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No. 136, December 1979

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EXCHANGE-RATE EXPERIENCES  
AND POLICIES OF SMALL COUNTRIES:  
SOME EUROPEAN EXAMPLES OF THE 1970s

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INTERNATIONAL FINANCE SECTION

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Princeton, New Jersey

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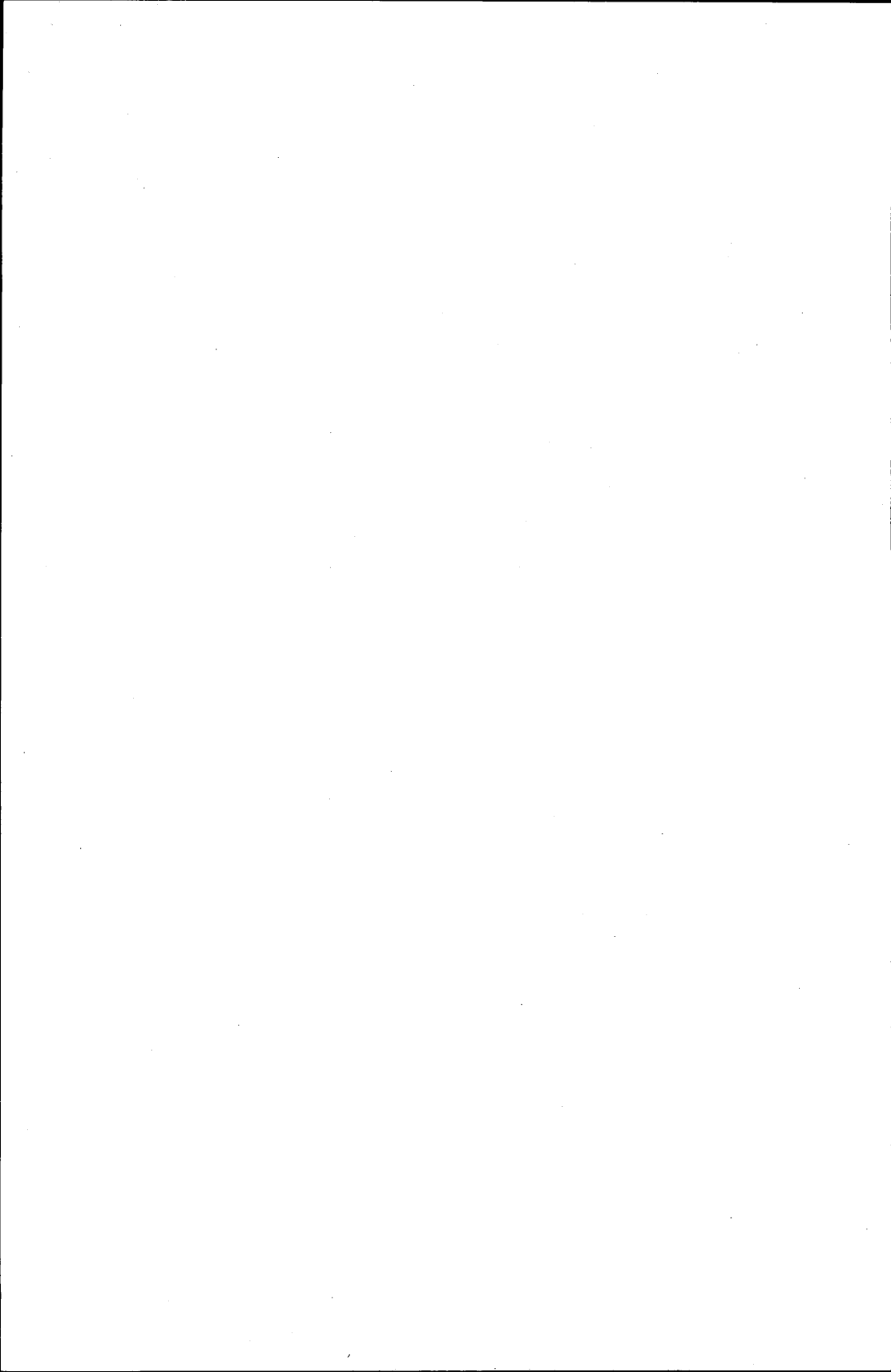
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## Introduction

The exchange-rate experiences and policies of the smaller European economies in the 1970s span a wide range, from the management of strongly appreciating currencies to the defense of others against large and rapid depreciation. As any study of interventions will demonstrate, only pure floating—in the sense of the absence of any exchange-rate target—is missing. Table 1 summarizes the present and past practices of thirteen smaller European countries.

