipline hypothesis is based on the assumption that the balance of payments constraint under fixed exchange rates acts as a check on the pursuit of inflationary policies. Because a devaluation would be regarded by the public as an admission of failure of government policies, a high-inflation country will sooner or later have to alter its policies in such a way to bring its inflation rate into line with its neighbors. The perception by the public that a given parity must be defended prompts the adoption of otherwise unpopular policies of demand restraint. Surplus countries under fixed rates are said to be subject to a weaker discipline either because there is no similar constraint on the accumulation of reserves, or because the revaluation that is necessary to avoid such accumulation carries no political liability. Under floating rates, this anti-inflationary discipline is absent because, so it is argued, the only consequence of a relatively high inflation rate is a depreciating currency.

The discipline hypothesis prompts the following observations.

First, whatever the differences in anti-inflationary discipline between truly fixed rates and purely floating rates, these distinctions become blurred in a comparison of adjustable par values and managed floating. 1/ Yet the latter two regimes are the relevant ones for the observable macroeconomic policy behavior of the postwar period.

Second, the political cost of devaluation under fixed rates should not be exaggerated. From 1955 to 1971 the longest period without an exchange rate change by any of the 16 OECD countries was five years (1962-66). Likewise, the number of exchange rate adjustments by high-inflation participants since the inception of EMS in 1979, as well as the number of departures by high-inflation countries from the "snake" in an earlier period, suggest that devaluation is not viewed as a political catastrophe. 2/ All of this is also consistent with the emerging literature on public choice that relates voting behavior and government popularity to economic variables. It finds that only the traditional domestic macroeconomic variables (real income growth, inflation, unemployment) count, and that only recent performance matters (i.e., voters have short memories). 3/

1/ Managed floating can still, however, be differentiated from the adjustable peg system by the greater frequency of exchange rate changes, by the larger share of the external adjustment burden that is assigned to the exchange rate, and by the absence of a publicly declared target exchange rate that must be defended except in a situation of "fundamental disequilbirium."

2/ See Ungerer et al. [1983] for a listing of these exchange rate realignments.

3/ See Fair [1978] and Frey and Schneider [1978].

Third, in those cases where there have been conflicts between internal and external balance under floating, these conflicts have by no means always been resolved in favor of the internal target. Black [1977], for example, after studying such conflict situations over the 1973-76 period, reports:

> "In most cases, some influence of the external target on monetary or fiscal policy is evident, except for Germany in 1973, the United Kingdom in 1974, and Canada in 1974. Furthermore, the influence of external targets appears to have been rising, as the 1976 conflict cases (France, Italy, Canada, the United Kingdom) have all been resolved in favor of the external target over the internal one," (p. 626).

Such revealed preference for the external target suggests that the balance of perceived political costs is more complex than is sometimes alleged.

Fourth, the 1979-83 policy experience in industrial countries is evidence that anti-inflationary discipline can be restored without fixity of exchange rates. Indeed, the deceleration in growth rates of narrow and broad money that took place in most of the major industrial countries in 1979-82 coincided with relatively high variability of both nominal and real exchange rates. 1/ This episode of monetary restraint reinforces the point that while fixed exchange rates are one way of making a "non-accommodation" policy strategy more credible, they are not the only way--and maybe not even the most effective way. Alternative "disciplining" policy instruments include tax-based incomes policies, preannounced money supply targets, constitutional limits on budget imbalances, IMF stabilization programs and, more generally, the aversion of public opinion to the continuation of price inflation and its attendant distortions.

To summarize, the inflation performance of industrial countries over the past decade has been so poor that it is hard to reject a call for more discipline. The near quadrupling (from 1.2 to 4.2 percent) of the ratio of industrial country government fiscal deficits to GNP as between 1963-72 and 1973-82 is just one indicator of how things have changed. But it does not follow from this that fixed exchange rates are either a necessary or sufficient mechanism for establishing such discipline.

1/ Whereas the average annual increase in broad money for the seven major industrial countries was about 12 percent in both 1963-72 and 1973-82, the corresponding figure for 1979-82 was less than 10 percent. If real monetary aggregates were used, the contrast with the 1979-82 period would be more marked.

The restoration of anti-inflationary discipline in 1979-82 in the face of both high unemployment and strong pressure for monetary expansion shows that fixed rates are not always "necessary." Likewise, there are too many examples during the past two decades of exchange rate targets giving way to employment targets when push came to shove to believe that fixed rates are "sufficient." In fact, if one had to generalize from the postwar experience, it would be more accurate to say that the degree and intercountry dispersion of macroeconomic discipline determine the exchange rate regime rather than the other way around.

Turning to the ratchet hypothesis, the basic argument is that floating rates have an inflationary bias because in a world of downward price inflexibility, devaluations lead to price increases in the devaluing country but to no (or smaller) offsetting price decreases in the revaluing one. For example, were country A to devalue its exchange rate by 10 percent vis-a-vis country B and then one year later reverse the process by revaluing by 10 percent--so as to cause no net change in the exchange rate over the whole period--the ratchet hypothesis says that domestic prices would be higher in both countries and so, too, would the world price level.

The key to the inflation predictions of the ratchet hypothesis is the proposition that prices do not fall in the revaluing (appreciating) country (or at least do not fall by as much as they rise in the depreciating country). Two explanations have been put forward for this proposition. One is that export prices (expressed in domestic currency) in the devaluing country will rise by the full extent of the devaluation so that import prices (again in domestic currency terms) in the revaluing country will not fall after an exchange rate change. The second is that import prices will fall in the revaluing country but since such a decline will be viewed as temporary and since producers only respond to those cost or demand changes they deem to be permanent, these declines in import prices will not provoke any decline in domestic prices.

While the ratchet hypothesis has a certain intuitive appeal that derives from the apparent "stickiness" of money wages and prices in industrial countries, empirical tests of the hypothesis have almost unanimously been unkind to it.

To begin with, most estimates of the export price response to exchange rate changes find that export prices do not rise by the full extent of a devaluation except in the smallest, most open industrial economies. 1/ The same conclusion also applies to export price behavior following tariff changes. 2/

1/ See Goldstein and Khan [1982], Robinson et al. [1979].
2/ See, for example, Kreinin [1961].

Moreover, the implication of the ratchet hypothesis that declines in the domestic currency price of imports should occur very infrequently is not supported by the facts. For example, Pigott et al. [1975] found that such declines occurred in about 35 percent of the quarters from 1957-74, at least for six major industrial countries taken together. 1/ Further, the fall in the domestic currency price of imports following specific revaluations or appreciations (e.g., the 1978 appreciations of the yen and the deutsche mark, the 1961 and 1969 revaluations of the deutsche mark, etc.) also points in the same direction.

Negative changes in import prices also do not appear to have a different effect on domestic prices than positive changes. Goldstein [1977], in a series of a pooled cross-section time series regressions for five large industrial countries, found no evidence of an asymmetry in the domestic price effects of decreases versus increases in import prices--and these results held for both the GDP deflator and the price of manufactures. Similarly, DeRosa and Finger [1978] examined the relationship between final product prices and raw commodity input prices for 20 product groups during the 1950-75 period and found no evidence of a ratchet effect. Further, the recent staff study on "Exchange Rate Volatility and World Trade" (SM/83/203) was unable to find any significant independent effect of exchange rate variability on CPI inflation rates for the seven largest industrial countries over the 1958-81 period.

Finally, a recent OECD study by Encaoua et al. [1983] indicates that the trend toward greater downward price inflexibility that was observed in major industrial countries since the early 1960s was finally broken during the recession that began in 1979. It is thus dangerous to assume that all cost or demand decreases, whether exchange rate induced or otherwise, will leave prices unchanged while all cost and demand increases are quickly passed forward into price increases.

In sum, while there can be little disagreement that the downward inflexibility of finished goods prices and money wages during recessions has been a formidable obstacle to more successful macroeconomic policy in industrial countries over the past two decades, there is not much evidence that exchange rate fluctuations have compounded that problem to any important degree. Further, the roots of the downward price inflexibility itself probably lie in the accommodating macroeconomic policies followed by most governments over this period. As long as workers and producers believe that governments can sustain contractionary demand policies for only short periods, they will be reluctant to reduce

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1/ For some of these countries, the declines were much more frequent. For example, import prices in Germany fell in 10 of the 18 years from 1956-73--clearly too often to be regarded as a temporary or "unusual" event.

prices and wages during recessions. In this respect, one compensation of the recent recession is that such beliefs are now likely to be held with much less confidence; consistent with that supposition, the trend toward greater downward price inflexibility that had apparently been going on since the early 1960s in major industrial countries seems to have been halted in the 1979-82 period.

The charge that floating rates give rise to vicious and virtuous circles is heard much less frequently now than it was, say, seven or eight years ago (1975-76) when disparities in economic performance between "strong" (e.g., Japan and Germany) and "weak" (the United Kingdom and Italy) industrial countries were particularly large. This may partly reflect the growing awareness that inflation differentials are not the overriding determinants of exchange rate changes. Even more so, it reflects the change in fortunes of some of the formerly weak and strong currencies.

Nevertheless, there are enough important issues in the vicious circle debate to warrant an examination. 1/ The basic proposition is that a depreciation immediately raises the local currency price of imports. These import price increases then feed quickly through to domestic and export prices which in turn induce higher money wages, higher domestic prices, more exchange rate depreciation, etc. If the trade balance displays significant "J-curve" effects, and if the exchange rate depreciates in response to expectations of future current account deficits and of higher inflation, the inflation-depreciation spiral can be even quicker and more adverse. The virtuous circle is just the opposite side of the coin, with the appreciating exchange rate lowering import prices which in turn lower domestic prices, etc. Fixed rates are said to break these circles because the relatively stable export prices of low-inflation countries restrains the increase in domestic prices in high-inflation countries and conversely.

A fair appraisal of the vicious circle hypothesis would seem to require acknowledging the validity of three aspects of it.

First, there can be no doubt that a depreciating exchange rate does have a significant inflationary effect on the depreciating country's import, domestic, and export prices. Appendix Tables 2 and 3, adopted from Goldstein and Khan [1982], give some representative estimates of those effects for a sample of industrial countries (including the seven largest ones). For an "average" industrial country, a 10 percent depreciation would induce: (i) an 8-10 percent increase in import prices

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1/ See also Bond [1979] and Bilson [1979] for analyses of the vicious circle.

within six months; (ii) a 1.5-4.0 percent increase in consumer prices within a year or so; and (iii) a 5-8 percent increase in (local-currency) export prices within two years. Also, there is a definite country pattern to these effects. The smaller, relatively open, and more highly indexed countries get less relative price advantage and more domestic inflation from a given size depreciation than do the larger less open ones. 1/ From this perspective, it is perhaps not surprising that the former group has in the main rejected independent floating in favor of less flexible exchange arrangements.

A second legitimate point of the vicious circle hypothesis is that floating rates probably shorten the time lag between money supply changes and domestic price changes since money supply changes are often transmitted rapidly into exchange rate depreciation. 2/ As acknowledged by Wallich [1977], this problem limits the scope for anti-recessionary action under floating rates, especially in an environment where most industrial countries have had to deal simultaneously with high inflation and high unemployment. The problem is apt to be particularly troublesome when a weak currency country with high unemployment has to engineer a recovery in the face of an unfavorable foreign interest rate differential.

Yet a third point of merit in the vicious circle hypothesis is the claim that the exchange rate movements that begin the vicious circle--and even some that extend it--need not necessarily be the fault of the policy authorities in the depreciating countries. This follows from the widely accepted premise that the current exchange rate depends heavily on expectations about the future exchange rate, and from the observation that the list of factors affecting these expectations is long and varied--including not only monetary and fiscal policies in the home country but also unexpected policy changes in foreign countries, new political developments abroad, current account "news" in other countries, changes in intervention practices, etc; in short, anything that affects the supply of or the demand for assets denominated in that or close substitute currencies could initiate an exchange rate change. Further, even after a decade of floating rates, the possibility of "inefficiencies" in the foreign exchange market that magnify and prolong departures of actual

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1/ These intercountry differences are reduced but not eliminated if one considers deflators of value-added rather than consumer prices; see Appendix Table 3.

2/ Consistent with this proposition, Spitaeller [1978] found that the response of inflation to its determinants was almost three times as fast in industrial countries from 1973-76 as from 1958-76 as a whole. Also, Robinson et al. [1979] concluded that the feedback of exchange rate changes to domestic price changes was larger and quicker in the 1970s than in the 1950s and 1960s.

rates from equilibrium rates can still not be ruled out. 1/ Whether these inefficiencies arise from risk aversion cum legal and regulatory constraints on open foreign exchange positions (i.e., too little stabilizing speculation, as suggested by McKinnon [1974], and Artus and Crockett [1978]), or from a mistaken appraisal of fundamentals by market participants (Dornbusch [1983]), or from the possibility of regime changes that overwhelm the authorities' good policy intentions (the so-called "peso problem"), or from speculative "bubbles" that continue to grow even in the face of perceived disequilibria because no one knows when the crash will occur (Blanchard [1979]), the point is that weak currencies can be subjected to excessive downward pressure relative to longer-term equilibrium levels. 2/ Tobin [1980] has provided a good summary of the problem:

> "...foreign exchange markets are necessarily adrift without anchors.... In these markets, as in other markets for financial instruments, speculation on future prices is the dominating preoccupation of the participants. In the ideal world of rational expectations, the anthropomorphic personified market would base its expectations on informed estimates of equilibrium exchange rates. Speculation would be the engine that moves actual rates to the equilibrium set. In fact no one has any good basis for estimating the equilibrium dollar mark parity for 1980 or 1985, to which current rates might be related. The parity depends on a host of incalculables--not just the future paths of the two economies and the rest of the world but the future portfolio preferences of the world's wealth owners.... In the absence of any consensus on fundamentals, the markets are dominated--like those for gold, rare paintings, and--yes, often equities--by traders in the game of guessing what other traders are going to think," pp. 157-58.

Going to the other side of the ledger, it is not hard to identify two shortcomings of the vicious circle hypothesis.

A first shortcoming is that the vicious circle hypothesis fails to recognize that an excessive rate of domestic monetary expansion will often be the driving force behind both exchange rate depreciation and high domestic inflation. In this sense, the fact that exchange rates typically respond faster to money supply changes than do domestic prices can create the optical illusion that exchange rate movements are "causing" domestic price increases when in reality it is domestic monetary

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1/ For a good survey of the theoretical and empirical work on efficiency in the foreign exchange markets, see Levich [1982].

2/ The Report of the Working Group on Exchange Market Intervention [1983] cites a number of such "bandwagon" episodes.

policy that is the real culprit. This point becomes particularly telling when one moves beyond the initial stages of the vicious circle. This is so because the domestic price increases induced by depreciation also reduce the real value of money balances. As asset holders seek to restore these balances to the desired level, they will spend less on all goods, including imports, creating an incipient current (or capital) account surplus and an exchange rate appreciation--and this even if no relative price advantage were obtained from the depreciation. That is why it is unusual for a vicious circle to be sustained without accommodating money supply behavior. Most studies of policy behavior prior to vicious circles find evidence of just such monetary accommodation (see BIS [1977] and Gordon [1977]). It is also the basis for Haberler's [1980] conclusion that "...countries are not by chance on one side or the other (of the vicious/virtuous circle)." 1/

The second major deficiency of the vicious circle argument is that it puts forward too simplistic a view of exchange rate determination. Empirical studies show that month-to-month changes in exchange rates are not well correlated with month-to-month inflation differentials; indeed, whenever an exchange rate changes substantially over a short time span, this change is almost always accompanied by a significant divergence from purchasing power parity. 2/ Often, the key variable is the market's evaluation of the prospects for monetary and fiscal policies in the weak country. The turnaround in the dollar after the November 1, 1978 package of measures in the United States is perhaps the classic case in point but there are other notable "escapes" from the vicious circle as well (e.g., the pound sterling after the acceptance of the IMF stand-by arrangement in late 1976).

To summarize, with the benefit of hindsight it is clear that each side in the original vicious circle debate undervalued the arguments of the other. Based on their own experience, the larger less open industrial economies underestimated the domestic price effects of depreciation for others, and they oversold the rationality of the market in correctly valuing weak currencies--a rationality that they are coming to increasingly question now that some of their own currencies are weak. At the same time, the smaller, more open economies underestimated the role of domestic monetary and fiscal policies in sustaining the vicious circle and their own capacity to escape from it by altering these policies. In short, floating rates can exacerbate intercountry inflation differentials but they need not.

1/ Haberler [1980], p. 31.
2/ See Mussa [1979].

(2) Floating rates and unemployment

As suggested earlier, the behavior of unemployment over the past decade has been extremely disappointing. Whereas the inflation rate for the seven major industrial countries reached a peak in 1980 and has fallen steadily since then, the unemployment rate for the industrial countries started to turn downward only late last year. From an already high figure of 5.0 percent in 1979, the unemployment rate for the seven larger industrial countries rose to 5.7 percent in 1980, 6.4 percent in 1981, and 8.1 percent in 1982; the forecast for 1983 is 8.8 percent. 1/ For the 1970s as a whole, there appears to have been a secular increase in the long duration unemployment rate, 2/ an increased mismatch at the margin between job vacancies and unemployed workers (i.e., structural unemployment), 3/ and a perceptible worsening in the short-run trade-off between inflation and unemployment. 4/

Critics of floating rates have pointed to two channels by which floating rates could increase unemployment: first, by inducing labor to shift back and forth between tradable and nontradable goods industries in response to transitory relative price changes attributable to short-run exchange rate variability, i.e., by increasing frictional unemployment; and second, by promoting longer-term but reversible real exchange rate disequilibria that leave "deindustrialization" in their wake, i.e., by increasing structural unemployment. 5/

The frictional unemployment argument is not convincing. After some initial experience with exchange rate volatility, one would expect workers and employers to respond only to wage and employment opportunities that they regarded as "permanent." Of course, the essence of the problem is

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1/ See IMF [1983], Table 6. If fourth quarter figures rather than annual averages were employed, the unemployment rate for 1983 would be lower than for 1982.

2/ Haveman [1978].

3/ Deppler and Regling [1979] and Medoff [1983].

4/ Sachs [1983], Wachter [1976].

5/ It was also sometimes argued that floating rates would reduce unemployment by permitting some countries to maintain higher rates of inflation than would be possible under fixed rates. This argument has lost its force however with the acceptance of the vertical nature of the long-run Phillips curve; see Santomero and Seater [1978] for a survey of the relevant empirical evidence. In other words, if the natural rate of unemployment is independent of the rate of inflation, then flexible rates cannot buy high-inflation countries more employment; nor can fixed rates cost less than employment (see Artus and Young [1979]).

that they will not be able to make such a permanent/transitory distinction ex ante with high accuracy. Nevertheless, given the fixed costs associated with changing jobs, workers and employers are apt to be cautious, especially if they have been adversely affected by previous short-run fluctuations in relative prices. Also, one response to increased uncertainty about demand conditions, whether exchange rate induced or otherwise, is to hold larger inventories of labor. 1/ Indeed, such increased labor hoarding would, other things equal, lead to a fall in measured unemployment although simultaneously reducing labor productivity. All in all, short-run exchange rate volatility, by increasing the "noise" and reducing the "signal" in relative price movements, is apt to reduce the efficiency of resource allocation but probably not to an important degree--and not with any major implications for unemployment.

Unfortunately, no such comfort can be taken about the potential unemployment and resource allocation effects of longer-term exchange rate disequilibria; that is, those disequilibria that last two to three years or longer. Here, because the time frame is longer, there is a strong presumption that individuals and firms will be prepared to overcome the fixed costs of switching resources, especially if the inducements are large. The real effective exchange rate of the pound sterling fell by about 20 percent between 1975 and 1976 and then rose by close to 75 percent between 1976 and 1981. 2/ Similarly, the real effective exchange rate of the U.S. dollar fell by about 10 percent between 1976 and 1978 and then rose by about 30 percent between 1979 and 1982. To the extent that swings in competitiveness of this magnitude exceed movements in real equilibrium exchange rates, there will obviously be an unwarranted cycle in export and import-competing sectors. 3/ Further, because resources--especially labor--cannot be quickly and costlessly reallocated from the tradable to the nontradable sector--or even from some slower growing tradable industries (e.g., British engineering, U.S. steel and autos) to other faster growing ones (e.g., computers, oil refining, etc.)--this same boom-bust cycle can generate an increase in structural unemployment.

1/ See Miller [1971].

2/ The real effective rate used here is the ratio of own to competitors' normalized unit labor cost adjusted for exchange rate changes; see International Financial Statistics.

3/ The same kind of argument can be made about the effect of the wrong exchange rate on variations in consumption (i.e., the so-called "welfare cost of disequilibrium exchange rates"); see Hause [1966].