It would be unsatisfactory to attempt to cover this wide range, from the Swiss franc to the Portuguese escudo, in an essay. Rather, I shall concentrate on the “median” case of the smaller European countries that have pegged to the deutsche mark during most or all of the past decade. This narrows the subject to past members of the snake—the Benelux and Scandinavian countries and, unilaterally, Austria—and present members of the European Monetary System (EMS)—the Benelux countries, Denmark, and Ireland. While there are obvious differences among these countries with respect to both macroeconomic experience and design of exchange-rate policies, one common element is the attempt to peg to an external currency or unit facing less rapid inflationary prospects than domestic prices and costs. This policy is sometimes labeled “the strong-currency option” to distinguish it from the individually managed floating, with or without a declared exchange-rate target, practiced by some other European countries. By concentrating on the countries that have taken up the strong-currency option, it becomes possible to identify more clearly the likely costs and benefits to such countries of participation in the EMS on various assumptions concerning the management of the EMS.

In discussing the experiences of countries that have taken up the strong-currency option, the example of Denmark will be used frequently simply because of my greater familiarity with that country. However, much of the analysis is applicable to other small economies in Western Europe that have participated in the joint currency arrangements of the European Community. The Danish experience will be contrasted with that of Finland, Norway, and Sweden, all currently pegging to their individual baskets of currencies.

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This paper was presented at the Ford Foundation-Bank of Spain conference on Macroeconomics under Flexible Exchange Rates in September 1979 and published in Spanish by the Bank of Spain. The part of the paper that relates to Danish experience was presented at the Summer Seminar on Small Open Economies at Trinity College in Dublin in July 1979.

TABLE 1  
EXCHANGE-RATE REGIMES OF SMALLER EUROPEAN ECONOMIES

Country	Mid-1979	1973-78
Austria	Informally in EMS	Informally in snake
Belgium <sup>a</sup>	EMS	Snake
Denmark	EMS	Snake
Finland	Basket pegger <sup>b</sup>	Basket pegger from Nov. 1977
Greece	Basket pegger	Basket pegger from Mar. 1975
Iceland	No announced margins	No announced margins from June 1973
Ireland	EMS	Pegged to U.K. pound
Netherlands	EMS	Snake
Norway	Basket pegger <sup>b</sup>	Snake until Dec. 1978
Portugal	Crawling relative to basket	Crawling relative to basket from Aug. 1977
Spain	No announced margins	No announced margins from Jan. 1974
Sweden	Basket pegger <sup>b</sup>	Snake until Aug. 1977
Switzerland	No announced margins	No announced margins

<sup>a</sup> Belgium/Luxembourg Economic Union.

<sup>b</sup> Composition of basket shown in Table 5.

SOURCE: *IMF Annual Report on Exchange Restrictions*, and *International Financial Statistics*, June 1979.

### Changes in Nominal and Real Exchange Rates, 1970-79

Both nominal and real exchange rates have shown greater changes in the 1970s than during the previous two decades. Table 2 and Figure 1 summarize the evidence for Canada, Japan, the United States, and eleven European countries—the four large ones and seven smaller ones. Five different indices of costs and prices are used in Table 2: (1) unit labor costs (ULC), (2) “normalized” ULC, i.e. wage costs adjusted for trend productivity, (3) value-added (GDP) deflators, (4) wholesale prices, and (5) export unit values. All five indices refer to the manufacturing sector; they are presented quarterly in recent issues of *International Financial Statistics*.