Having said that, it is going too far to attribute the bulk of the employment troubles in traditional export industries (so-called "deindustralization") to floating rates for at least three reasons. First, the employment effects of under- and over-valuation of exchange rates are not peculiar to a floating exchange rate regime. In this regard, it is worth recalling that the latter part of the Bretton Woods era (1969-73) also witnessed real exchange rate changes for major currencies (the U.S. dollar, the deutsche mark, the yen) on the order of 20-30 percent, and that these real exchange rates were apparently associated with serious distortions in the pattern of employment, output, and investment (e.g., see Dunn [1973] and Makin [1974]). Second, there were again structural changes during the floating rate period that had important effects on both export competitiveness and output and employment growth in traditional export industries. To take but two, the real appreciation of sterling from 1976 to 1981 surely owed something to the discovery and exploitation of North Sea Oil reserves. In this sense, at least some of the contraction of the British manufacturing industry in the late 1970s represented an equilibrium response to the increase of domestic oil production and prices. 1/ In the case of U.S. manufacturing industries, a recent study by Lawrence [1983] reaches the following interesting conclusions: (i) the secular decline in manufacturing's share of total employment during the 1970s was due mainly to changes in the domestic composition of output (a revealed preference for services) and to the more rapid increase of productivity in manufacturing, and not to foreign trade; (ii) in fact, from 1973-80 foreign trade provided a net addition to output and jobs in U.S. manufacturing; and (iii) only from 1980-82 did foreign trade contribute to the employment decline in manufacturing--and then it accounted for perhaps a third of the total fall in manufacturing employment. The third point is that if a country attaches significant social welfare to the composition of employment within the tradable sector, then the exchange rate is not the proper policy instrument for assuring that objective. This is because whereas the exchange rate can alter the relative price between tradables and nontradables or (sometimes) that between imports and exports, it cannot alter the relative price between different classes of exports. Hence, if a country wants to preserve employment or slow its decline in some traditional export industries while still permitting overall external adjustment, it will need to supplement exchange rate policy with some more disaggregated scheme of taxes and/or subsidies.

1/ See Forsyth and Kay [1980] who estimate that the equilibrium response to the discovery of North Sea oil was a real appreciation of 18 percent. Bond and Knoebl [1982] estimate that perhaps half of the real appreciation in sterling between 1977 and 1981 was due to the existence of North Sea oil and to the rise in real price of oil. Buiter and Miller [1981] and Williamson [1983] argue for lower figures.

In summary, the historically high unemployment rates that have characterized the floating rate period are best explained by cyclical conditions (especially the tight monetary policies in place since 1979), changes in the growth of labor supply, 1/ changes in the demographic, occupational, and industrial composition of labor supply and demand, the high level of real wages relative to labor productivity, and the growth in generosity and coverage of unemployment benefits. 2/ Real exchange rate movements surely had an important influence on sectoral employment (i.e., in export and import-competing industries) but their contribution over the floating rate period as a whole to aggregate unemployment appears modest alongside other factors. 3/

(3) Floating rates and monetary policy

At the time of the move toward greater exchange rate flexibility, there was great optimism about what floating rates would do for the efficacy of monetary policy. That optimism was essentially based on two arguments: (i) that floating rates would enable countries to regain the control over their own money supplies that they had lost under fixed rates; and (ii) that floating rates would strengthen the output and employment effects of expansionary monetary policy via the positive effects of the induced exchange rate depreciation on the trade balance. Ten years later, even the staunchest defenders of floating rates would have to concede that much of that optimism was misplaced.

(a) Control over the money supply

Perhaps the main reason why floating looked so appealing in the latter years of the Bretton Woods system was that by then the incompatibility of a fixed exchange rate with a relatively independent monetary policy had become so painfully obvious. Nowhere was this more apparent than in Germany and Switzerland where restrictive monetary

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1/ Medoff [1983] notes, for example, that the U.S. civilian labor force grew by 1.1 percent a year in 1950s, 1.7 percent in the 1960s, and 2.5 percent in the 1970s; also the Bureau of Labor Statistics forecasts for the 1980s and 1990s are 1.4 percent and 0.5 percent, respectively.

2/ Consistent with this conclusion, Sachs [1983] finds that he can explain the behavior of aggregate unemployment rates in six major industrial countries over the 1961-81 period by reference to real money balances, the excess of real wages over trend productivity, lagged unemployment, and a time trend; see his Table 5.

3/ Because of the size of the real appreciation of sterling between 1977 and 1981, the United Kingdom probably stands as an exception to this conclusion.

measures (taken in large part to avoid imported inflation) induced capital inflows, official intervention to support the dollar, more restrictive monetary measures, more capital inflows, etc.--creating, in effect, a "monetary vicious circle." In February and March of 1973 alone, the Bundesbank purchased $8.5 billion--only to succumb to floating the next month. The motive for that decision was clear, as later confirmed by Emminger [1977]:

> "For countries like Germany and Switzerland...the main--or even only--reason why they went over to floating in the spring of 1973 was the necessity to regain control over their own money supply," p. 4.

The message that a country could not simultaneously maintain a fixed exchange rate, allow freedom for international capital movements, and have an independently determined money supply was, of course, not new. 1/ It had long been recognized in the "monetary approach" to the balance of payments that under fixed rates decreases (increases) in domestic credit would be offset by increases (decreases) in international reserves. Further, for a "small" country, 2/ this offset would be complete so that the authorities would be able to control the composition of the money supply (i.e., the mix between the domestic and foreign components of the money supply) but not its level; if the country was "large" or if there were less than full employment, the offset would be only partial as domestic credit would affect domestic prices and output as well as the balance of payments. 3/

By now, there is a considerable empirical literature on the behavior of international capital flows and on the sterilization attempts of monetary authorities during the fixed rate period. 4/ While estimates vary quite a bit across studies, as a group they suggest that industrial countries found it possible but at times very difficult to control their money supplies under fixed rates, 5/ with perhaps the monetary authorities in Germany, Switzerland, Belgium, Austria, and France having more trouble than those in Japan, the United States, the United Kingdom, and Italy. 6/

1/ See, for example, IMF [1977], Frenkel and Johnson [1976], and Kouri and Porter [1974].

2/ By a "small" country, it is meant one in which the price level and the interest rate are basically determined in the rest of the world.

3/ For example, see Aghevli and Rodriguez [1979].

4/ For recent reviews, see Kreinin and Officer [1978] and Logue and Willett [1982].

5/ Obstfeld [1982], for example, found that capital flows offset about 50-65 percent of the change in the Bundesbank's net domestic assets during the 1960-70 period.

6/ Hickman and Schleicher [1978], Laney [1979].

What then about the control of the money supply under floating rates? The presumption of greater control is derived from the absence of any obligation to use exchange market intervention to peg the exchange rate. Thus, exchange market pressures take the form of price changes (exchange rate changes) rather than volume changes (reserve movements) and the foreign component of the monetary base ceases to be a source of changes in the money supply.

The difficulty in all this, however, is that the authorities must regard the exchange rate exclusively as a policy instrument and not as a target. For the more they manage the exchange rate, the more they relinquish the added degree of freedom. As noted earlier, the heavy amount of exchange market intervention conducted by industrial countries during the past decade stands as testimony that policy authorities do not regard the "either/or" choice between money supply control and exchange rate control as acceptable. Instead, their behavior reveals a preference for an intermediate solution where the authorities keep an eye on both targets. 1/ This suggests that under floating rates countries have had more control over their money supplies than under fixed rates but that the difference is more one of degree than of kind. 2/ Two observers sum up recent experience:

> "From the experience of the past seven years, it is also apparent that the behavior of exchange rates influences the conduct of monetary policy, but usually only after exchange rates have moved substantially away from what the authorities regard as appropriate or desirable values," Mussa [1981], p. 24.

> "...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.... 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 or Germany," Emminger [1982], p.2.

1/ Argy [1982] provides an account and appraisal of how this mixed strategy worked during the floating rate period in Germany, Japan, and the United Kingdom.

2/ Simple calculations of the standard deviation (or coefficient of variation) of money supply growth across the seven major industrial countries show that the intercountry dispersion has increased marginally in moving from 1963-72 to 1973-82. Using more sophisticated measures of country synchronization, Swoboda [1983] finds no significant change in monetary interdependence across exchange rate regimes.

(b) The effectiveness of monetary policy

The second prong of the case for floating rates as a boon to monetary policy stems from two early theoretical results of Fleming [1962] and Mundell [1968]. The first one is that under conditions of high capital mobility, a given increase in the money supply produces a larger increase in income under floating than under fixed rates. The argument unfolds as follows. Under floating rates, the money supply increase yields a temporary fall in domestic interest rates relative to foreign rates. This induces an incipient capital outflow, a depreciation of the exchange rate, an improvement in competitiveness, and an expansion in net exports. In contrast, under fixed rates, the same interest rate differential induces a (realized) capital outflow that restores the original money supply and the domestic interest rate, thereby preventing any effect on the domestic level of income. The second result is that under flexible rates and high capital mobility, expansionary monetary policy has a comparative advantage in raising the level of domestic income over expansionary fiscal policy. The difference is that whereas the former is accompanied by a fall in domestic interest rates, the latter is accompanied by a rise. As a result, the initial income stimulus under fiscal policy is choked off or at least blunted by currency appreciation, but with monetary policy it is reinforced by currency depreciation.

Whatever its merits as a representation of how monetary policy might have worked under flexible rates in a 1960s-type environment, the Mundell-Fleming model has at least four weaknesses when applied to the 1970s or 1980s.

The first is the assumption that exchange rate changes translate quickly into changes in competitiveness. This would be so if feedbacks from the exchange rate to domestic factor costs and prices were insignificant. As we have indicated earlier, however, the empirical evidence is that such feedbacks do exist and that they can be sizable, especially in the smaller, more open, and more highly indexed industrial countries. The greater are these feedbacks, the smaller the competitive price advantage achieved by depreciation and hence the smaller the expansion in net exports. In fact, when real wages are rigid and unaffected by exchange rate changes, expansionary monetary policy will only affect prices and the exchange rate with no effect on real output, employment, or the trade balance. 1/ This problem is particularly

1/ See Argy and Salop [1979], Sachs [1982], and Branson and Rotenberg [1980]. More generally, the effects of expansionary monetary and fiscal policies on real output also depend on whether workers bargain for after-tax real income and whether workers and producers use different price deflators for calculating real wages; see Argy and Salop [1979] and Dornbusch [1983].

relevant because there are indications that real wage rigidity is much greater in Europe than in the United States (with Japan being in the middle). 1/ This implies that the United States gets more advantage from exchange rate movements than do the Europeans. Branson [1983] summarizes this argument:

> "These results suggest a pattern of differences in adjustment to exchange rate changes between Europe and the United States...an exchange rate change will move relative prices and the balance on current account in the United States, and also influence output, all in the expected 'stabilizing' direction. In Europe, however, the movement in the exchange rate will mainly move the overall price level, with minimal effects on the trade balance or output. So the exchange rate is viewed as an effective instrument for stabilizing the current account in the United States. In Europe, however, exchange rate fluctuations are equally reasonably viewed as essentially destabilizing the price level. The result is policy conflict based on different implicit assumptions about the underlying structure of labor markets and wage behavior," p. 58.

The second weakness of the Mundell-Fleming model is the assumption that changes in competitiveness will yield rapid improvements in the depreciating country's trade balance. Because in the short run (say less than a year) import prices rise more rapidly in response to depreciation than export prices, and because there has not been enough time for the volume of trade to adjust much, it is quite common for the trade balance response to depreciation to follow a "J-curve." 2/ During this short run, the stimulating effects of monetary expansion will thus be reduced not strengthened by depreciation. 3/ Over time of course, the initial perverse trade balance effects will be checked and then reversed as export price increases catch up with import price increases and as the volume responses of imports and exports grow large. Nevertheless, this means that, if anything, the comparative advantage of expansionary monetary policy lies in the medium to long run, not in the short run.

1/ See Sachs [1983] and Grubb et al. [1982].
2/ See Spitaeller [1980].
3/ See Niehans [1975].

A third limitation relates to the size (and unpredictability) of the exchange rate change induced by domestic monetary expansion when domestic and foreign assets (including currencies) are close substitutes. The point here is that exchange rate changes can go much farther than the authorities would like. For example, depreciations that were looked on with favor because they would diminish current account deficits can become cause for concern, as asset holders switch out of the weak currency, and as the weaker currency's store of value--and perhaps even its unit of account and medium of exchange functions--come to be replaced by stronger currencies. Thus, as recognized in the so-called "currency substitution" literature, high asset substitutability can limit the scope for expansionary monetary policy. 1/

Yet a fourth necessary amendment to the Mundell-Fleming model is the incorporation of exchange rate expectations into the choice between domestic and foreign assets. Specifically, under floating rates asset holders will not necessarily select the asset with the higher nominal interest rate, unless the interest differential exceeds the expected depreciation of that currency relative to the one with the lower interest rate. The important implication of this familiar interest rate parity condition is that monetary policy operates on exchange rates not only via its direct effect on interest rates but also via its indirect effect on expected future exchange rates. For example, success in halting a depreciation with restrictive monetary policy is likely to hinge as much on convincing the market that this policy is relatively permanent (thus affecting the future exchange rate) as in engineering a favorable interest rate differential. The shortcoming of looking only at nominal interest rates is perhaps best illustrated by noting that the U.S. dollar was depreciating relative to the deutsche mark from mid-1976 through most of 1978 despite a rise in U.S. interest rates relative to those abroad. 2/ A related point of interest is that the movement of the exchange rate itself can be a useful indicator of the appropriate stance of monetary policy under floating rates. Because the nominal interest rate reflects the sum of the real rate of interest and the expected rate of inflation, a rise in the nominal interest rate could reflect an increase in either of the two (unobservable) factors, each with different implications for the stance of monetary policy. 3/ The exchange rate may help disentangle that puzzle: if the exchange rate is appreciating in the face of a favorable interest differential, it signifies a rise in the real rate

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1/ See Calvo and Rodriguez [1977], Kareken and Wallace [1978], and Brillembourg and Schadler [1979].

2/ See Dornbusch [1979].

3/ See Mussa [1981] and Frenkel [1983].

of interest which may call for easing of domestic monetary policy relative to that abroad; on the other hand, a joint reading of currency depreciation and a favorable interest rate differential implies that inflation expectations are the culprit, thus signaling, ceteris paribus, monetary restraint.

Summing up, it is clear in retrospect that the case for monetary policy under floating rates was oversold. Many of the perceived constraints on monetary policy during the fixed rate peiod turned out not to be constraints imposed by the exchange rate regime but rather constraints imposed by the openness of national economies. As succinctly put by Frenkel [1983]:

> "...These constraints are reflected in either a reduced ability to influence the instruments of monetary policy (*like the nominal money supply under fixed exchange* rates), or in a reduced ability to influence the targets of monetary policy (like the level of real output), or in an increased prudence in the use of monetary policy because of the potentially undesirable effects on expectations," p. 49.

Having said that, those who counsel directing monetary policy more toward stabilization of the exchange rate need to consider what policy instruments will then be directed toward domestic objectives. 1/ In this respect, the track record of fiscal policy hardly makes it an attractive candidate, especially in view of the seeming structural nature of some present day budget deficits. Thus, while the comparative advantage of monetary policy under flexible rates is undoubtedly smaller than originally thought it still has probably not disappeared.

(4) Floating rates and insulation against shocks

This is another area where some initial expectation about the potential of floating rates has been disappointed. The expectation was that floating rates would provide "effective" insulation against a wide variety of foreign shocks or disturbances, thereby permitting macroeconomic policy to concentrate on combating disturbances of domestic origin. In the event, it has been rather forcefully demonstrated that while floating rates alter the nature of the transmission process for foreign disturbances from that under fixed rates, they by no means eliminate such transmission effects; also, while floating rates provide better insulation against certain types of foreign disturbances than do fixed rates, insulation is worse against other types. While many factors are relevant for assessing the insulation properties of alternative

1/ Solomon [1983] expands upon this argument.

exchange rate regimes, two that deserve special attention because of their prominence in the 1970s are the degree of international capital mobility and the distinction between real and monetary shocks. 1/

(a) Capital mobility and insulation

The notion that floating rates can insulate a country from foreign disturbances is not such a bad working assumption if the international mobility of capital is low, but is serious misrepresentation when applied to the high capital mobility world of the 1970s and 1980s. Indeed, one of the key messages of the asset market view of exchange rates is that anything that affects asset supplies or asset demands can alter exchange rates and thus affect real variables (i.e., real output and employment) in both the home and the foreign country. In this sense, the relevant question is not *if* floating rates can transmit foreign disturbances but rather *how* they do so vis-a-vis fixed rates.

Two rather well-known results from the theoretical literature are worth repeating: 2/ (i) a foreign monetary disturbance will have opposite effects on foreign and domestic output under floating rates but will move output in the same direction under fixed rates; and (ii) a foreign expenditure disturbance, whether induced by fiscal policy or otherwise, will be transmitted to domestic output with greater strength under floating rates than under fixed rates. In brief, these results are based on the assumption that a foreign monetary expansion lowers the foreign interest rate while a foreign expenditure disturbance raises it; hence, the two types of disturbances produce opposite exchange rate movements which, in turn, implies opposite net trade balance and real output effects for the home country.

Perhaps the key policy implication of these theoretical results is that countries cannot rely on floating rates to shield them from foreign policy changes. Instead, if they want such insulation, they or the foreign country have to take some countervailing action. For example, if the home country wants to prevent foreign monetary expansion from reducing home output, or foreign fiscal expansion from increasing home inflation, it will have to prevent an interest rate differential from appearing so as to stabilize the exchange rate and thereby choke off the main channel of transmission. Similarly, if an autonomous shift in asset demands is not to impinge upon domestic policy, either the home or foreign country will have to alter the relative supplies of home and foreign currency assets so as to offset these demand shifts. In

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1/ Other factors that matter are the country's access to international capital markets and the degrees of openness, of factor mobility, of export diversification, and of wage-price flexibility.

2/ See Mussa [1979] for a demonstration of these results.

principle, of course, such countervailing actions can always be devised but there may be formidable constraints on their practical application, e.g., fiscal policy may not be flexible enough (especially in the direction of restraint) to make rapid changes in the policy mix; or the substitutability of domestic and foreign assets may be so high as to preclude small changes in relative asset supplies from having much of an effect on exchange rates; or the home country might not want to follow the foreign country's policy lead because its domestic unemployment/ inflation picture is different, etc.). In any case, the essential point is that with high international mobility of capital, countries will have to "work at it" to obtain a reasonable degree of insulation from foreign disturbances and, even then, there will be many constraints that will preclude complete insulation.

(b) Monetary versus real shocks

A second reason why the insulating properties of floating rates may have been overestimated is that floating rates do seem to have a comparative advantage against "monetary" or "overall" price level shocks, and that these types of shocks probably predominated in the 1950s and 1960s. For example, a floating rate provides good potential for insulation against a rise in the world price level because an appreciation of the domestic currency proportionate to the increase in foreign prices prevents wealth or relative price effects from taking place. Floating rates cannot, however, provide effective insulation against "relative" price changes among different classes of traded goods (say, between oil or food and other tradables) because they cannot alter relative prices at that level of disaggregation. In fact, if anything, floating rates have a comparative disadvatange in protecting against "real" shocks because, unlike fixed rates, they effectively prevent the balance of payments from serving as a cushioning device to smooth domestic consumption. 1/ These distinctions are not academic because, as is well known, the most important shocks of the 1970s were "real" shocks involving large changes in the relative price of tradable commodities. 2/ In this connection, it is worth reporting that theoretical models that simulate the effects of a relative price increase for an important intermediate input (e.g., energy products) in an economy with floating rates and sticky real wages typically find that the authorities are powerless to to shield the economy from some increase in unemployment (except under some restrictive conditions). 3/

1/ See Frenkel and Aizenman [1982] and Flood and Marion [1982].
2/ To the extent that fiscal imbalances affect real interest rates, errant fiscal policies can also be considered as real disturbances.
3/ See Buiter [1978] and Argy and Salop [1979].

In the real world, countries will be faced with both monetary and real shocks and they will not know in advance which types of shocks will predominate. In this situation, an intermediate degree of exchange rate flexibility can be optimal but exchange rate policy should not be expected to produce complete insulation from either real or monetary shocks.

(c) Econometric evidence

From an empirical viewpoint, there is no evidence to suggest that the period of floating rates has been characterized by a weaker international transmission of disturbances than was the period of adjustable par values. Studies by Ripley [1979], Hickman and Schleicher [1978], and Swoboda [1983] all find that synchronization of movements in real economic activity and of monetary variables among industrial countries has typically been somewhat higher under floating rates. 1/ Such evidence, however, is consistent not only with greater transmission of disturbances under floating rates but with other hypotheses as well, including the greater incidence of "common" external shocks and the common policy responses to them in the floating rate period. This is, for example, the explanation favored by Artus [1983] in interpreting Swoboda's [1983] evidence of increased synchronization:

> "In my view it is largely because of these common tendencies [the increase in the size of social transfers, the policy of monetary accommodation of wage and price increases, the growth of rigidities in labor markets, and the decrease in the share of income going to capital, mainly in Europe], and because of the two waves of oil price increases, that industrial countries have all jointly moved into a period of stagflation since 1973. All being in the same situation, it is not surprising either that they have tended to adopt fairly similar policies," p. 103.

To summarize, the past ten years make it clear that the old view of floating rates as "premier" insulators against a whole range of foreign disturbances is incorrect. Instead, floating rates should be considered

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1/ The only macroeconomic variable that seems to show markedly less synchronization in the floating rate period is the rate of inflation; see Swoboda [1983]. Even here, however, the data may also be reflecting the tendency for the variability of inflation (both within and across countries) to increase with the mean rate of inflation; see, for example, Logue and Willett [1976].

as having a comparative advantage against some types of disturbances and a comparative disadvantage against others. Also, because floating rates cannot provide complete insulation against the representative bundle of foreign disturbances, the case for policy activism to combat such disturbances (including in some instances greater exchange market intervention) is thereby strengthened. By the same token, the case for coordination of policies is strengthened so as to minimize conflicts between countries' policy actions.

b. Floating rates and external adjustment

In this subsection, attention is shifted from domestic economic objectives toward the role of the exchange rate system in securing external payments adjustment. The focus is on two broad questions: first, has the extent of external payments adjustment during the period of floating rates been different than that during the last decade of adjustable par values; and second, how does the process of external adjustment itself operate under managed floating?

(1) The degree of external adjustment

As argued earlier, probably the best way to identify and to measure the degree of external payments adjustment is to compare a country's actual balance of payments with an estimate of the "equilibrium" balance of payments. The equilibrium payments balance can, in turn, be defined as one where the current account equals "normal" net capital flows, after adjustment for the effects of "temporary" factors (e.g., dock strikes, bad harvests), of abnormal capacity utilization or unemployment, of permanent exogenous changes in the terms of trade, and of undue restrictions or incentives on trade and capital movements. If the actual payments balance is close to the equilibrium, then the presumption is that external payments adjustment has been satisfactory; if not, it implies that there has been a lack of adjustment. Similarly, by extending the same methodology to a group of countries, one can come to some judgment about the efficacy of external adjustment for the system as a whole.

Unfortunately, there are two formidable practical problems that limit the analysis of external payments adjustment. The first one is that a consistent, reasonably long time series on equilibrium payments balances simply does not exist even for the larger industrial countries--certainly not one long enough to compare the floating rate period with the period of adjustable par values. 1/ Faced with this situation, a second-best procedure was adopted. Two "shortcut" or "crude" measures of equilibrium

1/ As detailed later, estimates of equilibrium payments balance for industrial countries are few and far between and typically begin only in 1975.

payments balances that could be extended back to 1963 or 1965 were constructed so that a comparison could be made across exchange rate regimes. Next, the available estimates based on more comprehensive definitions of equilibrium payments balances were examined for whatever light they could throw on the degree of external adjustment within the floating rate period itself.

The second problem is the same one encountered earlier in analyzing the role of the exchange rate system in facilitating the pursuit of domestic economic objectives, namely, how to hold "other (non-exchange rate system) things equal" so that the effect of the exchange rate system is not confused with the period of managed floating. In this respect, the external disturbances faced by industrial countries during the 1973-82 period undoubtedly made external adjustment more difficult in that period than in the preceding decade. For example, the average annual percentage change in the terms of trade for industrial countries was 0.3 for 1963-72 but -1.6 for 1973-82. 1/ On the other hand, it is worth remembering that the external adjustment that was achieved under managed floating took place at a much lower level of capacity utilization and at a much higher rate of unemployment than during the preceding decade. 2/ While both of these factors would be incorporated into a first-best measure of the equilibrium payments imbalance, they are either excluded or only partially accounted for in the shortcut measures.

(a) Current account imbalances alone

As suggested earlier, there are serious problems associated with measuring external payments adjustment by reference to the current account alone. Nevertheless, in view of the elusive nature of "normal" capital flows, the prominence given to the current account as a barometer of the need for adjustment in some earlier periods, 3/ and the availability of relatively long time series data, there may be merit in reviewing the historical record.

Table 2 presents three characteristics of current account imbalances (in relation to GNP) for seven larger and eight smaller industrial countries during the floating rate period (1973-82) and during the last decade of adjustable par values (1963-72). 4/ The mean ratio of the current account to GNP is employed as a rough indicator of the average

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1/ The analogous figures for the seven major industrial countries were 0.4 for 1963-72 and -2.1 percent for 1973-82.

2/ See Table 1., p. 12.

3/ Salop and Spitaeller [1980] provide an interesting sample of official pronouncements on the current account during the 1970-79 period.

4/ Expressing current account imbalances as a ratio to GNP not only serves as a scale adjustment for cross-country comparisons but also makes some adjustment for current account changes achieved via abnormally high or low growth rates of real income.

Table 2. Current Account Imbalances as a Percent of GNP: Selected Industrial Countries, 1963-72 Versus 1973-82 1/

Country	Mean 2/		Standard deviation		Serial correlation 3/	
	1963-72	1973-82	1963-72	1973-82	1963-72	1973-82
Larger countries						
United States	0.30	0.05	0.46	0.57	0.86*	0.19
Canada	-0.85	-1.31	1.17	1.16	0.60*	0.74*
Japan	0.79	0.20	1.15	1.02	0.83*	0.22
Germany	0.53	0.20	1.07	1.63	0.61*	0.74*
Italy	1.90	-0.96	1.47	2.19	0.81*	0.34
United Kingdom	0.21	-0.19	1.11	1.85	0.46	0.62*
France	-0.18 4/	-0.25	0.57 4/	1.18	...	...
Unweighted average	0.68	0.46	1.00	1.37	0.70 5/	0.48 5/
Smaller countries						
Australia	-2.62	-3.04	1.71	1.92	0.83*	1.01*
Austria	-0.48	-1.65	0.71	1.33	0.45	0.68*
Denmark	-1.95	-3.27	1.15	1.13	0.68*	0.96*
Finland	-1.44	-2.35	1.24	2.78	0.66*	0.73*
Netherlands	0.04	1.37	1.14	2.07	-0.12*	0.75*
Norway	-1.88	-4.19	1.78	5.95	0.03	0.84*
Spain	-0.50	-1.90	1.39	2.05	0.63*	0.73*
Sweden	-0.24	-1.64	0.85	2.01	0.61	0.80*
Unweighted average	1.14	2.42	1.26	2.39	0.50	0.81

1/ Current account includes goods, services, and all current transfers, both private and official.

2/ Country means take account of sign of current account imbalances. In contrast, group means are based on absolute values of country means.

3/ Statistic reported is the estimated coefficient on lagged dependent variable in the first-order auto-regressive equation. * indicates statistical significance at the 95 percent level.

4/ 1967-1972 only. Prior to 1967 balance of payments data for France included data for overseas territories.

5/ Excludes France.

degree of current account adjustment over the period, 1/ while the standard deviation and (first order) serial correlation statistics proxy the variation and persistence of these current account imbalances over the period. Ceteris paribus, external adjustment is assumed to be less satisfactory the larger are each of these three summary statistics. 2/

The story told by Table 2 is straightforward. For the larger industrial countries, there is no indication that current account adjustment has been less satisfactory under floating rates than under the Bretton Woods system. In fact, the numbers in Table 2 suggest that average current account imbalances for the larger countries have been noticeably smaller and less persistent (although with larger variation) under floating rates than during the 1963-72 period. At the same time, the current account performance of the smaller industrial countries does seem to have deteriorated during the period of floating rates, with larger average current account imbalances, greater amplitude in these current account swings, and with more year-to-year persistence in those imbalances. 3/ In interpreting Table 2, it is also worth reporting that the main qualitative conclusions for both country groups are unaffected if the 1953-62 period is substituted for 1963-72, 4/ or if official transfers are excluded from the current account, or if a rough adjustment for the global current account asymmetry is made for the larger industrial countries, 5/ or if the partial data for France are excluded from the calculations.

1/ In calculating the mean ratio of the current account to GNP for each individual country, account is taken of the sign of the current account. In contrast, in computing the group average, absolute values of the ratio are employed.

2/ While the assumption that the optimal current account is zero is difficult to defend in principle, it is interesting to note that Dooley and Penati [1983] found that for 19 industrial countries as a group, there was no long-run tendency for the ratio of the current account to GNP to depart from zero over the 1949-81 period.

3/ In interpreting the results for the smaller industrial countries, it is useful to recall that most of these countries adopted some form of "limited" flexibility or "pegged" exchange arrangements during the past decade. Thygesen [1979] provides an analysis of exchange rate policy for these countries over the floating rate period.

4/ For example, the mean ratios of the current account to GNP during 1953-62 were 1.17 and 0.69 for the larger and smaller industrial countries, respectively. Also, Dornbusch [1980] reached the same conclusion for the four largest industrial countries in a comparison of the 1960-73 and 1973-79 periods.

5/ In making this adjustment for the statistical asymmetry, it was assumed: (i) that there was no asymmetry in the 1963-72 period, and (ii) that for each year during the 1973-82 period, the share of each large industrial country in the global asymmetry could be approximated by its share of world exports (during 1973-82). These asymmetry figures were then added to the current account for that year to derive a "new" current account to GNP ratio for each large industrial country. The results were very similar to those reported in Table 2.

Chart 3 provides some complementary information on current account adjustment in 1973-82 versus 1963-72 by showing the cumulative current account imbalance for each of the sample countries. This time, the imbalances are not scaled by GNP and the calculation starts fresh in each period. Most interesting, and not previously hinted at in Table 2, is how long it takes for initial current account imbalances to be reversed--and this under both floating rates and adjustable par values. For whatever reason, when such a complete reversal does take place, it typically requires from three to seven years, hardly anybody's idea of rapid adjustment.

(b) Current account positions cum normal capital flows

One important drawback of measuring external adjustment by considering only the current account is that it ignores the possibility of continuing intercountry differences in savings behavior and in real rates of return on investment. Such intercountry differences make it possible for a country with a relatively low domestic savings rate but with relatively attractive domestic investment opportunities to run a persistent current account deficit by drawing on foreign savings. Further, so long as the host country invests those foreign savings wisely (i.e., obtains a rate of return in excess of the cost of borrowing), there is no reason why it cannot sustain a current account deficit for a prolonged period and, just as important, there is no presumption that such a continuing current account imbalance would be suboptimal from a global welfare viewpoint. 1/

For these reasons, the "equilibrium" balance of payments is usually defined not in terms of the current account alone but rather in terms of a current account position that can be financed by "sustainable" or or "normal" capital flows. As is well-known, there are a host of serious problems in defining and measuring normal capital flows. 2/ For the

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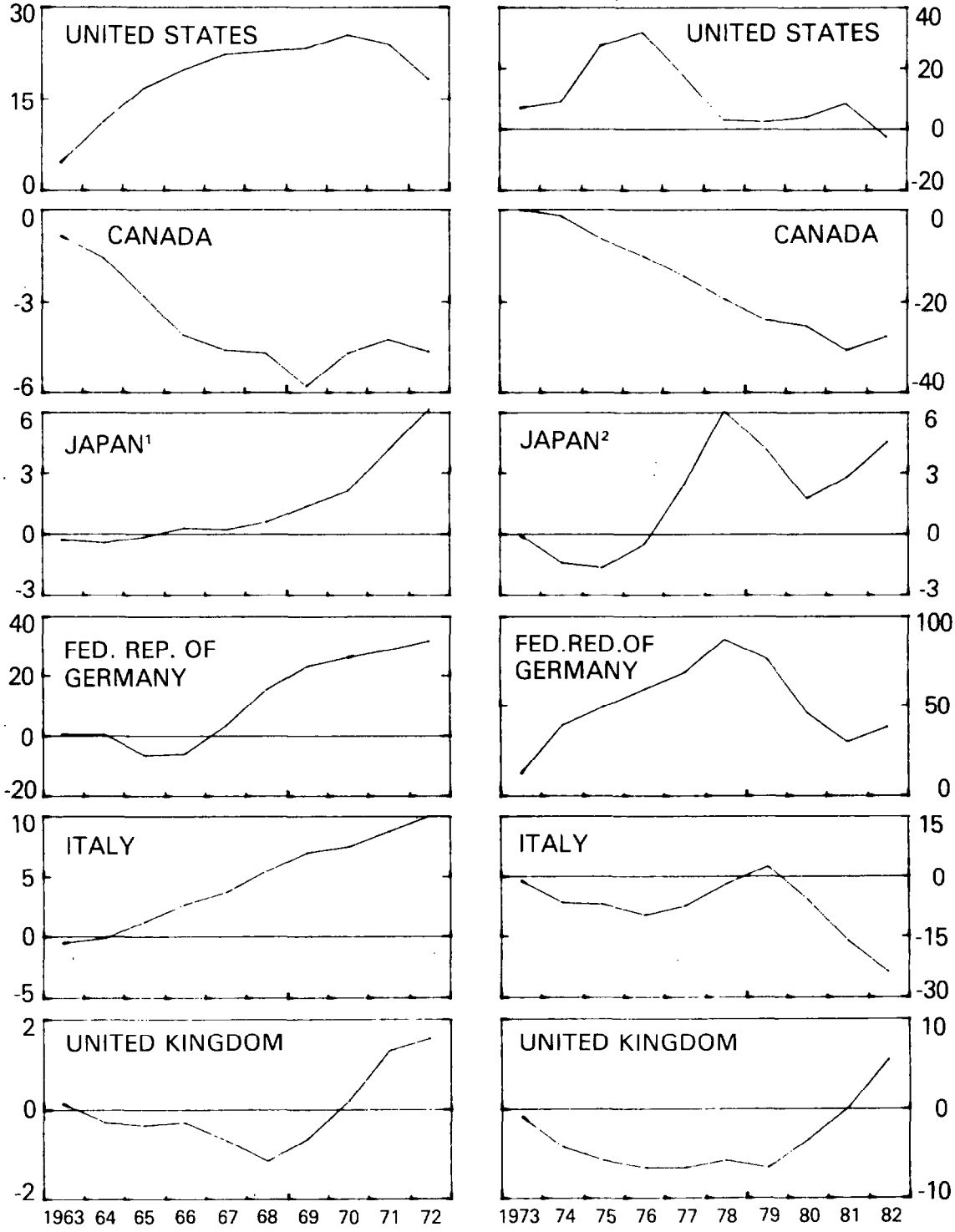
1/ As noted earlier, one has to be careful here to also consider whether the real rate of return on domestic assets is not artificially high or low because of the presence of special incentives for, or restrictions on, international capital flows. If, for example, the real interest rate is artificially high because of an unsustainably large budget deficit, then the structure of that country's balance of payments is not likely to be either sustainable or internationally optimal. More generally, a proper evaluation of the equilibrium balance of payments should consider the sustainability and optimality of the public sector's tax and expenditure structure.

2/ These problems include adjusting observed capital flows for large changes in fiscal positions, for structural economic changes (e.g., natural resource discoveries), and for changes in restrictions on capital flows. Also, one has to decide which (if any) official capital flows to include. All these problems are discussed at some length in the recent paper (SM/83/263, "Issues in the Assessment of Exchange Rates of Industrial Countries in the Context of Their Economic Policies."

CHART 3

CUMULATIVE CURRENT ACCOUNT BALANCES FOR SELECTED INDUSTRIAL COUNTRIES: 1963-72 AND 1973-82

(In billions of domestic currency)[1]

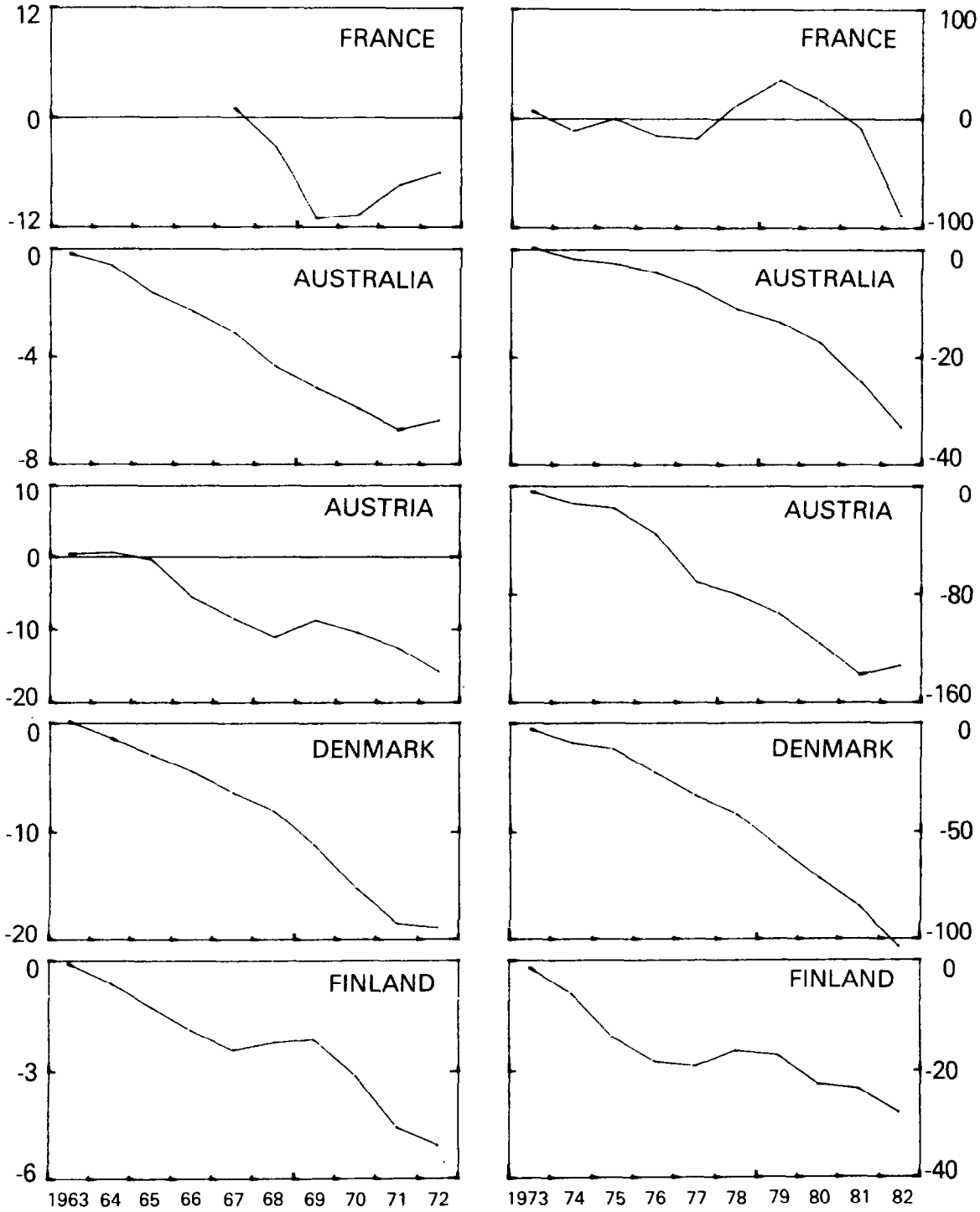


[1]Current account includes goods, services, and all current transfers, both private and official.
[2]In trillions of yen.

CHART 3 (continued)

CUMULATIVE CURRENT ACCOUNT BALANCES FOR SELECTED INDUSTRIAL COUNTRIES: 1963-72 AND 1973-82

(In billions of domestic currency)[1]

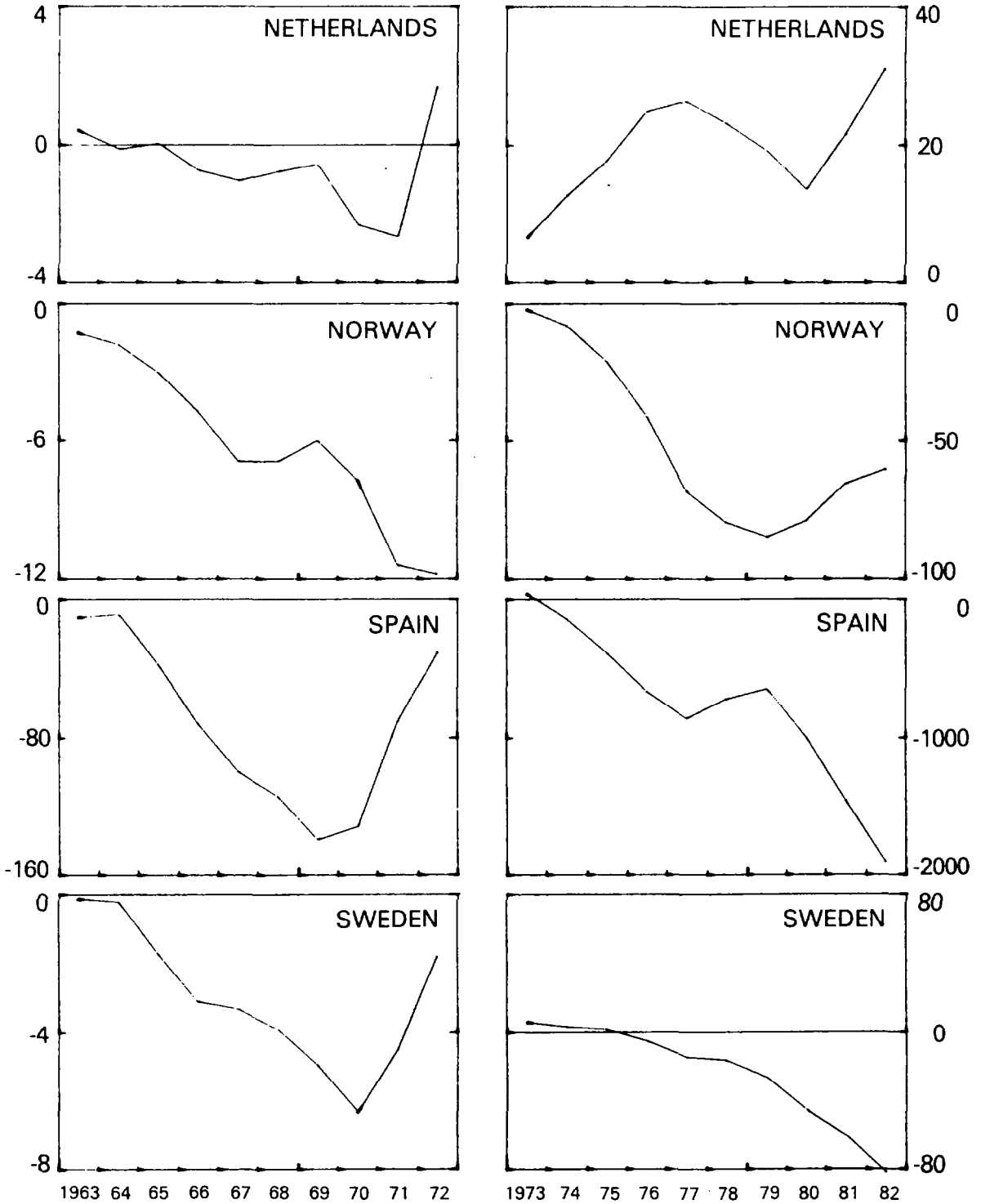


[1]Current account includes goods, services, and all current transfers, both private and official.