Several comparative studies, notably Artus (1978) and “The International Competitiveness of Selected OECD Countries” in OECD (1978, pp. 35-52), have demonstrated that conclusions about competitiveness are highly sensitive to the choice of cost or price index. Even leaving aside the



TABLE 2  
 INDICES OF RELATIVE COSTS AND PRICES  
 VIS-À-VIS OTHER INDUSTRIAL COUNTRIES, 1978  
 (1970 = 100)

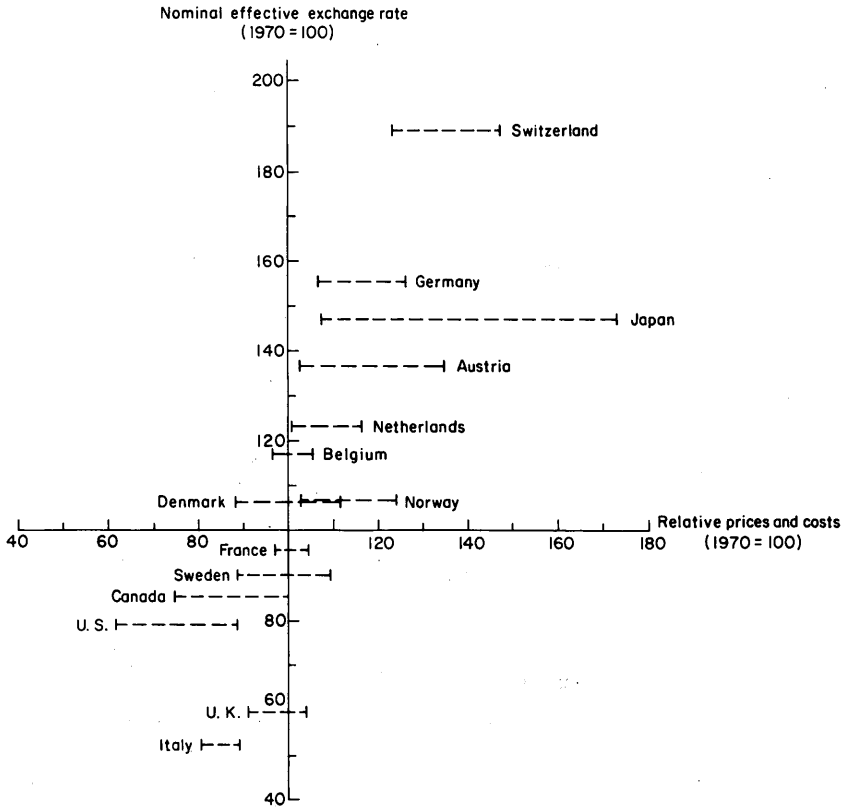
Country	Nominal Effective Rate	Costs and Prices in Manufacturing					Effective Rate Change Agreed at Smithsonian
		Unit Labor Costs	Normal- ized ULC	Value- Added Deflators	Whole- sale Prices	Export Unit Values	
Austria	136.5	122.4	134.7	123.2	119.3	102.6	102.0
Belgium	117.2	102.7	105.5	101.3	96.6	105.2	102.1
Denmark	106.9	91.6	88.4	103.4	111.8	107.7	99.2
France	95.8	104.6	104.0	100.1	97.1	103.3	99.4
Germany	155.3	114.3	126.3	114.5	116.9	107.1	105.7
Italy	52.4	88.8	80.7	88.9	86.2	89.1	99.6
Netherlands	123.1	113.5	109.6	116.3	110.5	100.7	101.8
Norway	106.6	124.0	109.6	113.3	102.7	104.4	99.4
Sweden	90.3	106.9	88.6	98.9	97.6	109.3	99.4
Switzerland	189.0	134.6	123.3	147.4	136.7	138.2	104.9
U.K.	60.1	95.4	91.3	93.6	97.8	104.0	99.4
Canada	85.9	86.9	88.2	100.0	89.8	74.7	105.2
Japan	147.1	173.2	152.6	143.8	122.5	107.6	113.6
U.S.	79.0	61.4	66.7	68.3	79.4	88.8	91.5

SOURCE: *International Financial Statistics* and unpublished data from the IMF Research Department.

extraordinary Japanese case, where the estimates of real appreciation over the eight years 1970-78 vary from 8 per cent in the case of export unit values to 73 per cent in the case of unit labor costs, the variation among the indices is very large. Generally, as one would expect, the indices heavily weighted with traded goods—wholesale prices and export unit values—show closer conformity to purchasing power parity (PPP) than the broader-based price indices such as the GDP deflator and consumer prices (not shown in Table 2). But even in terms of traded-goods prices, the real exchange rates of some of the smaller countries' currencies have changed significantly.

The surprisingly wide range of answers supplied by the different indices makes it impossible to write a story that fits all the observations well. The most that can be said is that there appears to have been, on average, a positive association between appreciations in nominal and real terms. The slope of a line through the first and third quadrants of Figure 1 suggests that a 3 to 5 per cent change in the nominal effective exchange rate has been associated with a change in the real rate of 1 per cent. Departures from this average pattern may be found among

FIGURE 1  
 CHANGES IN NOMINAL EFFECTIVE EXCHANGE RATES AND IN  
 RELATIVE COSTS AND PRICES, 1970-78



SOURCE: *International Financial Statistics* and unpublished data from the IMF Research Department.

both strong and weak currencies for some or most of the indices, and it would be naive to put any great faith in the stability of the relationship. Behind each national constellation for the 1970-78 period there is a separate and detailed story to be told, involving national policy reactions and institutional arrangements. A cross-country regression would not make much sense.

Theoretical considerations suggest that conformity to PPP depends on the degree of openness of the economy: The more open the economy, the more sensitive domestic costs and prices will be to changes

in the nominal exchange rate, *ceteris paribus*; conversely, the more difficult it will be to maintain any given nominal rate in the face of a trend in domestic costs and prices diverging from some international average. Indeed, the two largest and least open economies in terms of foreign-trade shares—the United States and Japan—do show the largest departures from PPP, at least when ULC or the GDP deflator is used for reference. But there is no clear evidence that the seven small European countries and Canada have had less scope for changing their real exchange rates than have the four larger European countries. On most definitions, Canada and Sweden retained in real terms most of the devaluation of their nominal effective rate, while Austria, the Netherlands, and Switzerland retained about half their substantial revaluations. These are rather larger shares than those for Germany and Italy, which have had the largest changes in nominal effective rates, in one direction or the other, among the bigger European countries. They are much larger than the share for the United Kingdom; by 1978 higher inflation had already offset the very large 1972-76 depreciation of sterling. The nominal effective rate of the French franc has not changed much, nor has French competitiveness. The cases of Belgium and Denmark are both ambiguous on the basis of the data in Table 2, the direction of change in competitiveness depending on the index chosen. I shall argue below, however, that in the case of Denmark, at least, there seems little doubt on the basis of broader evidence that substantial real appreciation has taken place over the 1970s.

### **Appraising the Changes in Real Exchange Rates**

Even if we tentatively conclude that there has been scope for changing the real exchange rate or competitiveness on most definitions of that concept, not only in the largest and least open economies but also in the smaller European countries, we must still ask whether such changes were desirable in the specific context of the 1970s. PPP is a convenient starting point for an analysis of the longer-run interaction between national inflation rates and movements in nominal exchange rates. But it should not be elevated into a firm norm, in the sense that departures from PPP must be regarded as undesirable from the viewpoint of the international adjustment mechanism or national policy preferences.

From a policy-oriented viewpoint, we must ask first which changes in real exchange rates were desirable, looking back to the balance-of-payments constellation of the base period (1970) and subsequent policy-induced or exogenous disturbances. Even when we find that real rates

have changed in the right direction, we must go on to ask whether it was worthwhile to let nominal rates move as far as required, in the light of the observed tradeoff between nominal and real changes, rather than rely on domestic policy measures to bring about the required adjustment.