CHART 3 (concluded)

CUMULATIVE CURRENT ACCOUNT BALANCES FOR SELECTED INDUSTRIAL COUNTRIES: 1963-72 AND 1973-82

(In billions of domestic currency)[1]



[1]Current account includes goods, services, and all current transfers, both private and official.

purposes of this study, normal capital flows were approximated by a four-year moving average of the ratio of actual net private capital flows (inclusive of errors and omissions) to GNP. 1/ Given such a measure, it is then possible to use the sum of the current account and normal capital flows as an approximate indicator of the extent of external disequilibrium. That is, the closer this sum is to zero, the more satisfactory is external adjustment presumed to be.

Table 3 gives the relevant comparison of the floating rate period and the adjustable peg period for this second (crude) indicator of external adjustment. 2/ Because of considerations of data availability for capital flows, the number of smaller industrial countries in the sample falls from eight to four. Also, the use of a four-year moving average for normal capital flows involves the loss of two observations from the beginning of the data period and one from the end; hence, the adjustable peg period is now 1965-72 and the floating rate period is 1973-81.

Two conclusions stand out in Table 3. First, as in Table 2, external adjustment for the larger industrial countries shows up as considerably better during the floating rate period than during the last decade of adjustable par values. Both the average size of the imbalance and its persistence (i.e., the serial correlation) are noticeably smaller in 1973-81 than in 1965-72. On the minus side, the average dispersion of these imbalances is larger in 1973-81 than in 1965-72. Deserving perhaps of special notice is the dramatic improvement in external adjustment recorded in 1973-81 by the two countries (Japan and Germany) with the largest estimated average external imbalance in 1965-72. 3/ As before,

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1/ Specifically, normal capital flows (NCF) are defined as $NCF_t = [CF_{t+1} + CF_t + CF_{t-1} + CF_{t-2}]/4.0$, where CF_t is the ratio of net net private capital flows to GNP in year t. The allocation of errors and omissions to the capital account is rather arbitrary, but does not seem to affect the qualitative nature of the conclusions reached. A more serious problem with any such mechanical formula for normal capital flows is that it cannot totally "filter out" short-term disequilibria. The experience in Japan in 1973/74 and again in 1979/80 when unusually large capital flows through the domestic banking system were coincident with short-term oil deficits serves as a good case in point.

2/ Because the calculations in Table 3 do not account for any changes in desired reserves over time, the possibility cannot be dismissed that the figures reflect some combination of adjustment efforts and of changes in desired reserve holdings.

3/ Also worth noting is the cessation of the "explosive" trend in the serial correlation of the U.S. payments indicator that was evident in the 1966-72 period.

Table 3. Current Account Imbalances Plus Normal Private Net Capital Flows as a Percent of GNP: Selected Industrial Countries, 1965-72 Versus 1973-81 1/

Country	Mean 2/		Standard deviation		Serial correlation 3/	
	1965-72	1973-81	1965-72	1973-81	1966-72	1973-81
Larger countries						
United States	-0.62	-0.60	0.60	0.66	1.51*	0.57*
Canada	0.25	-0.26	1.15	0.75	0.17	-0.29
Japan	0.94	0.04	0.93	1.00	0.86*	0.19*
Germany	0.75	0.35	0.97	1.31	0.85*	0.54*
Italy	0.64	0.00	1.00	2.51	0.29	0.27
United Kingdom	0.07	-0.13	1.57	1.51	0.62*	0.25
France	0.29 4/	0.18	1.10 4/	0.90	...	...
Unweighted average	0.51	0.22	1.05	1.23	0.72	0.35
Smaller countries						
Denmark	0.21	0.31	1.03	1.16	0.19	-0.11
Netherlands	0.76	0.41	1.11	1.53	0.33	0.42
Norway	0.95	1.64	1.73	3.11	0.02	0.69
Sweden	-0.01	0.18	0.72	1.16	0.47	-0.04
Unweighted average	0.48	0.64	1.16	1.74	0.25	0.31

1/ Current account includes goods, services, and all current transfers, both private and official. Private net capital flows include net errors and omissions.

2/ Country means take account of sign of imbalances. In contrast, group means are based on absolute values of country means.

3/ Statistic reported is the estimated coefficient on lagged dependent variable in the first-order auto-regressive equation. * indicates statistical significance at the 95 percent level.

4/ 1967-1972 only. Prior to 1967 balance of payments data for France included data for overseas territories also.

however, it is apparent that the smaller industrial countries have not shared in this improved external adjustment; with account taken of normal capital flows, external adjustment is still worse (in terms of average size, amplitude, and persistence) in the floating rate period, although the period differences are much reduced vis-a-vis the current account measures shown in Table 2. 1/

The second important conclusion emanating from Table 3 is that the size of external imbalances is much reduced (during both periods) when external adjustment is defined to include the capital account as well as the current account. In other words, on average, private net capital flows have acted as an offset to current account imbalances--albeit certainly not a perfect offset. This point is brought out more clearly in Chart 4 which shows the annual ratios to GNP of the current account and of net private capital flows for each of the subject countries over the whole 1963-83 period. For the larger industrial countries, the typical pattern is for both the current account and the private capital account to fluctuate around their long-term trend values (of zero to roughly 1 percent of GNP), and for positive (negative) deviations of the current account to be paired with negative (positive) deviations in the private capital account. 2/ Thus, the rule is still that private capital flows help to "finance" current account imbalances rather than adding to them. This does not mean that there have not been episodes when capital flows exacerbated current account problems. Indeed, Chart 4 shows that the last few years of the Bretton Woods system (1969-72) as well as the 1977-79 period fit the characterization that "when the current account gets bad the capital account gets worse." 3/ These periods of strong disequilibrium and of great pressure on exchange rates also provide one explanation for the heavy official intervention that took place during them, as authorities "leaned against the wind" to dampen exchange rate movements.

As regards the smaller industrial countries, there is a more pronounced trend in net private capital flows associated either with the financing of large-scale energy projects (e.g., Norway) or with a substantial increase in official or quasi-official borrowing (e.g.,

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1/ This statement is also true when the calculations in Table 2 are redone for the 1965-72 and 1973-81 periods used in Table 3.

2/ For the six larger industrial countries (excluding France), the only case where the mean current account or mean capital account ratio gets much above 1 percent is Canada where both ratios stand at about 2 percent for the 1963-72 period. Even in this case, however, the mean ratios carry opposite signs.

3/ See Dornbusch [1980], p. 173.

Denmark, Netherlands, and Sweden). 1/ Note, however, that for these smaller industrial countries, the negative covariance between the current account and private net capital flows still holds and that, as a result, external imbalance inclusive of capital flows is typically much smaller than without them.

(c) The equilibrium balance of payments

Even though estimates of a more comprehensive construct of the equilibrium balance of payments do not extend back beyond 1975 or 1976, these estimates are still worth examining for what they imply about the adequacy of external payments adjustment during the last seven or eight years of managing floating. Two such estimates or studies merit separate mention.

The first is that recently done by Williamson [1983]. Although he estimates discrepancies between actual and so-called "fundamental equilibrium exchange rates" rather than differences between actual and equilibrium payments imbalances, it is possible to infer the latter from the former because Williamson defines his fundamental equilibrium exchange rate as essentially the exchange rate that would make the actual balance of payments equal to the equilibrium one. 2/ Also, the types of adjustments that are made to actual current account and capital account balances (e.g., adjustments for cyclical demand effects, permanent exogenous changes in the terms of trade, continuing intercountry differences in labor productivity, the switch in the status of the United Kingdom since 1977 from a major oil importer to a significant oil exporter, etc.) are at least close relatives of the types of adjustments suggested here. For these reasons, it is probably legitimate to use Williamson's estimates of real exchange rate disequilibria (i.e., differences between actual and fundamental real equilibrium exchange rates) as a rough index of external payments maladjustments.

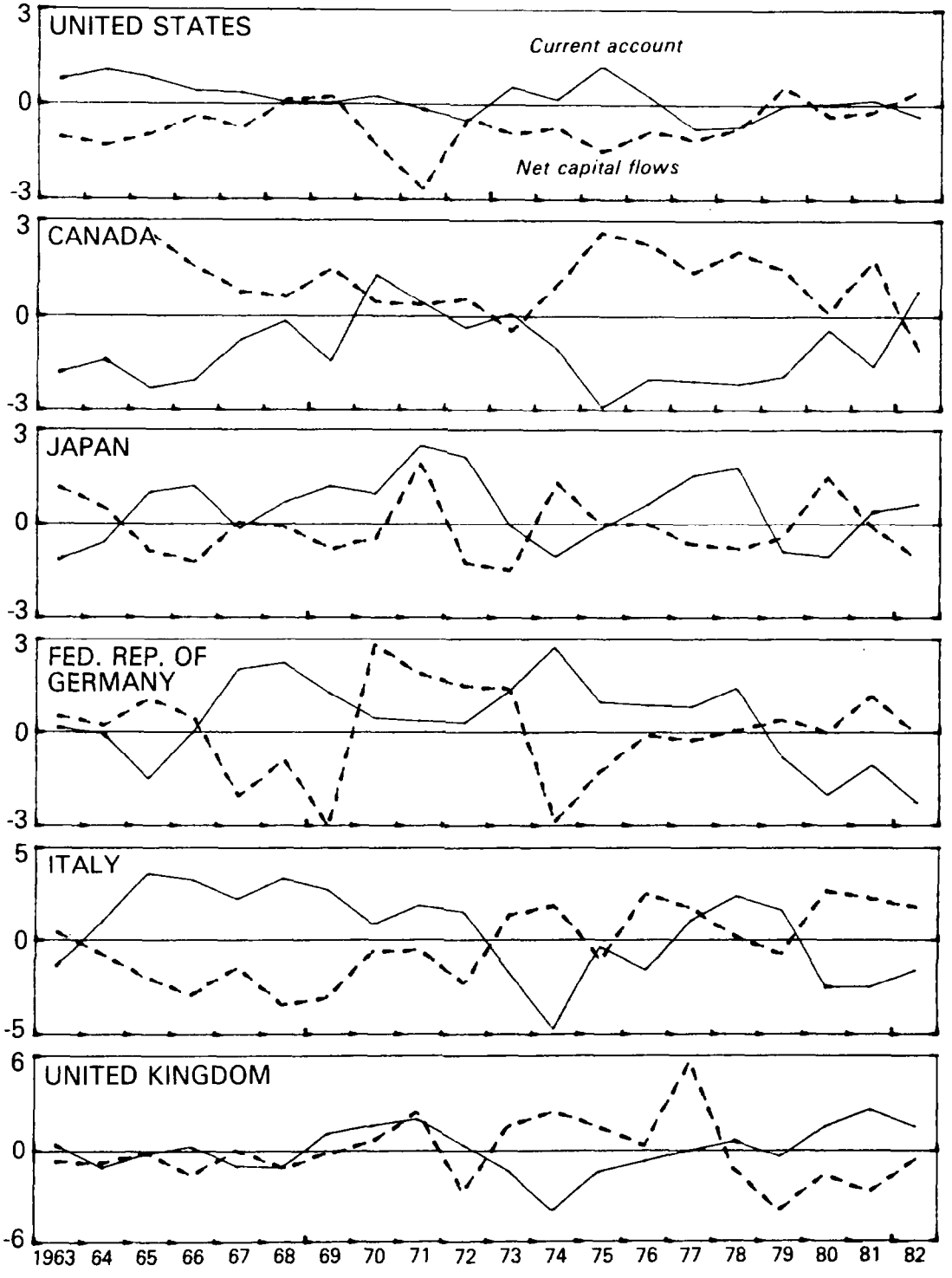
Williamson's [1983] estimates cover the five major currency countries for the 1976-83 period. Two of his conclusions are relevant for this paper. First, there is no indication that the size of external adjustment imbalances has been declining over time during the past seven years. On the contrary, for three of the five major industrial countries (each of which has adopted an exchange rate arrangement of "independently floating"), the maladjustments in the 1981-83 period have been as large or larger than at any other time during the past

1/ The financing of energy projects is also relevant for U.K. capital flows in the 1970s. Similarly, the increase in quasi-official borrowing also accounts for much of the rise in Italian net capital inflows since the mid-1970s. Finally, the relaxation of capital controls is relevant for explaining net capital flows in Japan, the United Kingdom, and the United States during parts of the 1970s; see SM/83/263.

2/ Williamson [1983], p. 14.

CHART 4

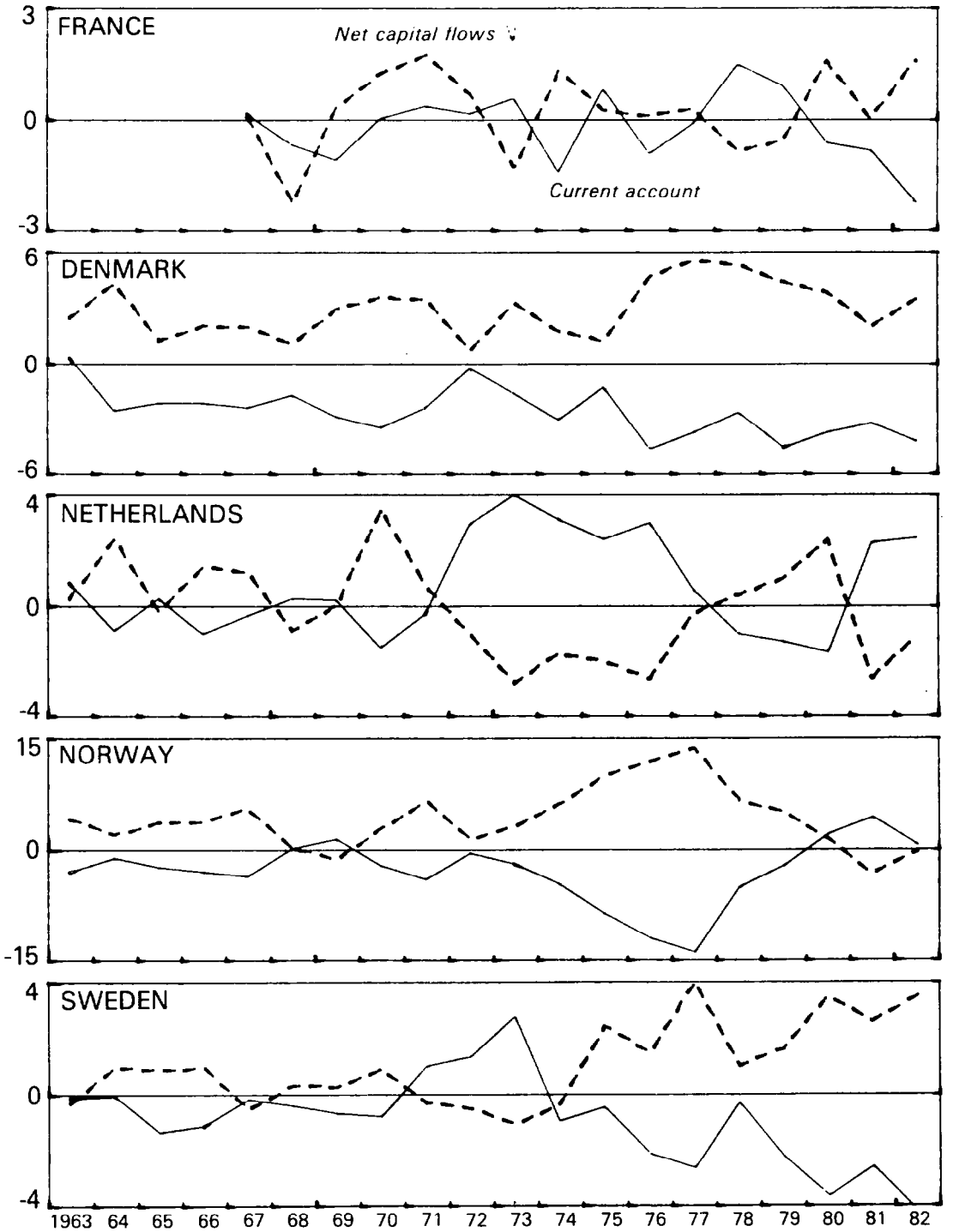
RATIO OF THE CURRENT ACCOUNT[1] AND PRIVATE NET CAPITAL FLOWS TO GNP: SELECTED INDUSTRIAL COUNTRIES, 1963-82



Sources: IMF, *International Financial Statistics* and External Adjustment Division data file.
[1]Current account includes goods, services and all current transfers, both private and official.
Net private capital flows include net errors and omissions.

CHART 4 (concluded)

RATIO OF THE CURRENT ACCOUNT[1] AND PRIVATE NET CAPITAL FLOWS TO GNP: SELECTED INDUSTRIAL COUNTRIES, 1963-82



Sources: IMF, *International Financial Statistics* and External Adjustment Division data file.
[1]Current account includes goods, services and all current transfers, both private and official.
Net private capital flows include net errors and omissions.

seven years. Second, whatever the mean degree of external payments adjustment for the floating rate period, this mean conceals substantial maladjustments, often in opposite direction, during individual one- or two-year periods (e.g., the United Kingdom in 1976 versus 1980-83, Japan in 1978 versus 1982-83, France in 1980 versus 1982-83, etc.).

The second study, or series of studies, on equilibrium payments balances was done by the Fund staff over the 1971-83 period. A brief history of the development of that methodology in the Fund (usually referred to as underlying payments balance method) is contained in the recent paper, "Issues in the Assessment of Exchange Rates of Industrial Countries in the Context of Their Economic Policies" (SM/83/263). 1/ While the approach taken by the staff to estimate equilibrium payments positions in those exercises falls within the general framework outlined here, there is one important difference. Whereas the earlier calculations in this paper have been static or backward looking, the exercises in the Fund are explicitly forward looking. Specifically, they seek to estimate the likely paths of the current account (adjusted for temporary factors) and of normal capital flows during the next two or three years, given the continuation of present exchange rates, anticipated macroeconomic policies in the subject countries, the delayed effects of past exchange rate changes, and a number of other expected future developments. 2/ In short, the aim of the staff exercises has really been to spell out the medium-term balance of payments implications of past and present exchange rates and of expected future macroeconomic policies. If those balance of payments developments are deemed unsustainable or undesirable in the sense that "underlying" current accounts are quite different from "normal" capital flows, then the normative implication is that either planned policies or present exchange rates need to change to prevent those undesirable balance of payments scenarios from taking place.

1/ In the Fund lexicon, "underlying" payments balances refer to actual payments balances adjusted for "temporary" factors, earlier exchange rate changes, desired reserve changes, and anticipated future developments (including anticipated future policies). The equilibrium payments balance can then be defined as a situation where the "underlying" current account is equal to "normal" capital flows.

2/ Two advantages of taking expected future policies into account are that it eliminates the need to estimate a "normal" cyclical position and that it brings added realism to the exercise (in the sense that private market participants clearly take expected future developments into account in assessing exchange rates).

Given the focus of this paper, perhaps the key conclusion arising from these staff exercises is that the floating rate period has been marked by many instances in which anticipated policies together with prevailing exchange rates did imply undesirable or unsustainable external payments outcomes. Table 4, taken from the recent "Exchange Rate Issues" paper (SM/83/263), provides just one representative example of such a calculation applied to the June 1983 situation. The key thing to note in that table is that the estimates of normal capital flows given in column (11) are quite different from the estimates of underlying current accounts given in columns (9) and (10). 1/ In short, without changes in macroeconomic policies and/or changes in real exchange rates, the outlook for effective external payments adjustment was not encouraging from the vantage point of June 1983.

To summarize, the record of external payments adjustment during the floating rate period has been a mixed one. From available summary indicators, there is little evidence that external adjustment has been less complete or slower under floating rates than under the adjustable peg system. In fact, the performance of the larger industrial countries appears on average to have been better in the floating rate period while that of the smaller industrial countries looks worse. At the same time, any notion that floating rates produce prompt equilibration of external payments balances can be safely discarded. When effective external adjustment does take place, it takes a number of years and there have been many instances where the discrepancy between actual and equilibrium payments balances at prevailing exchange rates was large.

(2) The process of external adjustment

Another route to assessing the adequacy of external payments adjustment under floating rates is to eschew the use of summary indicators of external adjustment in favor of an analysis of how a greater degree of exchange rate flexibility affects the process of external adjustment itself. 2/ Once again, the answers that emerge are more indirect and subjective but they are better able to isolate the independent contribution attributable to the present exchange rate system. In this subsection, the role of the exchange rate system is considered

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1/ In interpreting Table 4, it should be kept in mind that the estimates of normal capital flows, while not based on mechanical formulas, are still subject to rather wide margins of error--especially in the recent situation when there have been large changes in fiscal positions and/or significant structural changes in capital markets (e.g., liberalization of capital flows) in some of the largest industrial countries.

2/ Yet another approach to assessing the adequacy of external adjustment is to examine the incentives for adjustment; on this score, see Kafka [1976].

Table 4. Underlying Payments Balances on Current Account and Normal Capital Flows 1/

(In billions of U.S. dollars)

	Current Balance Projection 1983 (1)	Adjustment for: Temporary Disturbances 2/ (2)	Recent Relative Price Changes 3/ (3)	Changes in Relative Cyclical Positions 4/ (4)	Medium Term Tendencies 5/ (5)	Scenario I Underlying Current Balance 6/ (6)	Scenario II Underlying Current Balance 7/ (7)	Official Transfers 8/ (8)	Scenario I Underlying Current Balance Including Official Transfers 9/ (9)	Scenario II Underlying Current Balance Including Official Transfers 10/ (10)	Normal Capital Flows (11)
United States	-29.2	0.2	-17.6	-10.2	-7.8	-64.6	-69.8	-5.6	-70.2	-75.4	-5 to -10
Germany	14.1	—	4.7	0.8	-3.1	16.5	18.6	-8.9	7.6	9.7	0
Japan	24.2	-0.6	5.0	-1.6	6.4	33.4	36.1	-2.0	31.4	34.1	-5 to -10
Other industrial countries	-3.6	0.1	7.9	-0.2	3.1	7.3	7.0	-8.0	-0.7	-1.0	+10 to +20
Total industrial countries	5.5	-0.3	—	-11.2	-1.4	-7.4	-8.1	-24.5	-31.9	-32.6	-
Other countries	-90.5	0.3	—	11.2	1.4	-77.6	-76.9	24.5	-53.1	-52.4	-
Total 11/	-85.0	—	—	—	—	-85.0	-85.0	—	-85.0	-85.0	-

1/ All accounts are in constant 1983 prices.

2/ In Japan, recent import liberalization measures should increase import volumes from the second half of 1983; adjustments are required to give appropriate balances for the whole of 1983, both for Japan and for its trading partners.

3/ Estimates of the effects of changes in exchange rates and domestic price levels that occurred from 1980 through to the first semester of 1983, but are not reflected in 1983 trade flows.

4/ The effect of assumed changes in relative cyclical positions to 1986 on trade and services balances in terms of 1983 dollars.

5/ Effects over three years of estimated trend factors, including changes in fuels balances.

6/ The 1983 balances adjusted by the factors in columns (2) through (5).

7/ A further adjustment is made in column (7) for changes in relative cyclical positions which arise if prospective U.S. demand growth is assumed to be 1/2 per cent per annum higher, and prospective demand growth in Germany and Japan is assumed to be 1/2 per cent lower than in the central scenario.

8/ Includes effects over three years of estimated trend in official transfers.

9/ The sum of columns (6) and (8).

10/ The sum of columns (7) and (8).

11/ Reflects errors, omissions and asymmetries in reported statistics, plus balance with other countries including U.S.S.R. and other non-member countries of Eastern Europe. In the table, this asymmetry is assumed to remain constant at the projected 1983 level.

in relation to the following four external adjustment issues: (a) relative price movements versus income movements as adjustment mechanisms; (b) the implications of differential adjustment speeds in goods versus asset markets; (c) the symmetry of adjustment across different types of countries; and (d) rules versus discretion in adjustment.

(a) Relative price changes versus relative income movements

One of the cornerstones of the case for floating rates is that greater exchange rate flexibility permits the substitution of expenditure-switching policies for expenditure-reducing ones, with the result that the cost of external adjustment (in terms of output and employment) is reduced (especially in a context of downward price inflexibility). 1/ Implicit in this conclusion is the assumption that once a country's effective exchange rate moves in the direction required for, say, current account adjustment, the resulting relative price effects will act as a powerful aid in securing that adjustment.

While the foregoing argument is unassailable in a theoretical sense, critics of floating rates have expressed doubts about the practical efficacy of exchange rate changes as an adjustment mechanism. Those doubts have two origins, one conjectural and the other historical. The conjectural one is that the uncertainty associated with floating rates could significantly reduce the size of price elasticities for traded goods. The historical one is based on the observation that there have been several occasions during the floating rate period when sizable current account imbalances have persisted in the face of sizable exchange rate changes (in the right direction).

The price-elasticity-pessimism thesis has perhaps been put foward most clearly by Niehans [1975] and by McKinnon [1978]:

> "...consider the probable effect of flexible rates on foreign trade elasticities. It is convenient to introduce the distinction between the actual exchange rate and what, in analogy to permanent income, may be called the permanent exchange rate.... What matters for trade flows in physical units is mostly the permanent rate. Major changes in the international division of labor require new production facilities, new distribution networks, new sources of suppl, and the development of new markets. Most firms will try to avoid making such long-term decisions on the basis of exchange rates which turn out to be only temporary.... With flexible

1/ See Johnson [1961], Friedman [1953], and Meade [1956].

rates, in view of the slow adjustment of permanent rates to actual rates, this process will be even slower, and many fluctuations in actual rates will have hardly any effect on permanent rates, and thus trade flows," Niehans [1975], p. 26.

"...with the advent of floating, the future direction of exchange rate movements has proved highly uncertain.... And it may not be in the interest of merchants to engage in active arbitrage in industrial commodities if tomorrow's exchange rate in unknown. Hence, the quantitites of goods traded respond sluggishly to exchange rate fluctuations giving rise to a modern version of elasticity pesssimism...," McKinnon [1978], p. 4.

Whatever the plausibility of the Niehans-McKinnon argument, there is as yet no firm empirical support for it. A recent survey by Goldstein and Khan [1982], for example, does not find any consistent tendency for estimated price elasticities to be lower in equations estimated with 1970s data than in those based on data from earlier periods. It needs to be acknowledged, however, that the number of studies using data for the floating rate period is still relatively small, and that "composition effects" (i.e., changes in the weights of low and high elasticity goods in total exports or imports) can distort the independent effect of the exchange rate regime on these elasticities.

Turning to the historical argument, Table 5 documents perhaps the most striking of these alleged perverse episodes for the major industrial countries, namely, the 1976-78 period. Note in particular the seemingly perverse association between nominal exchange rate changes (row 7) and current account developments (rows 4-6) in the three largest industrial countries (Germany, Japan, and the United States).

There are at least three reasons why this evidence should be interpreted cautiously, however.

First, exchange rates are only one component of a country's competitive position. The other component is the behavior of traded goods prices or costs in that country relative to its competitors. That is, it is real rather than nominal exchange rate changes that matter for trade flows. Divergences from purchasing power parity have been much larger during the floating rate period than under the adjustable peg, 1/ but there have nevertheless been episodes when relative inflation rates offset much of the effect of nominal exchange rate changes on countries' competitive price positions. The 1976-78 period was one of them. As shown in rows 8-9 of Table 5, this relative inflation offset was most

1/ See Genberg [1978].

Table 5. Trade Balances, Current Accounts, Exchange Rates, Relative Prices, and Cyclical Income Movements for the Seven Largest Industrial Countries, 1976-78

	Canada	France	Germany	Italy	Japan	U.K.	U.S.
Trade balance: a/							
(1) 1976	1.8	-4.9	16.2	-4.2	9.8	-7.0	-9.5
(2) 1977	3.1	-3.3	19.6	-0.1	17.3	-3.9	-31.1
(3) 1978	4.1	0.1	24.7	2.9	25.6	-3.0	-34.0
Current account: a/,b/							
(4) 1976	-4.2	-3.4	3.9	-2.9	3.7	-1.5	4.2
(5) 1977	-4.1	-0.4	4.1	2.4	10.9	0.1	-14.5
(6) 1978	-4.3	7.1	9.2	6.2	17.5	2.2	-15.5
Percentage change, 1976-78:							
(7) Nominal effective exchange rate c/	-16.7	-7.8	13.7	-16.2	32.0	-6.0	-10.4
(8) Unadjusted relative wholesale prices d/	3.8	4.6	-9.4	18.7	-12.5	18.5	1.5
(9) Adjusted relative wholesale prices (real exchange rate) e/	-13.6	-3.5	3.1	-0.4	15.3	11.7	-9.0
Percentage change Real GNP/GDP f/							
(10) 1975	1.2	0.2	-1.6	-3.6	2.4	-1.1	-1.2
(11) 1976	5.5	5.2	5.6	5.9	5.3	3.4	5.4
(12) 1977	2.1	3.0	2.8	1.9	5.3	1.6	5.5
(13) 1978	3.6	3.7	3.5	2.7	5.1	3.9	5.0
Output gap in manufacturing g/							
(14) 1975	-8.5	-6.9	-11.1	-13.1	-22.3	-9.4	-12.3
(15) 1976	-6.2	-3.9	-5.3	-5.9	-17.2	-7.9	-6.4
(16) 1977	-7.2	-3.0	-4.2	-7.0	-15.4	-6.5	-2.7
(17) 1978	-5.0	-2.6	-4.1	-8.1	-13.1	-6.1	-0.0

Sources: IMF, World Economic Outlook (various issues); IMF International Financial Statistics, and Artus and Turner [1978].

a/ In billions of U.S. dollars.
b/ Includes goods, services, and all current transfers, both private and official.
c/ IMF MERM index. A positive figure denotes an appreciation, a negative one a depreciation.
d/ Percentage change in ratio of own to competitors' wholesale prices for manufactures. A positive figure denotes deterioration in country's position, a negative one improvement.
e/ Percentage change in ratio of own to competitors' wholesale prices for manufactures adjusted for effective exchange rates. A positive figure denotes deterioration in country's position, a negative one improvement. Since relationship is multiplicative rather than additive, numbers in two rows above will not sum to those in this row.
f/ GDP at market prices for France, Italy and U.K.
g/ Defined as potential output less actual output, as percentage of actual output. A negative figure indicates manufacturing sector is operating at less than normal capacity.

pronounced for the countries with the most abnormal inflation performance; that is, Italy and the United Kingdom on the high-inflation side, and Japan and Germany on the low-inflation side. In cases where the size of real exchange rate changes is modest, one should not expect a large relative price impact on current account outcomes.

A second factor that works against a clear association between exchange rate changes and current accounts is that relative price changes affect the volumes of imports and exports differently in the short run from in the long run. By now, there is a considerable empirical literature on relative price elasticities in international trade. 1/ This literature suggests that those elasticities are significant and reasonably from over the long run (two to three years) in most industrial countries but also that they are much smaller over the short run (up to one year). A consensus estimate would be that short-run price elasticities are only about half as large as the long-run ones. Given that the long-run elasticities themselves probably lie in the range of -0.5 to -1.0 for total imports and -1.25 to -2.5 for total exports in a "representative" industrial country, 2/ this means that the short-run trade balance response to an exchange rate change can be perverse. For example, Spitaeller [1980] shows that the short-run deterioration or improvement in the trade balance following a depreciation or appreciation, respectively, will probably last about four or five quarters and that, at its worse point, it could amount to about 8 to 10 percent of the local currency value of imports.

The third and probably most compelling reason why exchange rate changes and current account outcomes do not always move together is that relative price changes are not the only or even the most important determinant of current account movements over the short to medium run. Over a one-year period the combined income elasticities of demand for imports and exports will generally be between two and four times larger than the sum of relative price elasticities, 3/ and there are some indications that income movements would still be more powerful even after three years. 4/ Thus, if relative income movements work on trade flows in a direction opposite to that of relative price factors, there need be no close correspondence between the latter and current accounts. By all accounts, such relative cyclical developments were responsible for much of both the deterioration in the U.S. current account and the improvements in the current accounts of Germany and Japan between 1975 and 1978 that are reflected in Table 5. 5/ This is quite a common

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1/ See the recent survey by Goldstein and Khan [1982].
2/ Ibid.
3/ See Deppler and Ripley [1978], Hooper [1978], and Goldstein and Khan [1982].
4/ See the staff exercise reported in the 1978 Annual Report, p. 42.
5/ See Lawrence [1978], Wallich [1978].

phenomenon; whenever a country's growth rate (relative to its potential) exceeds that abroad, its current account usually deteriorates.

In sum, the contribution made by exchange rate changes to current account adjustment is at times hidden from the naked eye, especially over the short run; but this contribution is still important.

(b) Adjustment in goods versus asset markets

In this paper "equilibrium" payments balances, and by analogy the "equilibrium" exchange rate, have been defined in terms of a current account equal to normal capital flows (after correction for temporary factors, cyclical effects, etc.). Thus, both normal flows of goods and normal transactions in assets are included in our concept of "fundamentals." Other observers, however, often choose a different definition of "fundamentals," ranging from the current account alone, to all transactions in financial assets, to the behavior of the major determinants of such trade flows or changes in asset supplies or demand (e.g., real incomes, relative inflation rates, money supplies, interest rates, etc.). It is thus easy to understand why the adequacy of external adjustment and/or exchange rate behavior under floating rates--measured as the difference between actual outturns and that corresponding to the fundamentals--elicits so many divergent views.

Regardless of the precise definition of "fundamentals," however, there is the indisputable basic economic reality that adjustments to disturbances in goods and labor markets typically take much longer than those in financial markets. This means that prices in those financial markets (namely, interest rates and exchange rates) can be expected to bear the brunt of the short-run adjustment to unanticipated economic developments. And because these financial prices have to compensate for the stickiness of goods and labor prices, their short-run response is often much larger than the long-run one (after other prices have also moved). In now popular terminology, these financial prices "overshoot." 1/

This overshooting of exchange rates and other financial prices would not perhaps be cause for much concern if the overshooting did not last long, or if the disturbances that initiated it were solely of domestic origin, or if we could always identify the nature of those disturbances, or if the induced exchange rate changes did not have a powerful effect on the real side of the economy. Unfortunately, experience with floating rates suggests that none of these conditions is true. As noted earlier, it would seem that there have been periods of two to three years' duration under floating when the structure of payments balances and of exchange rates was out of line with fundamentals and when this

1/ For the classic theoretical presentation of overshooting, see Dornbusch [1976].

overshooting was most closely connected with developments in financial markets. 1/ The "international" aspect of the problem arises because financial markets today are so well diversified and integrated that assets denominated in different currencies are close substitutes for one another. Hence, anything that affects the current rate of return, risk factors, or the expected future rate of return in a partner country can have swift and strong repercussions on the home country's asset prices, including its exchange rate. Further, while in some cases it is easy to locate the source of the overshooting disturbance in terms of large shifts in the stance of monetary or fiscal policy, in other cases it is not, with exchange rates continuing to move out of line after real interest rate differentials have stabilized or after the current account has begun to move in the opposite direction. Last, it has to be recalled that although the exchange rate is often viewed as an asset price (i.e., the relative price of two monies), it also is a key component of the relative price of national outputs; for this reason, it will have strong effects on the demand and supply for traded goods, and hence on employment in traded goods industries. This fact is often brought home most vividly after the implementation of a program of monetary restraint. In the initial stages, the effects of the resultant increase in real interest rates on economic activity outweigh the relative price effects of exchange rate appreciation and produce an improvement in the current account. Later on, however, while the capital account continues to be aided by the high real interest rate, the current account deteriorates as the adverse relative price effects of a higher real exchange rate take their toll on the country's trade flows.

Having noted the seriousness of the overshooting problem, it is equally relevant to point out that the solution may not lie in pegging of exchange rates for at least two reasons. One is that such an action may just transfer disturbances from the exchange market to goods and labor markets at even greater social cost. 2/ In this respect, at least one advantage of the exchange market is that insurance against unforeseen (short-term) fluctuations can be purchased through forward contracts. And because prices are sticky in goods and labor markets, a consequence of shifting more of the adjustment to those markets is that real output and employment may suffer more. The second reason is that pegged rates can give rise to their own brand of overshooting. Machlup [1979] makes this point as follows:

1/ For an identification and discussion of these cases, see the staff study on "International Aspects of Policies of Monetary Restraint," SM/81/210.

2/ See Frenkel and Mussa [1980].

"The economists who blame particular appreciations and depreciations of currencies on 'overshooting in a regime of floating rates' forget that the discrete and deliberate adjustments of fixed or pegged exchange rates, especially the official devaluations, usually involve much wider overshooting. If a currency had long been overvalued by its fixed parity, and the authorities at last decided on a devaluation, they regularly chose a new parity which undervalued the currency at current levels of prices. Among the justifications for such 'excessive' devaluations was usually the argument that the monetary reserves, depleted in the period of overvaluation, had to be replenished in the subsequent period of undervaluation. No one was ever ashamed of such overshooting in the official adjustment of the official par value; yet the same observers blame the system of managed floating for allowing the market to overshoot the 'right' exchange rate. What used to be the rule for devaluations is now regarded as disorderly in depreciations," p. 76.

(c) Symmetry of adjustment

As is well-known, the Bretton Woods period was marked by frequently and strongly expressed concerns on the part of some countries over the alleged lack of symmetry in external adjustment. Two types of asymmetry were most discussed. 1/ First, there was the charge that surplus countries were subject to a much weaker discipline than deficit countries. Second, there were complaints about the "special role" of reserve centers, especially of the United States. To the Europeans, this special role constituted an unwarranted privilege since the United States alone could finance payments deficits by liability as opposed to asset settlement. 2/ On the other hand, to the United States the special role of the dollar as numeraire of the system came to be seen as a burden because it precluded the initiation of exchange rate action as an adjustment mechanism. What can be said about the validity of these allegations and about their subsequent existence under managed floating?

1/ For a summary of these discussions, see Cumby [1982].

2/ The role of the dollar as the primary reserve asset also gave rise to the debate about whether the U.S. payments deficit in the 1960s was "supply determined" or "demand determined."

The proposition that balance of payments deficits prompted stronger adjustment measures than comparable surpluses under the adjustable peg system is supported in what is probably the most thorough study of the issue. Specifically, after studying balance of payments developments in nine industrial countries over the 1950-66 period, Michaely [1971] concludes:

> "Countries whose monetary policy generally responds to changes in the balance of payments tend to make exceptions to this pattern of behavior mainly when they are in surplus. Similarly, compliance of monetary policy with balance of payments requirements in generally non-complying countries tends to be found at times of deficit. ...The loss of reserves is viewed with concern; but their accumulation...is viewed, in fact, with satisfaction or indifference," (pp. 63-64).

The 1970 Report by the Executive Directors on The Role of Exchange Rates in the Adjustment of International Payments similarly suggests that adjustment pressures on deficit countries were stronger than those on surplus countries during the 1950s and 1960s since "...reserve accumulation is not subject to limit in the same way as exhaustion of reserves or of borrowing facilities." 1/ Likewise, the figures on mean external imbalances for the larger industrial countries, shown in Tables 2 and 3, also point in the same direction: if the United States is excluded because of its special position, the countries with the largest mean imbalances and with the most persistence in those imbalances over the Bretton Woods period seemed to be surplus countries.

The fact that payments imbalances and real exchange movements have both been more variable under floating than before, and the probability that nominal exchange rate appreciations are harder to sterilize under floating than reserve increases were under the adjustable peg, have seemingly combined to reduce such surplus/deficit asymmetries. Again, Tables 2 and 3 suggest that there has been no obvious pattern to mean payments imbalances along surplus/deficit lines.

In the case of asymmetries associated with the special role of the United States, the extent of asymmetry appears to have been reduced during the floating rate period. The diversification of official reserve holdings away from the dollar toward other currencies (principally the deutsche mark and the yen) and, most important, the spread of liability settlement of external imbalances to even non-reserve currency countries, have served to reduce the special privileges of the dollar. 2/ But by

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1/ See IMF [1970], p. 38.

2/ It is perhaps ironic that the greater symmetry of adjustment sought by the Committee of Twenty seems to have been aided not by imposing "asset settlement" on reserve centers but rather by extending the unwarranted privilege of "liability settlement" to many non-reserve-center countries.

the same token, any special burdens would also seem to have dissipated, with the abandonment of dollar convertibility into gold in 1971 and with the sharp increase in the variability of the real effective exchange rate of the dollar over the 1973-83 period.

To summarize, the degree of external payments adjustment under managed floating may not be as swift or as predictable as one would want, but it is hard to attribute any shortcomings to systematic asymmetries a ross classes or types of countries.

(d) Rules versus discretion in adjustment

Yet another frequently heard criticism of the present exchange rate system is that it relies too much on discretionary policy actions by country authorities to secure external adjustment. The implication is that a more "automatic" system that relied on more specific rules would yield a better result. Further, there is a related criticism that both external adjustment and exchange rate stability would be enhanced if there was a more formal and more explicit mechanism for "coordination" of economic policies across countries. What can be said about these two criticisms?

To begin with, it is sensible to acknowledge that if one were to align alternative exchange rate systems along a spectrum according to either the degree of automatism of the adjustment process or the mix betweeen rules and discretion in initiating adjustment, the results would suggest that the present system is closer to the complete discretion pole than to the rules-only pole. In this sense, the pure gold standard with its automatic specie flow mechanism, the adjustable peg system with its clear implications for the subordination of domestic monetary policy to the exchange rate except during "fundamental disequilibrium," the objective indicator system (based, say, on reserve levels) with its automatic trigger for the initiation of adjustment actions, mechanistic crawling peg schemes with their automatic adjustment of the exchange rate, or even a pure floating system with its complete prohibition on all official intervention in the exchange market--could all be considered less discretionary than the present system. In much the same way, it can readily be agreed that efforts at coordination of economic policies during the floating rate period represent at most a "middle ground" along a hypothetical spectrum between completely activist and completely passive coordination strategies. 1/ In this context, efforts have gone beyond the exchange of forecasts and policy intentions to encompass: occasional common actions (e.g., the dollar support package

1/ Following Polak [1981], coordination may be thought of here as including all international influences on domestic economic decision-making.

of November 1, 1978, the setting of explicit targets for energy conservation efforts within the IEA); agreements on short-term exchange rate management policies (e.g., intermittent joint countering of "disorderly market conditions"); sometime agreement on medium-term expenditure and/or energy policies (e.g., the final agreements of the Bonn economic summit of 1978); and most recently, the extension of IMF surveillance to a multilateral G-5 format. 1/ At the same time, coordination efforts have stopped well short of binding agreements on either exchange rate targets or rates of monetary expansion. For want of a better label, the present system might therefore be characterized as a discretionary, decentralized system with loose coordination among the main players, but with tighter coordination and disaster relief during crises.

Although the issues of rules versus discretion and of the optimal coordination of policies are still ones of little agreement, past experience would seem to point to the following four conclusions.

First, whatever the combination of rules and discretion, a prerequisite for successful external adjustment is the pursuit of stable, credible, and balanced macroeconomic policies at the national level. Without such policy behavior, the greater autonomy of policy instruments in more discretion-based systems will not produce greater policy effectiveness, and similarly without it, the policy rules in more rules-based or automatic systems will not be observed. This is undoubtedly what led Frenkel [1983] to conclude:

> "If governments were willing to follow policies that are consistent with the maintenance of a gold standard, then the gold standard itself would not be necessary; if, however, governments are not willing to follow such policies, then the introduction of the gold standard per se will not restore stability, as before long the standard will have to be abandoned," p. 112.

That is, the need for good policy is not diminished by the presence or absence of automatic adjustment rules. This lesson is especially pertinent to countries that have adopted "independently floating" exchange arrangements. For two clear implications of the asset market view of exchange rates are: (i) that the current exchange rate will be much influenced by the expected future exchange rate; and (ii) that the expected future rate will be much influenced by expected future macroeconomic policies. Since instability in present policies generates

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1/ See Dreyer [1982], Solomon [1982], and Polak [1981] for accounts of coordination measures taken during the floating rate period and before.

uncertainty about future policies, it is easy to see why stable and credible policies are a sine qua non for greater stability in exchange rates. Indeed, one of the main reasons why the adjustment process has not worked better under floating rates is because market participants have undoubtedly had difficulty in finding a good anchor for longer-term exchange rate expectations. The harder it is to make an informed judgment about the future course of policies, the more one can expect the erroneous extrapolation of short-term events. By the same token, a country that has established a credible long-term policy posture can count on the market to be more forgiving of short-term deviations because such deviations do not materially affect the long-term anchor. All of this is consistent with the conclusion of the Versailles economic summit meeting of 1982 that the maintenance of the internal and external values of currencies "rests primarily on convergence of policies designed to achieve lower inflation, higher-employment, and renewed economic growth." 1/

A second conclusion is that, whatever the mix between rules and discretion, effective external adjustment will not be forthcoming unless countries take into account the external repercussions of their own macroeconomic policy actions on their trading partners. 2/ The notion that under floating rates each country can decide independently its own policy stance and mix and let the exchange rate settle all conflicts in the market place is neither realistic nor helpful. It is not realistic because, as argued earlier, floating rates are not capable of providing enough insulation from other countries' policy actions to make independent targeting work. It is not helpful because failure to take account of other countries' policies is likely to induce over time retaliatory actions by those who are unhappy with the verdict of the market. In the end, therefore, the path to external adjustment will be slower and the eventual equilibrium less satisfactory than if some coordination of policies took place.

1/ See EBD/82/136. The recent Report by a Commonwealth Study Group on Challenges for the World Financial and Trading System (i.e., Helleiner et al. [1983]) also places strong emphasis on better coordination of national macroeconomic policies among the major industrial countries for promoting smooth and equitable adjustment to international payments imbalances; e.g., see p. 31.

2/ Although international coordination of policies is often associated with coordination of monetary policies, developments of the past few years stand as testimony to the international "externalities" of unstable and uncoordinated fiscal policies.

But taking external repercussions "into account" in setting domestic policies is not the same thing as being dominated by external considerations. It is unlikely, at least for the larger industrial countries, that a fully centralized coordinated decision-making system would be either realistic or helpful. It would not be realistic because even with the recent narrowing of inflation differentials among the largest industrial countries, it is unlikely that these countries would be willing to fully subordinate domestic policy, particularly monetary policy, to the goal of a fixed exchange rate. It would not be helpful because such an assignment rule would leave internal balance to be handled by market forces, or fiscal policy, or incomes policies. It seems wiser to continue to focus monetary policy on the still formidable task of achieving long-run price stability and sustainable growth.

What all this suggests for external adjustment during the floating rate period is that such adjustment would have been smoother, and exchange rate behavior less variable, if there had been a more intensive and more regular effort to appraise the consistency of countries' intended economic policies at then prevailing exchange rates and, if, when such inconsistencies arose, there was some more compromise at the margin by all parties to reduce them.

The difficulties of achieving such improved coordination should not, however, be underestimated. In this respect, Polak [1981] has pointed out the natural limits to coordination, and even the benefits of decentralized decision making (via the market) in those cases when negotiation is unsuccessful. He notes that coordination can be difficult because, inter alia: (i) exchange rates (and often interest rates) are by their nature "competitive" in the sense that one country's gain is frequently the other's loss; (ii) that the compromise of growth and inflation objectives at the national level often leaves little room for further compromise on demand policies at the international level; and (iii) that international decision making on floating rates is inherently more difficult than for (infrequent) par value changes. In a similar vein, Solomon [1982], commenting on the problems of securing monetary coordination in past economic summits, mentions: (i) that the perception of independent monetary policy may be necessary in some countries for sustaining confidence that monetary policy will not be inflationary in the long run; (ii) that the approach to formulating and conducting monetary policy differs a lot across countries; and (iii) that there is a logically prior need to coordinate domestic monetary policy with domestic fiscal policy.

But all these barriers to greater coordination of policies do not mean that efforts should not continue to be made to improve the situation. Volcker [1977] lends support to this position:

> "Questions of the policy mix and timing are not rigid and preordained in any of our countries. I would like to

> think the time has come to be a little more open in putting those kinds of issues on this and other tables as part of the processes of comprehension and consultation. It seems to me a necessary part of running the floating rate system as effectively as I think it can be--and should be--run," p. 36.

The third conclusion on rules versus discretion in adjustment is that automatic adjustment systems usually turn out to be less automatic in practice than in theory, and that very specific adjustment or exchange rate rules run the risk of becoming liabilities when the global environment changes in unexpected ways. The first point about automatic adjustment is best illustrated by the historical gold standard. Its specie flow mechanism is often held up as the "ideal" in automatic adjustment. But serious students of that historical gold standard seem to be in agreement that internal balance considerations sometimes caused country authorities to "offset" or to "sterilize" the effects of gold flows. Cooper [1982], p. 28, for example, notes that: "offsetting actions by central banks, in periods of contraction as well as periods of expansion, even took place often in the heyday of the historical gold standard." Similarly, in describing the 1914-21 period in the United States, the Report of the Gold Commission [1982], p. 67, states that: "the postwar increase in the quantity of money occurred because the Federal Reserve System did not observe the rules of the gold standard but exercised discretion. The subsequent collapse occurred because the power to manage money was not limited by the requirement to maintain gold reserve requirements."

The perils of very specific adjustment rules can be seen by reference to a number of past systems or proposals. Perhaps the best example is the Bretton Woods system. As noted by Polak [1981], the Bretton Woods rules of the game were written so as to place all exchange rate changes under strict international supervision. By so doing, the danger of renewed competitive exchange alterations was minimized. This was just what the doctor ordered in the early years of Bretton Woods; but during the late 1960s and early 1970s, these same rules became a liability when the need arose for a greater degree of exchange flexibility. Another example is that in the 1960s the idea of a "crawling peg" based on inflation differentials seemed like the right antidode for sticky exchange rates and for inefficiencies in central management of exchange rates. But after the plethora of real economic disturbances in the 1970s, that proposal's neglect of the need for real exchange rate adjustment now seems like a serious drawback. To some extent, even the objective indicator proposal (based on reserves) considered by the Committee of Twenty appears outmoded in a world in which reserves are more demand than supply determined. In short, the moral would seem to be that limitations on the ability to forecast the future global economic environment put constraints on the usefulness of very specific adjustment rules--even if countries could be convinced to strictly obey those rules.

In summation, although the present exchange rate system relies more on discretion in initiating adjustment measures than do some alternative systems, there is little to suggest that performance would have been better over the past ten years if adjustment rules were used instead. A more promising avenue would be to try to achieve a better anchor for longer-term exchange rate expectations by inducing countries both to pursue more stable and credible macroeconomic policies and, in framing these policies, to take more explicit account of their repercussions on other countries.

c. Floating rates and world trade and investment

In 1963-72 the average annual increase in the volume of world trade was 8 1/2 percent. During the decade of floating rates (1973-82), world trade growth slowed to less than half that figure (4.1 percent) and it was absolutely stagnant during 1980-82. Also, the steady postwar momentum toward trade liberalization, marked by successive rounds of multilateral trade negotiations (the Dillon Round in 1960-61, the Kennedy Round in 1964-67, and the Tokyo Round in 1973-79) and by the formation of free trade areas in Europe (the EEC and EFTA), had by end-1979 come to a full stop. Indeed, despite repeated commitments at successive economic summit meetings to the goal of maintaining a free and open trading system, the last three years have witnessed an increase in both pressures for protectionism and in restrictive trade measures themselves:

> "Protectionist pressures and protective actions that were taken or intensified since the conclusion of the Tokyo Round affect sectors accounting for more than one fifth of world trade in manufactures, including iron and steel, automobiles, textiles, and clothing. In addition, industrial countries apply restrictions at the border or use other measures that affect or distort trade in temperate zone agricultural products accounting for one third of international trade in agriculture, including sugar." 1/

> "However, only three years after the conclusion of the Tokyo Round, the pressures for protectionism are high and, in the opinion of some, higher than at any other time in the postwar period." 2/

Against this disappointing recent background of trade and protectionism, and given the aforementioned increase in the variability of both nominal and real exchange rates during the floating rate period, it is not surprising that there has been renewed concern about the

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1/ Anjaria et al. [1982], p. 2.
2/ Bergsten and Cline [1982], p. 2.

possible adverse effects of exchange rate variablity on world trade and investment.

The basic thesis is simple enough and has not changed much in 40 years: 1/ it is that most exchange rate fluctuations under floating rates will be unexpected, and that such an increase in exchange rate uncertainty to risk-averse suppliers and purchasers will (ceteris paribus) reduce the volume of trade, and perhaps also increase the price of traded goods. 2/ But this direct effect is by no means the only avenue or channel by which exchange rate fluctuations can affect trade and investment. Other indirect, but nevertheless important effects, can take place as exchange rate fluctuations induce producers and traders to alter the structure of their output (traded versus nontraded goods) or their investment (diversified versus less diversified) in order to reduce their overall risk. 3/ 4/ In addition, exchange rate fluctuations could induce a variety of adjustment costs if producers and workers do shift resources between economic activities in response to what later turn out to be temporary relative price signals. 5/ Finally, if transitory or "excessive" movements in exchange rates are perceived as being a primary cause of the decline of certain export or import-competing industries, they can generate pressures for protectionism that, if successful, often prove difficult to eliminate, even if exchange rates move in the opposite direction.

1/ For example, in discussing why freely fluctuating exchange rates would be undesirable, Nurkse [1945], pp. 5-6, states: "For one thing, they create considerable exchange risks, which tend to discourage international trade." Likewise, in assessing freely floating exchange rates, the 1970 report by Executive Directors on The Role of Exchange Rates in the Adjustment of International Payments argues: "the fluctuations in exchange rates that occurred, and the absence of any limits on the scope for potential fluctuations, would involve damaging uncertainties for international trade." p. 42.

2/ The volume effect is unambiguous because the induced backward shifts in the supply curve and the demand curve each reduce the volume of trade. However, the price effects of increased uncertainty could in principle go in either direction; see, for example, Hooper and Kohlhagen [1978].

3/ For example, if relative price uncertainty is a major factor in decisions on resource allocation, increased exchange rate uncertainty could result in a gradual shift away from traded goods industries (which are more exposed to such uncertainty stemming from exchange rate fluctuations) and toward nontraded goods in the service and other sectors.

4/ A multinational firm, in deciding where to locate new investment, needs to be aware not only of technical factors affecting cost but also of uncertainties of currency relationships. This can lead to a diversification of investment, even at some cost in terms of efficiency, in order to minimize risks arising from currency instability.

5/ See pp. 29-31.

Identifying channels by which exchange rate uncertainty might affect the volume, prices, or structure of world trade and investment is not, however the same thing as finding good evidence in support of these effects. An evaluation of issues relating to the implications of exchange rate uncertainty for world trade--including an assessment of existing empirical evidence and the presentation of some new evidence--is contained in the recent staff study, "Exchange Rate Volatility and World Trade" (SM/83/203).

The findings of this staff study can be summarized as follows.

First, the primary determinant of the growth in the volume of world trade is the growth in world real output. Specifically, each 1 percent change in the growth of world real output was associated over the 1959-82 period with approximately a 2 percent change in the volume of world trade in the same direction; see Appendix Table 4, taken from SM/83/203. This suggests that the major factor underlying the slower average growth rate in world trade during 1973-82, as well as the standstill of trade in 1980-82, was the slower growth in world real economic activity during those periods. 1/ This finding applies not only to world trade but also to the trade of important country groups (e.g., OECD real imports), to bilateral as well as aggregate trade relationships, to other time periods, and to other empirical studies (e.g., Bergsten and Cline [1982], Blackhurst and Tumlir [1978], Anjaria et al. [1982], etc.).

Second, once the influences of real output and relative traded goods prices on trade flows are accounted for, there is little econometric evidence that exchange rate variability has had a statistically significant negative independent impact on the volume of trade. 2/ Again, the results appear to be quite robust, applying both to aggregate trade flows over time, to individual country trade flows over time, to trade patterns across countries at a given point of time, and to real as well as nominal exchange rates. Thus, even though both exchange rate variability and exchange rate uncertainty have clearly increased in moving from the adjustable peg system to managed floating, any independent adverse effects of this increased variability and uncertainty on trade volumes

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1/ Between 1963-73 world output (excluding construction and services) rose by 6 percent annually versus 3 percent for 1974-80, 1 percent in 1981, and 0 percent for 1982.

2/ Exceptions to this general conclusion can be found in the econometric studies by Coes [1981], Cushman [1983], and Thursby and Thursby [1981]. However SM/83/203 suggests (p. 57) that these studies establish an empirical link between exchange rate variability and trade volumes only subject to particular conditions.

have thus far eluded conventional trade equations. However, as pointed out in SM/83/203: 1/

> "The failure to establish a statistically significant link between exchange rate variability and trade does not, of course, prove that a causal link does not exist. It may well be that the measures of variability used are inadequate measures of uncertainty; that other factors overwhelm the impact of variability in the estimating equations; or that the presence of statistical problems... interferes with the effectiveness of statistical tests. It may also be the case that the lags with which greater variability in the exchange rate regime affect trade flows are longer and more variable than imagined by previous investigators," p. 57.

Third, the evidence from surveys of participants in international trade points in the same direction; 2/ that is, it suggests that exchange rate uncertainties have not had an important impact on either the volume or cost of international trade or investment, at least relative to other sources of instability in the system. Again, however, SM/83/203 cautions that such evidence has to be interpreted with care because the samples in these surveys are generally small, because they cover predominantly large diversified firms who are perhaps better able to cope with exchange rate variability than smaller firms, and because some respondents may have been implicitly assuming that pegged rates would have been just as unstable. Also, it is worth observing that the same surveys usually showed that firms had taken some specific actions to cope with the risks created by greater currency volatility, including, inter alia, creation of new departments to monitor foreign exchange exposure, allocation of more of senior management's time to exchange exposure decisions, greater use of forward cover, more systematic distribution of liquid assets among different currencies, diversification of production sources, increased sharing of the exchange risk in currency invoicing, etc. In this connection, de Lattre [1983] has also documented how the development of interbank markets and of various "futures" markets (e.g., the International Money Market created by the Chicago Mercantile Exchange, the New York Futures Exchange, the London International Financial Futures Exchange, etc.) have made forward cover management substantially easier for enterprises. Similarly, he shows that the buoyancy of long-term investments under floating has been aided by the more intensive use of various techniques (e.g., parallel loans, swap arrangements,

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1/ It should also be kept in mind that SM/83/203 (Revision 1) does not address the question of "...whether or not prolonged shifts in underlying conditions that cause sustained departures from some medium-term trend in exchange rate relationships are harmful for trade," p. 59.

2/ The surveys covered in SM/83/203 include: Fieleke [1971], Duerr [1977], Blin et al. [1981], and Group of Thirty [1980].

simulated dollar loans, etc.) for covering longer-term exchange risk. All of this suggests that even if increased exchange rate uncertainty has not retarded firms from engaging in foreign trade and investment, and even if they have not passed on any increased hedging costs to consumers, it has changed rather significantly the ways in which firms conduct business.

Fourth, indirect effects of exchange rate variability on the structure of domestic output, and thereby on the level and pattern of international trade, are extremely difficult to trace. Exchange rate uncertainty is usually only one consideration among many others in each individual decision to invest at home or abroad, expand output, merge with another enterprise, and so on. Consistent with this proposition, the data do not reveal any obvious association between exchange rate variability and either the trend rate at which resources are being shifted from traded to nontraded sectors, or international concentration in export production, or in the rate of real nonresidential gross fixed capital formation (relative to GNP). 1/ It is not clear whether the continuing trend toward larger firms and to increased international investment represents a rational reaction to increased uncertainty about relative factor and product prices in different markets, or instead a longer-run tendency (stretching back before floating) attributable to the effects of greater international integration of markets and to the impact of technological progress on the nature of production processes. Similarly, the failure of the volume of business fixed investment (relative to GDP) to decline during the floating rate period as a whole in the face of presumably greater uncertainty may indicate that uncertainty effects were outweighed by the need to invest more heavily in energy exploration and conservation (following upon the larger rise in the relative price of energy). Existing analysis does not permit one to go much beyond that.

Fifth and last, the argument that prolonged deviation of actual from equilibrium exchange rates generates protectionist pressures is certainly plausible but there are too many "other" forces at work to accept an unequivocal relationship between exchange rates and the stance of trade policy. For example, many of the current protectionist measures have been sector or country specific rather than across the board, and have been influenced by long lasting shifts in competitiveness arising from factors other than exchange rate shifts. Such a case is clothing and textiles where restrictions have been directed against developing countries with a comparative cost advantage in this sector, and where these restrictions have become progressively more severe over a quarter of a century almost irrespective of changes in the exchange regime or of the degree of exchange rate variability. Another example is protection of the agricultural sector which is fairly entrenched in most

1/ At the same time, SM/83/203 did find some suggestive evidence that the variance or volatility of resource shifts in and out of the foreign sector was greater in 1974-82 than in 1960-70.

industrial countries and which is motivated to a significant extent by sociopolitical reasons. Here, it is hard to relate the high and, some observers would argue, increasing level of protection over the past two decades to particular exchange rate movements among the major currencies. Yet another counter-example to the exchange rate protection thesis is the steel sector. The restrictiveness of trade policy in this sector has been increasing in the United States and the European Community since the mid-1970s, notwithstanding the exchange rate fluctuations experienced by their currencies over this period. Trade policies in high technology industries (where strategic consideration seems to dominate debate) and in the automobile sector (where the energy crisis drastically shifted the preference for small fuel-efficient cars at the expense of U.S. automakers) also do not quite fit the mold. 1/ De Lattre [1983] has put these points in somewhat broader perspective:

> "The second factor is of a structural nature and its effects would have been felt just as well under a fixed rate regime. It is the technological evolution of many industries and the new international division of labor. The phasing out of low productivity coal, the relative decline of the steel industry throughout the world, the redistribution of textile production among new and old industrialized countries, even the need for major productivity gains in such industries as automobiles are some of the illustrations of this difficult adjustment. They in turn are the cause of increased instability, mounting unemployment, regional and sectorial problems, etc. which have nothing to do with the use of floating rates," p. 13.

None of this should be taken to imply that exchange rate factors are unimportant in the generation of protectionist pressures; rather, it suggests that the pressures, and the extent to which authorities yield to them, depend on a host of factors in addition to exchange rates. Cline and Bergsten [1982] have recently given some specificity to this point by outlining the features of a general model of protection. In their model, the degree of pressure for new trade restrictions will be greater, inter alia: the higher is the aggregate unemployment rate in the host country, the larger is the increase in unemployment over the recent period, the smaller and less generous are existing trade adjustment programs, the higher the degree of economic interdependence (proxied by the ratio of imports to GNP in the host country), the higher is the ratio of imports to consumption and the larger is employment

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1/ In addition, there are examples of moves toward trade liberalization being introduced in the face of large exchange rate variability (e.g., the Tokyo Round of multilateral trade negotiations in 1973-79 and the later stages of the Generalized System of Preference which was phased in by the industrial countries from 1966-76).

in import-competing industries, the higher the level of general government intervention in the host country, the higher the degree of overvaluation of the host country's exchange rate, the higher the extent of trade restrictions maintained by major foreign countries, and the greater are negative perceptions of the GATT machinery for resolving trade disputes. On the other side of the coin, Cline and Bergsten [1983] expect the pressures for new trade liberalization to be greater, inter alia, the higher is the existing inflation rate, the higher is the economy-wide ratio of exports to GNP, and the greater is the perception of the GATT system to handle trade policy problems effectively. Of course, the major obstacle to actually estimating such a model is developing an index of protection to serve as the dependent variable. Nevertheless, just the specification of such a model is sufficient to demonstrate how hard it is to separate exchange rate influences from other influences on protection.

To summarize, it cannot be doubted that an increase in uncertainty in such a key price as the exchange rate is of major consequence for the conduct of international trade and investment. This is not the same thing, however, as saying that floating rates act as a strong deterrent to trade and investment. This latter statement needs to be modified to recognize that exchange rate variability is only one dimension of the total uncertainty associated with international transactions, that exchange rate changes often reflect uncertainty in their basic underlying determinants, and--perhaps most important--that firms and individuals can and apparently do resort to a wide variety of methods to reduce the impact of exchange rate uncertainty on their operations. By and large, existing empirical work suggests that if exchange rate variability does adversely affect international trade and investment, it does so in a manner that is too subtle and indirect to be captured in conventional trade volume equations alone. On the important issue of protectionism, volatility and longerterm disequilibria in exchange rates represent just one more misguided rationale for seeking and/or granting protection. Until more is known about the determinants of actual protection, one cannot adequately assess the independent role played by exchange rates in that politicaleconomic process. It is not too early, however, to conclude that where and when protection is used to offset exchange rate movements, the results are sure to be detrimental to the international adjustment process: resource allocation will suffer, needed structural changes in the economy will be delayed, retaliation by other countries will be encouraged, and an inappropriate pattern of exchange rates will be perpetuated.

d. The adaptability of floating rates

Ten years is probably too short a period of time to proclaim any system as "adaptable" or "robust." For example, the international gold standard operated from the 1870s to 1914 and then was briefly revived in the late 1920s. Britain, however, was on a legal gold standard from

1816 and on a de facto one from 1717. 1/ Even managed floating's immediate predecessor, the adjustable peg system, lasted about 25 years. By the standards of past exchange rate systems, floating is of relatively recent vintage and its capacity to adapt has not been fully tested.

Nevertheless, given the events of the past decade, it is hard not to be impressed by the resiliency of the present system. Two major changes in the price of energy products and the associated large changes in current account positions, a number of important bank failures, many changes in economic policy strategies in industrial countries, significant new natural resource discoveries, several serious regional conflicts, and sometimes large intercountry differences in inflation rates, in monetary policies, and in policy mixes--have been accommodated without either suspending the operation of exchange markets or implementing widescale restrictions on trade and capital flows. Indeed, in such an environment managed floating may well have been the only system that could have functioned continuously.

On a less general level, there would seem to be at least four factors behind the present system's relatively high adaptability or resiliency.

First, because the present codes of conduct (i.e., the Articles of Agreement) permit members to have a wide choice of exchange arrangements, it is possible to accommodate different national preferences with respect to flexibility of exchange rates and to the mix of domestic economic policies. That is, those countries for which the benefits of a fixed exchange rate are viewed as far outweighing the costs can opt for pegged arrangements, whereas those who feel that exchange rate flexibility is an indispensible policy instrument can opt for floating. In between, there is room for adjustable pegs as in the European Monetary System and for heavier and more frequent exchange market intervention within the "independently floating" classification. While this may be an inferior situation to one where all countries could agree on the appropriate degrees of exchange rate flexibility and of economic policy convergence and would act on those common agreements, it is likely to be superior to a situation where such strong differences in view exist yet one degree of flexibility and convergence is imposed on all participants. In this connection, one probable reason for the viability of the European Monetary System is that, even given the joint political commitment to its success, its architects foresaw the need to accommodate some intercountry differences (e.g., wider margins for the Italian lira and special financial measures for the less prosperous members). By the same token, the Bretton Woods system operated successfully while there was a common view about the assignment of responsibilities for adjustment and for exchange rate action as between the reserve center country (i.e., the United States) and the others, but broke down when such agreement was no longer forthcoming.

1/ See Cooper [1982], p. 3.

A second related reason for the present system's viability is that it permits decentralized "market-based" decisions to act as a safety valve when more centralized decisions about adjustment responsibilities and exchange rate alignments do not prove possible. Again, this probably represents a second-best solution to one where countries could always coordinate policies successfully and where reliance on the sometimes short sighted and sometimes narrow view of the market was not required. But the fact that the market is there to at least "take a view" precludes the need to convene a series of Smithsonian meetings when conflicts inevitably arise. 1/ Also, at least over the long run, it is by no means clear that the market is a poorer evaluation of the right pattern of rates than are country authorities.

Third, the present system provides enough "flex" in exchange rates to avoid what was perhaps the fatal flaw in the Bretton Woods system, namely, the incompatability of fixed exchange rates and narrow margins with high international mobility of capital. Given the fact that the financial resources available to private market participants are always much greater than those of central banks, and given the rapidity with which the market view on a given exchange rate can change, any system that places stringent limits on short-run exchange rate movements is susceptible to successful speculative attack. This is why some observers doubt the feasibility of re-establishing an adjustable peg system. 2/ Williamson [1979], for example, argues:

> "...the fundamental development that has undermined the flexibility of the adjustable peg is the growth of capital mobility. Since that growth is most unlikely to be reversed ...monetary reformers should draw the conclusion that, whatever other exchange-rate regime they may recommend in particular situations (fixed rates, a crawling peg, a managed float, or a free float), the adjustable peg is not a viable option now or for the future," p. 26.

Of course, that same "flex" in exchange rates that provides a defense against "hot money" and that increases the riskiness of "one way bets" by speculators can become a liability if exchange rate movements go

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1/ Kenen [1979] makes this same point: "In the flexible rate system we have found a device for achieving exchange rate changes without raising them to the highest level of public policy both domestic and international," p. 163.

2/ On this point, De Vries [1980] makes a distinction between the Bretton Woods type of adjustable peg system (under which exchange rates were changed infrequently and by large amounts) and the adjustable peg system (the snake) operated by some European countries in 1972-78 (under which exchange rates were adjusted frequently and in small amounts). He considers the former but not the latter to be incompatible with high international mobility of capital.

far beyond fundamentals. In other words, the viability of the system is enchanced but not without cost.

A fourth factor important for the resiliency of the present system is that the move toward greater use of exchange rates in the adjustment process has not been accompanied by the atrophy of the global "financing" mechanism, either official or private. Given the shocks to the system in the 1970s, the combination of exchange rate movements and expenditure-reducing policies could not alone have produced an acceptable solution; financing was absolutely necessary to achieve an economically optimal and politically acceptable speed of adjustment. This feature of the present system was most dramatically illustrated by the recycling of oil revenues but there are many other examples, including some where official financing was critical (e.g., recent IMF and BIS loans to major borrowers among the developing countries). Again, however, the reduction of one type of risk increased others. In this case, the same expanded role of commercial bank lending in balance of payments financing that proved so useful in the oil crisis posed new risks to the system later on when that lending did not take adequate account of the changed circumstances (i.e., slower growth in export markets, weaker terms of trade, much higher real interest rates) of some major borrowers.

In summary, it is going too far to say that the present system is absolutely immune to collapse. Nevertheless, because the present exchange rate system essentially rose directly from the ashes of its predecessor, it carries with it various "escape valves" (principally, more flexibility in exchange rates and more decentralized decision making) that make it less vulnerable to the same problems that plagued its predecessor (albeit at the cost of creating some new ones). Relative to the Bretton Woods system, the present exchange rate system is more heterogenous, more flexible, more pluralistic, more market oriented and (slightly) more forgiving of idiosyncratic policy behavior. None of these characteristics would necessarily be desirable in an ideal world of consistently disciplined and coordinated macroeconomic policies, of rapidly stabilizing private speculation, and of perfect foresight. But in the imperfect real world in which exchange rate systems have to operate, these same characteristics as a group represent a workable and reasonable second-best solution.

IV. Overall Appraisal of the Present Exchange Rate System

From the preceding review of approximately a decade of experience with managed floating, the overall performance of the present exchange rate system can perhaps best be characterized as "remarkably good given the harsh global environment but with plenty of room left for improvement." At the risk of oversimplifying the complexity of some issues and of ignoring others, the main lessons of the floating rate experience would seem to be the following.

First, one should not overestimate the capacity of the exchange rate system per se to do good or evil. In this sense, neither the expectations of the proponents of floating rates nor those of its critics have been confirmed by experience. Floating rates have not provided complete or even good insulation against all types of external disturbances; they have not provided rapid and automatic equilibration of external payments imbalances; they have not removed the need for policy coordination across countries; they have not eliminated pressures for protectionism; they have not done away with or even significantly reduced the demand for international reserves; and they have not encouraged enough stabilizing speculation to keep real exchange rate movements within narrow bands corresponding to permanent changes in the terms of trade. But floating rates have also not led to a collapse in international trade and investment; they have not destroyed the discipline to fight inflation; they have not produced a continuous upward ratcheting of country and global inflation rates; they have not trapped high-inflation and low-inflation countries into vicious and virtuous circles for long time periods regardless of the authorities' policy efforts; they have not reduced the size of price elasticities for traded goods, nor produced perverse long-term effects on current account imbalances; and they have not produced large increases in frictional unemployment due to workers shifting back and forth among industries in response to very short-term exchange rate fluctuations. The exchange rate system matters, but not as much as previously thought.

Second, and going in the opposite direction, there has been a tendency to underestimate the importance of disciplined and coordinated macroeconomic policies--things usually paired with the viability of fixed exchange rates-for the successful operation of floating rates. It is true that floating rates have allowed more autonomy than fixed rates in the use or control of policy instruments. But in a world where goods and assets are traded freely and are close substitutes across countries, this increased autonomy will not translate into increased policy effectiveness if monetary and fiscal policies are unstable and unbalanced at the national level and are uncoordinated across countries. This is because such policy behavior will set in train exchange rate movements that will ultimately prove "unacceptable," either to the initiating country itself (because, say, of adverse feedback effects on the target variables) or to the international community (because, say, of the adverse effects of rate movements on their policy instruments and/or targets). In time, therefore, that autonomy will be curbed as the exchange rate itself becomes a target. All of this follows from the triple property of a floating system: (i) that current exchange rates are heavily dependent on expected future exchange rates; (ii) that expected future exchange rates are, in turn, heavily influenced by expected future macroeconomic policies; and (iii) that these expected future policies are heavily influenced by past policy behavior. This means that exchange rate policy can no more be divorced from basic macroeconomic policies under floating than it can under fixed rates. It is no coincidence that most of the periods of heavy strain on exchange rates under both managed floating and the adjustable peg system have

been periods when macroeconomic policies were either unstable (i.e., highly inflationary), or unbalanced (i.e., with an inappropriate mix between monetary or fiscal policy), or uncoordinated (i.e., with inconsistent policy objectives across countries at prevailing exchange rates). It is also no coincidence that periods when exchange rates have been most "out of line" have also been periods when other key prices in the economy that are also influenced by the course of macroeconomic policies (i.e., real wage rates and real interest rates) have also been out of line. In short, floating rates and fixed rates are different in how they work to discipline macroeconomic policies but they are not so different in the discipline that it takes to make them work well.

Third, the fact that the present system is characterized by such a wide diversity of exchange arrangements and by such pronounced variations in "management" of exchange rates across countries does not imply that it is a "non-system" or that it lacks a logical foundation. Quite the contrary. This diversity is consistent with the proposition that the optimal degree of exchange rate flexibility differs across countries owing in large part to differences in their economic structures. Both theory and empirical evidence have indicated that the smaller more open, more highly indexed economies (e.g., smaller European countries) suffer proportionally larger domestic price feedbacks and obtain less lasting relative price advantage from exchange rate changes than do the larger, less open, and less indexed economies (e.g., the United States). 1/ It is therefore not surprising that the former group has sought mechanisms to avoid frequent or substantial movements in exchange rates, and has in the main preferred other means of stabilizing real output and the balance of payments. Their desire to create "a zone of monetary stability" is thus understandable quite independently of political considerations. An analogous argument could be made for the revealed preference of developing countries for more "fixed" exchange arrangements, although here the list of relevant structural factors would be longer and more varied. In any case, perhaps the key implication of all this is that judgments about whether exchange rates fluctuated too much over the past decade are not likely to be uniform across countries, and for reasons that go beyond intercountry differences in philosophy about the efficiency of markets. Going one step further, these same intercountry differences in view about optimal exchange rate flexibility strengthen the case for better coordination of policies. For in the absence of such consultation and coordination, it is unlikely that "common" views about the proper distribution of the adjustment burden as between exchange rates and other policy instruments will emerge on their own.

1/ Of course, not all structural factors are immutable. For example, a change in labor bargaining practices that results in an increased flexibility of real wages can change a country that was an unlikely candidate for more exchange rate flexibility into an attractive candidate.

Fourth, in appraising the present exchange rate system, it is crucial to distinguish the period of floating rates from the effects of floating rates themselves. Otherwise, the exchange rate system is sure to be blamed for, and credited with, outcomes that are only marginally related to it. In this connection, floating rates do not seem to have been responsible for the high inflation and high unemployment rates, nor the slow growth in productivity experienced by industrial countries over the past ten years. Nor do they emerge as the key factor behind the slowdown in the growth of world trade during the same period. No exchange rate regime would have emerged unscathed from the combination of shocks, portfolio shifts, and structural and institutional changes of the past ten years. Bryant [1983] and Lamfalussy [1979] reach the same verdict:

> "There is no set of exchange rate arrangements under which the 1973-75 and 1979-80 oil shocks would not have had traumatic consequences. It is impossible to imagine any arrangements that would not have transmitted major inflationary and contractionary impetuses back and forth among the major economies. I doubt that the competence and appropriateness of domestic macroeconomic policies in the past ten years was much influenced, positively or negatively, by the exchange rate arrangements that actually existed, or that these policies would have been greatly improved under any other arrangements." 1/

> "The extremely turbulent nature of events during the period 1973-78 should make us very cautious about making a general assessment of our recent experience with floating exchange rates. On the one hand, these disturbances occurred in the form of external shocks which profoundly altered the world pattern of current accounts. On the other hand--and more recently--they were caused by disequilibrating capital movements resulting from rapid shifts in the currency composition of liquid portfolios. One has the impression that any exchange rate regime would have had trouble coping with imbalances of these kinds, especially when the world's dominant reserve centre runs a sizable current-account deficit. After all, the Bretton Woods system broke down in similar circumstances." 2/

For the same reasons, even if major changes in the exchange rate system could be brought about, such changes would not, by themselves, be likely to significantly reduce unemployment, or eliminate pressures for protection, or lead to a resurgence in investment or productivity, or make economies immune from future disturbances. The exchange rate system is an important facilitating mechanism for economic interdependence among countries but is not a panacea for the world's current menu of economic troubles.

1/ Bryant [1983], pp. 78-79.
2/ Lamfalussy [1979], p. 50.

Fifth, the present exchange rate system has demonstrated some considerable strengths that ought not be overlooked. Foremost among them perhaps is that exchange rate changes have made a positive contribution to securing effective external payments adjustment over the medium to long run. Despite some powerful external disturbances, the data as set out in Tables 2 and 3 are not inconsistent with the judgment that the average size and the average persistence of payments imbalances of the larger industrial countries have been smaller during the last decade than during the last ten years of the adjustable peg system. Also, asymmetries in adjustment as between surplus and deficit countries, and as between the most important reserve center and non-reserve currency countries, have been reduced. Similarly, given slow adjusting national price levels, exchange rate changes have made it possible for real exchange rate changes to adjust to, inter alia, permanent changes in the terms of trade, significant natural resource discoveries, continuing differences in trend rates of growth of labor productivity, and evolutionary changes in barriers to trade and capital mobility. The greater flexibility of exchange rates may also have served to increase somewhat the independence of monetary policy and to improve the insulation from general price level disturbances that arise from large intercountry inflation differentials. Also, by funneling more of short-term disturbances through the exchange market rather than through goods and labor markets, producers and consumers are better able to reduce the consequences of uncertainty by purchasing insurance of one kind or another against these unforeseen contingencies. Finally, in a world in which effective coordination of policies among the major industrial countries has been the exception rather than the rule, and where there have been serious lapses of "discipline" in policymaking at the national level, the present system at least has maintained a mechanism of conflict resolution (namely, the foreign exchange market) that has not involved either suspension of currency convertibility or large-scale restrictions on trade and capital flows.

Sixth, a harsh operating environment and good "average" performance over the decade do not mean that the operation of the present exchange rate system has been free of serious problems. It certainly has not. The most critical one has been that real exchange rate movements have sometimes gone far beyond those movements suggested by best estimates of "fundamentals," and have sometimes stayed out of line for periods of up to two to three years. In terms of the concepts used in this paper, this is just another way of saying that there have sometimes been large and persistent departures of actual external payments positions from "equilibrium" ones. Even if the costs of such maladjustments cannot be estimated with much precision, it is clear that they have created problems in two major areas.

The first is that of efficient resource allocation. The real exchange rate is too important a relative price for it to not affect the pattern of production, employment, investment, and consumption both within and across countries whenever it changes by large amounts (e.g., 30 percent or more) over the medium term. For example, countries with persistent undervalued real exchange rates have tended to overproduce

exports, underconsume imports, and overinvest abroad and in tradable goods industries at home. The overvaluation case is symmetrical. Further, when these unsustainable exchange rate and payments positions do unwind, as they eventually must, there are likely to be non-trivial adjustment costs because resources (especially labor) released from the overexpanded sectors do not quickly find employment elsewhere, particularly in the context of sluggish overall economic activity. Thus, even though such resource misallocation and adjustment costs were probably not the primary determinant of inflation, growth, and unemployment performance over the past decade, they made a difficult situation even more troublesome.

The second major concern is in the policy reaction to disequilibrium exchange rates. Although the foreign exchange market does provide a decentralized solution to policy inconsistencies across countries, it has become increasingly evident that countries may resort to other more socially destructive administrative mechanisms if they feel that the "verdict of the market" is both inequitable and persistent. These administrative mechanisms--most of which involve subsidies (overt or hidden), taxes, or quantitative restrictions on exports or imports--are worrisome because they not only erode the gains from trade but also make cooperation more difficult in other areas of mutual concern. Again, even though exchange rate distortions have probably not been the prime mover of such restrictive measures, they certainly have not helped. In this sense, and contrary to initial expectations, the present system has not yet "depoliticized" the process of exchange rate adjustment. It also highlights why it is so essential in the future to take sufficient preventive measures to keep an adjustment mechanism as imprecise as the exchange rate from having to shoulder too much of the adjustment burden.

V. Options for the Future

The preceding review and analysis of a decade of experience with managed floating is suggestive of some ways to improve the operation of the exchange rate system. In this section, that theme is expanded upon by considering some directions for possible restructuring of the exchange rate system. It should be emphasized that at this early stage of the debate, the purpose is not to draw firm conclusions about the best single proposal but rather to offer a focus for discussion by Executive Directors on how the evolution of the exchange rate system might best be managed.

Rather than present an exhaustive taxonomy either of alternative exchange rate systems or specific proposals for change, this section is organized around a series of key issues for discussion. Each of these issues concerns a general channel or mechanism for altering the operation of the present system. As implied in Section II, however, such a list would likely be a sterile one without three ingredients: first, a notion of what the objectives of these alterations should be; second, at least a rough outline of the environment in which such a changed exchange rate

system would likely have to operate; and third, an indication of which countries or country groups would be the primary initiators or beneficiaries of these changes.

There are, of course, no simple or completely satisfactory answers to any of these three questions. For the purposes of this paper however it may be sufficient to employ three working assumptions that are consistent with the preceding analysis of the present system. The first such assumption is that a reasonable intermediate objective would be to maintain enough flexibility in real exchange rates to aid external adjustment, but at the same time, create conditions under which real exchange rates do not stray so far, so often, and so long from levels consistent with "fundamentals." 1/ In capsule, the first part of that objective might be considered as the present system's principal strength and the latter part, its principal weakness. Turning to the environment, perhaps the safest assumption to make is that the rest of the 1980s may be somewhat more hospitable than the 1973-82 period. This means that the exchange rate system may still have to contend, inter alia, with large disturbances of both a real and monetary variety, high international mobility of capital, unexpected demand shifts among alternative reserve currency assets, varying degrees of real wage flexibility across countries, large shifts in comparative advantage across countries, and serious sectoral problems that give rise to continuing demands for protection against foreign producers. On the other hand, the mean rate of inflation, as well as its dispersion across countries, could well be lower, and there may continue to be a reservoir of goodwill that can be tapped for efforts aimed at greater coordination of policies. Finally, although many channels for improving the operation of the system apply equally well to all country groups (e.g., the pursuit of stable, credible, and balanced underlying policies), it is probably most realistic to assume that initial efforts be directed primarily at the major industrial countries. As noted in Section II, most of the developing countries as well as some of the smaller industrial countries have already adopted some form of "pegged" exchange rates or "limited flexibility" in their exchange arrangements. As such, quite apart from the dominant role that the larger industrial countries play in international trade, more stability in the exchange rates of the major currencies would go a long way toward providing greater stability in the real effective exchange rates of everybody else.

Issues for discussion

With this rough outline of objectives, environment, and major participants in mind, it is possible to make an assessment of how the present exchange rate system might be altered in desirable and feasible directions. To aid in such a discussion by Executive Directors, the

1/ Note that so long as exchange rate behavior is specified in terms of real exchange rates, this objective can in principle be satisfied either by fixed rates, or flexible rates, or any combination in between.

staff has selected six key issues. The statement of each of those issues is accompanied by a brief commentary that lays out some of the principal factors or arguments that bear on that issue. Many of these key issues are, of course, familiar from earlier reform deliberations, including those conducted under the auspices of the Committee of Twenty. Also, because the issues remain controversial, it is not to be expected that Directors will share the same view on all, or perhaps even any of them. Nevertheless, if the large field of proposals is to be progressively "narrowed down," it is important to identify as early as possible where the major areas of agreement and disagreement lie.

Issue number one: Is it reasonable to envisage the return of conditions under which fixity of exchange rates among the major currencies could be restored?

Commentary: A negative answer to this question rests on the following grounds: (i) that these countries would be unwilling to completely subordinate monetary policy to the dictates of a fixed exchange rate; (ii) that structural differences among them are large enough to preclude the emergence of a common rate of inflation; (iii) that there will be a need for real exchange rate adjustments to reflect changes in comparative advantage; (iv) that prices and wages are too inflexible (particularly downward) to obtain the requisite real exchange rate movements without changes in nominal exchange rates; and (v) that there is no willing or readily acceptable candidate for the central role of the "pivot" or nth currency in the system. The case for a positive answer is essentially that: (i) there is already in prospect a significant convergence of inflation rates for the four largest countries in 1983-84; (ii) that the discipline necessary for coordination of policies among the others will be given much impetus by the establishment of fixed rates; (iii) that the policy autonomy under alternative systems is largely illusory anyway; and (iv) that even a partial success (infrequently adjustable rates) would have a strong positive effect on domestic stability and the resumption of world trade growth.

Issue number two: If nominal exchange rates need to be adjusted to reflect changes in the "fundamentals" over time, is there any rule or formula that could help in determining the right structure of rates? Also, what about the merits of "presumptive indicators" for initiating adjustment?

Commentary: The principal argument against the use of formulas or rules for determining appropriate changes in nominal exchange rates (e.g., a crawling peg based on inflation differentials or on an average of past exchange rate movements) is that the factors calling for exchange rate changes (for example, shifts in labor productivity, permanent changes in the terms of trade, changes in tastes, natural resource discoveries, dramatic changes in expected future macroeconomic policies, etc.) or symptoms of an exchange rate maladjustment (for example, heavy capital inflows and attendant excessive indebtedness and intensifying exchange controls) are too varied, too unpredictable, and too unstable over time

to be captured ex ante in any formula or rule. There is also the supplementary argument that while such a formula approach may have represented a reasonable "second-best" solution to the nominal exchange rate rigidities of the Bretton Woods era, this approach loses its raison d'etre in today's world where exchange rates are, if anything too flexible. The main counterargument is perhaps that exchange rate formulas represent a reasonable middle ground between the excessive rigidity of administratively set exchange rates and the excessive volatility of market-determined rates. Further, its supporters might also point out that market-based forecasts of exchange rates (e.g., forward exchange rates) have themselves proved to be very poor predictors of actual exchange rates, so that the uncertainty problem is not specific to formulas or to rules.

"Presumptive" or "objective" indicators for adjustment are, of course, less restrictive in principle because they only signal a need for adjustment but usually do not specify which combination of adjustment measures the country should adopt. In brief, the case for them is that the regular examination of a set of multiple indicators could help to detect problems at an early stage and hence induce a more timely and more symmetrical pattern of adjustment than would occur in their absence (or at least trigger discussions of policy among countries that make coordinated surveillance workable). As with exchange rate rules, opposition to them is often based on the arguments that there is no simple indicator that will consistently transmit reliable adjustment signals and that, even if there were such an indicator, practical problems over its precise definition, measurement, and monitoring would severely limit its applicability.

Directors will recall that an objective indicator based on international reserves was a part of the Committee of Twenty's Outline of Reform. The only exchange rate arrangement that has actually implemented a presumptive indicator is the European Monetary System. In that system, once a country's actual exchange rate crosses a "threshold of divergence" from its ECU central rate, there is presumption that the authorities will undertake corrective measures (e.g., diversified intervention, domestic monetary policy measures, changes in central exchange rates, etc.). More recently, a number of proposals have suggested using the movement of exchange rates as a presumptive indicator for changes in domestic monetary policy.

In discussing the issues of exchange rate rules and of presumptive indicators, Directors may want to comment on the performance of the "divergence indicator" within the EMS, and on whether presumptive indicators have a potential role to play within a system of managed floating.

Issue number three: Would adjustable par values with narrow margins be viable for the major currency countries in today's world of high capital mobility?

Commentary: Although this issue is similar in many respects to issue number one (i.e. the restoration of fixed exchange rates), the capital mobility issue is given special prominence here because it is widely cited as perhaps the key contributory factor to the breakdown of the Bretton Woods system. Indeed, the case against a return to adjustable par values with narrow margins is that none of the factors that made the Bretton Woods system so vulnerable to "hot money" flows would be less problematic today or tomorrow. That is, large and suddenly changing interest rate differentials would still arise because of the failure to harmonize monetary and fiscal policies across countries, there would be rumors of imminent parity changes due to a whole host of circumstances (e.g., changes in governments with different economic priorities), and the resources of central banks would be insufficient to cope with the larger resources of private speculators. Some would go farther and say that today's situation would be even more tenuous than under Bretton Woods because liberalization measures and technological advances have combined to render capital much more mobile than during the 1950s and 1960s. Hence, if such an adjustable peg scheme could work at all, it would need both wider margins and some mechanism to insure prompt adjustment of par values. The opposing view is not so much that these aforementioned problems are less serious today than in earlier times but rather that the intractability of the problem is exaggerated. The viability of the EMS, despite its as yet short tenure, may provide some support for this view. Specifically, if there is sufficient political commitment, generous support facilities for riding-out balance of payments difficulties, active exchange market intervention policies, a presumptive indicator for adjustment, and the acceptance of the need for occasional, and sometimes occasionally large, realignments of central rates--such a system can function even with relatively narrow margins.

Issue number four: Is a solution to excessive exchange rate variability to be found in new taxes or restrictions on international capital flows?

Commentary: This is again a familiar issue but one that has gained new currency in the debate of how to cope with "overshooting" of floating rates. The case against throwing "sand in the wheels" of the international capital market includes the following arguments: (i) there is no strong presumption that the resource allocation costs from impeding the international flow of capital would be less serious than those emanating from restrictions on goods; (ii) there is no reliable (ex ante) method of separating "productive" from "nonproductive" capital flows by reference to such factors as maturity (short term versus long term) or ownership (portfolio versus direct investment); (iii) any tax on capital flows would make it more difficult for a country to finance a current account imbalance because it would have to raise interest rates enough not only to create a favorable interest rate differential but also to offset the cost of the tax; (iv) even aggressive control programs, such as those of the early 1970s, often failed to stem private capital flows, and the subsequent development of offshore banking markets makes their efficacy today less likely; and (v) unless uniform restrictions or taxes could be

negotiated and accepted by all parties, there would be a constant danger of escalation and retaliation, with damaging spillovers for other international transactions. The case for such impediments to capital flows does not deny these costs; instead, it argues only that they will be smaller than the macroeconomic costs associated with larger exchange rate fluctuations under free mobility of capital.

In discussing this issue, Directors may also want to consider the possible effectiveness of other alternatives for dealing with so-called "disequilibrating" capital flows, including dual exchange markets, sterilized intervention, greater harmonization of monetary policies, and use of wider margins (in the case of countries with adjustable peg regimes).

Issue number five: Should greater stability of floating exchange rates be sought primarily in greater stability of macroeconomic policies at the national level and in greater coordination of these and of other policies (e.g., exchange market intervention) across countries?

Commentary: As emphasized earlier, it is by now widely accepted that floating exchange rates would show less volatility if a firmer anchor could be established for medium- and long-term private sector expectations about exchange rates. The case for stressing the implementation of stable, credible, and balanced policies is simply that, quite apart from their favorable impact on domestic economic objectives, these policies are the single most important ingredient in generating such a stable anchor for exchange rate expectations. For if market participants cannot gauge the medium-term course of basic policies, and if they cannot be confident that basic economic objectives can be reconciled across countries without either dramatic shifts in policy mixes and/or in exchange rates, they will have little basis from which to "form a view" about future exchange rates. In such circumstances, speculative "bubbles" and "bandwagon" effects become more prevalent because there are no natural bounds for the expectations of speculators. Conversely, where countries have a history of stable policy behavior and where, therefore, forecasts of policy intentions have credibility, neither minor shocks nor short-term deviations of policies from targets are likely to be translated into large exchange rate movements because longer-term expectations about rates will not be much affected. The relative stability of the floating Canadian dollar over the 1950-61 period is often cited as an example of such a stabilizing anchor at work ("a dollar should be worth approximately a dollar"). Because better conduct is widely recognized as improving the functioning of any exchange rate regime, there is, of course, no case against better macroeconomic policies. But there are doubts and questions about if and how such improved policy conduct can be brought about within the present system.

In discussing this issue, Directors may want to consider the following questions: (i) what characteristics of policy behavior in the major currency countries could have been responsible for observed

exchange rate behavior over the past two to three years; (ii) have the external adjustment problems of the past decade been primarily due to a lack of agreement on appropriate policies across countries or rather to the absence of political will to implement such appropriate policies; (iii) what role should exchange market intervention play in communicating policy intentions to the market and in otherwise trying to establish an anchor for exchange rate expectations; and (iv) what can be done in labor and product markets to increase the flexibility of wages and prices so that financial market prices do not have to carry so much of the burden of responding to disturbances?

Issue number six: Would official "forecasts" or "target zones" for exchange rates help to both reduce the variability of exchange rates and increase the incentives for external adjustment?

Commentary: The case for official forecasts or target zones rests on two arguments. First, in the absence of such official forecasts, it is too difficult for market participants to form a view about future exchange rates. Even where policies are relatively stable, there are just too many factors operating on exchange rates to make a firm judgment about the value of the exchange rate six or eighteen months ahead. Official forecasts of the exchange rate, provided they are credible, are thus deemed to be necessary for generating an anchor for exchange rate expectations. Second, because the authorities would be under some pressure either to keep actual exchange rates within the target or forecast zone, or to explain departures from the zone, it is claimed that the speed of external adjustment would be increased. It is argued that without such official forecasts, authorities ha e insufficient incentives for adjustment since they can always equate the "right" rate with the market rate.

The idea of official forecasts or target zones differs from the traditional adjustable peg system in three principal respects. First, a country's intervention and monetary policy obligations are considerably looser under the former than under the latter. Specifically, the country does not have to intervene in the exchange market to keep its forecast rate within the prescribed zone (so-called "soft" margins) and it similarly does not have to make exchange rate considerations paramount in setting its monetary policy. Instead, it should not use intervention to push the actual rate away from the forecast rate when the former is outside the zone, 1/ and it pledges to give exchange rate considerations more attention than under the present system in formulat-

1/ Directors may recall that the interim "Guidelines for the Management of Floating Exchange Rates" (SM/74/75) contained a similar provision for intervention behavior.

ing monetary policy. 1/ A second difference is that the forecast or target zones are usually contemplated as being much wider than under the adjustable peg system; those wide zones are to reflect the large margin of error associated with attempting to forecast the "equilibrium" exchange rate, and are to provide some buffer against large and sudden capital flows. Third, the forecast rate and the zone are expected to be examined, and if necessary, altered at frequent intervals to reflect changes in countries' comparative advantage or relative competitive positions. Because of this feature, it is possible that in some situations departures of actual exchange rates from target zones would be accommodated by changes in the target zone rather than by policy measures designed to move actual rates back into the zone.

To some observers, the practice of announcing official forecasts or targets for the growth rates of monetary aggregates in a domestic context provides a useful analogy. Such forecasts or targets provide a presumption that the authorities will conduct policies so that the growth rates of aggregates evolve within ranges specified. In the event that the targeted aggregate should move outside its expected range, there is a presumption that the authorities will act to offset this movement or will explain why the earlier target is no longer appropriate. Moreover, in many countries more than one aggregate is targeted and, as is often the case, when the different aggregates behave differently, again there is a presumption that the authorities will explain their emphasis on one aggregate or another in current circumstances. Even when the explicit quantitative targets are not always attained, it is argued that they provide an anchor for expectations and a relatively straightforward context for explaining the authorities' actions.

The case against official forecasts of exchange rates is: (i) that in a world of stable underlying macroeconomic policies, there is no need for an additional anchor for exchange rate expectations; (ii) that knowledge of the determinants of exchange rate movements, or of the "equilibrium" exchange rate, is so rudimentary that the target zones would have to be too wide to have value as an anchor for expectations; (iii) that negotiation of forecast rates, zones, and changes in them, would be subject to all the centralized management delays of the Bretton Woods era, thereby robbing the scheme of its flexibility; (iv) that the best guide for domestic monetary policy is still that of achieving price stability; in contrast, the exchange rate can often give false signals; and (v) that forecast rates or zones would only have credibility if they were backed by broad coordination of macroeconomic policies--and if such coordination could be achieved--no change in the present system would be necessary.

1/ The idea of using exchange rate movements as a guide or indicator for domestic monetary policy is often defended on the grounds that alternative indicators (e.g., interest rates, onetary aggregates) are becoming increasingly unreliable due to inflationary expectations or technological and regulatory considerations.

Appendix Table 1

Exchange Rate Arrangements, June 30, 1983 1/

Pegged						Flexibility Limited Vis-à-Vis a Single Currency or Group of Currencies		More Flexible		
U.S. dollar		French franc	Other currency	SDR	Other composite	Single currency 2/	Cooperative arrangements	Adjusted according to a set of indicators	Other managed floating	Independently floating
Antigua and Barbuda Bahamas 3/ Barbados Belize	Lao People's Democratic Republic Liberia Libyan Arab Jamahiriya Nicaragua 3/	Benin Cameroon Central African Republic	Bhutan (Indian rupee) Equatorial Guinea (Spanish Peseta)	Burma Guinea 3/ Guinea-Bissau Iran, Islamic Rep. of	Algeria 3/ Austria Bangladesh 3/5/ Botswana Cape Verde	Afghanistan Bahrain 4/ Ghana Guyana	Belgium 3/ Denmark France Germany, Federal Republic of Ireland	Brazil Chile 3/ Colombia Peru 3/ Portugal	Argentina Australia Costa Rica 3/ Ecuador Greece	Canada Israel Japan Lebanon South Africa
Bolivia Burundi Djibouti Dominica Dominican Republic 3/	Oman Panama Paraguay Romania Rwanda	Chad Comoros Congo Gabon Ivory Coast	The Gambia (pound sterling) Lesotho (South African Rand)	Jordan Kenya Malawi Sao Tome and Principe	China, 3/ Cyprus Fiji Finland 8/ Hungary 3/ Kuwait	Maldives Qatar 4/ Saudi Arabia 4/ Thailand United Arab Emirates 4/	Italy 6/ Luxembourg 3/ Netherlands		Iceland India 7/ Indonesia Korea Mexico 3/ Morocco	United Kingdom United States Uruguay
Egypt 3/ El Salvador 3/ Ethiopia Grenada Guatemala	St. Lucia St. Vincent Sudan 3/ Suriname	Mali Niger Senegal Togo Upper Volta	Swaziland (South African Rand)	Seychelles Somalia 9/ Vanuatu Viet Nam Zaire 3/	Madagascar Malaysia Malta Mauritania Mauritius Nepal Norway				New Zealand Nigeria Pakistan Philippines Sierra Leone 3/	
Haiti Honduras Iraq Jamaica 3/	Syrian Arab Republic 3/ Trinidad and Tobago Venezuela Yemen Arab Republic			Zambia 10/	Papua New Guinea Singapore Solomon Islands Sweden				Spain Sri Lanka Turkey Uganda 3/ Western Samoa	
	Yemen, People's Democratic Republic of				Tanzania Tunisia Zimbabwe				Yugoslavia	

1/ No current information is available relating to Democratic Kampuchea. All members whose currencies are pegged to a single currency do so at present within zero fluctation margins. Members whose currencies are pegged to the SDR or "Other composite" maintain their exchange rates within zero or very narrow margins, seldom exceeding ± 1 per cent about the peg. Within the "Flexibility Limited" category the "Single currency" subcategory lists those members that are observed to maintain an exchange arrangement such that their exchange rate fluctuates with a variability equivalent to 2 1/4 per cent margins with respect to another member's currency. The subclassification, "Cooperative arrangements," lists the countries participating in the European Monetary System (EMS). With the exception of Italy, which maintains margins of 6 per cent, these countries maintain 2 1/4 per cent margins with respect to their cross rates based on the central rates expressed in terms of the European currency unit (ECU). Members with exchange arrangements listed under the "More Flexible" category are divided on the basis of the extent to which the authorities intervene in the setting of exchange rates. In some instances the exchange rate is allowed to move continuously over time; if the authorities intervene at all they do so only to influence, but not to neutralize, the speed of exchange rate movement. That exchange arrangement is classified as "Independently floating." Alternatively, the exchange rate may be set for a short interval, usually one day to one week, and the authorities stand ready to buy and sell foreign exchange at the specified rate (the "managed floating" group).

2/ All exchange rates have shown limited flexibility vis-à-vis the U.S. dollar.

3/ Member maintains dual exchange markets involving multiple exchange arrangements. The arrangement shown is that maintained in the major market.

4/ Exchange rates are determined on the basis of a fixed relationship to the SDR, within margins of up to ± 7.25 per cent. However, because of the maintenance of a relatively stable relationship with the U.S. dollar, these margins are not always observed.

5/ Changes in the exchange rate vis-à-vis the pound sterling generally occur when the effective exchange rate, as calculated on the basis of the weighted currency basket, deviates by more than ± 1 per cent from the pegged level.

6/ Margins of ± 6 per cent are maintained with respect to the currencies of other countries participating in the exchange rate mechanism of the European Monetary System.

7/ The exchange rate is maintained within margins of 5 per cent on either side of a weighted composite of the currencies of the main trading partners.

8/ The fluctuation band of the Bank of Finland's currency index is currently about 4.5 per cent (equivalent to margins of ± 2 1/2 per cent).

9/ The exchange rate is maintained within margins of ± 2.25 per cent.

10/ The exchange rate is maintained within margins of ± 2.5 per cent in terms of the fixed relationship between the kwacha and the SDR.

Appendix Table 2. Estimates of Import and Export Price Changes (in domestic currency terms) in Response to a 10 Percent Devaluation

	Spitaeller [1980]				Kreinin [1977]	Robinson et al. [1979]	
	Import Prices		Export Prices		Import Prices	Export Prices	
	6 months	2 years	6 months	2 years	2 years	6 months	2 years
Belgium	10.2	10.2	6.8	6.8	9.0	13.8	13.8
Canada	10.1	10.1	6.7	9.5	n.a.	4.5	8.9
France	8.3	10.3	5.3	5.9	n.a.	7.1	7.1
Germany	7.2	7.3	1.7	2.6	6.0	7.7	9.3
Italy	10.9	10.9	8.7	10.5	10.0	9.9	9.9
Japan	11.5	11.5	5.9	5.9	8.0	12.1	6.5
Netherlands	6.6	11.6	6.8	6.8	n.a.	5.7	6.0
Sweden	10.2	10.2	2.3	4.8	n.a.	10.1	10.1
United Kingdom	9.3	10.6	3.5	5.6	n.a.	7.9	7.9
United States	7.1	10.2	3.2	3.2	5.0	5.8	5.8

Appendix Table 3. Estimates of the Elasticity of Domestic Prices with respect to Changes in Import Prices

	Consumer Prices		Wholesale Prices	GDP Deflator
	Dornbusch & Krugman [1976]	Spitaeller [1980]	Beenstock & Minford [1976]	Artus & McGuirk [1981]
Canada	0.20	0.24	0.28	0.17
France	0.16	0.32	0.28	0.23
Germany	0.03	0.08	0.23	0.22
Italy	0.28	0.36	--	0.16
Japan	0.24	n.a.	0.20	0.14
United Kingdom	0.19	0.20	--	0.27
United States	0.14	0.16	0.05	0.14

Appendix Table 4. Equations Relating Growth of World Output and World Trade 1/

	Time Period	Constant	Growth of World Output	Real Exchange Rate Variability 2/	Real Exchange Rate Variability (lagged) 2/	$\bar{R}^2$	DW	SEE
1.	1959-82	-1.47 (1.02)	1.94 (0.22)			0.76	2.00	2.05
2.	1962-82	-3.16 (1.78)	2.11 (0.25)	0.57 (0.52)		0.79	1.91	2.04
3.	1963-82	-2.56 (1.94)	2.16 (0.32)		0.32 (0.53)	0.80	1.84	2.03
4.	1959-71	2.63 (3.99)	1.12 (0.79)			0.08	1.82	2.31
5.	1974-82	-1.85 (1.07)	2.07 (0.34)			0.82	2.49	1.97

1/ Standard errors in parentheses.
2/ Seven-country trade weighted average of quarterly variability in real effective exchange rates (based on GDP deflator).
Adopted from SM/83/203.

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