Following this strategy, the first thing to note is that the base period was far from being one of equilibrium. Indeed, the Smithsonian Agreement of December 1971, one year after the end of the base period, was an implicit reply to the first of the policy questions raised above. The Agreement resulted in a comprehensive exchange-rate realignment, designed to alter exchange rates in order to achieve an acceptable constellation of current balance-of-payments positions among the Group of Ten countries and, indirectly, all countries in the Organization for Economic Cooperation and Development. The outcome of the negotiations was very close to the patterns of exchange rates produced by simulations using the world trade models developed by the IMF and OECD staffs—simulations aimed at approximate current-account equilibrium on a cyclically adjusted basis by 1974, i.e. after a lengthy period of adjustments. (The one exception may be the Canadian dollar; the simulations did not indicate the need for the revaluation embodied in the political compromise.) Since little attention was paid in these calculations to the feedback from the suggested exchange-rate changes to domestic costs and prices, it would be fair to say that the Smithsonian Agreement was an attempt to agree on what national and international officials felt were the required real rate changes. These changes, expressed in terms of U.S. dollar rates, ranged from revaluations of 17 per cent for the yen to 7.5 per cent for the lira and the Swedish krona. Expressed in terms of effective rates, they were generally small relative to the changes in real rates that have actually been observed over the 1970-78 period (see the final column of Table 2).

If all subsequent disturbances to the industrialized countries had been primarily of a monetary nature, i.e. accelerations and decelerations in national money creation relative to other countries, which would not call for changes in relative competitiveness, subsequent exchange-rate changes could have been expected to roughly match inflation differentials over the 1972-78 period. There have, indeed, been large differences in rates of national money creation, particularly in the United Kingdom in 1972-73 and in Italy in 1975, that subsequently led to doses of depreciation and accelerating inflation in those two countries. Since the speed of reaction to monetary disturbances in foreign-exchange markets is typically faster than in the market for domestic output, monetary ac-

celerations have led to temporary real depreciations. The mirror image of this process could be observed most clearly in Germany in 1973-74, when the Bundesbank tightened monetary policy earlier and harder than most other central banks, and in Switzerland during much of 1975-77. In these cases, the nominal appreciations ran well ahead of the improvement in relative inflation performance, leading to substantial real appreciations. This phenomenon of "overshooting" has been documented recently for a number of currencies (see, e.g., Swoboda, 1979; Artus and Young, 1979; and Korteweg, 1979).<sup>1</sup>

In any case, purely monetary disturbances may lead to temporary, but not to permanent, changes in the real exchange rate. By implication, a careful analysis of monetary policies may explain some of the variability of real exchange rates but not the longer-term trends observed in some of them over the 1970-78 period.

There is no shortage of possible nonmonetary explanations, however: the oil-price hike of 1973-74; changes in the international division of labor and in the structure of foreign trade, particularly with respect to the role of nonprice factors; and the timing of fluctuations in real economic activity. All of these have to some extent affected the OECD countries differently and have elicited somewhat dissimilar policy responses. In particular, the timing of the initial deflationary reactions in 1973-74 and the vigor of reflationary actions in 1976-77 varied considerably, resulting in a sharp desynchronization of the growth rates of real output in the three major countries, the United States, Japan, and Germany.<sup>2</sup>

The desynchronization swamped other factors, including the changes in real exchange rates that had already taken place and were operating to bring current-account balances closer to equilibrium. There followed rapid real depreciation of the dollar paralleled by unprecedentedly rapid real appreciations of the yen and Swiss franc and by a slower but still significant real appreciation of the deutsche mark, producing the realiza-

<sup>1</sup> The latter study, like other recent monetarist macroeconomic work on the determination of real output, attributes to unanticipated changes in the money stock a significant impact on the real exchange rate over the short and medium run; anticipated monetary changes, by contrast, have more nearly parallel effects on the nominal exchange rate and domestic price level and accordingly have only a minor impact on the real exchange rate. One may have difficulty accepting the particular measure of unanticipated monetary changes Korteweg uses, but there can be little doubt that the distinction he attempts to draw is highly relevant to the analysis of exchange-rate determination.

<sup>2</sup> For a discussion of these policy differences, see Izzo and Spaventa (1979). Some of these differential policy reactions appear in Korteweg's (1979) analysis as unanticipated changes in real government expenditures.

tion that too much of the burden of adjustment had been placed on the foreign-exchange market. This realization resulted in major revisions of policy, most dramatically in Switzerland and the United States, in the fall of 1978. Though the most violent movements were in a few key bilateral exchange rates, notably in the dollar rates for the yen and Swiss franc, they are very visible in the 1978 annual averages of effective rates listed in Table 2. By implication, the final observation for 1978, like the 1970 base period, is not one of equilibrium in which we could expect PPP to hold even if all shocks had been of the monetary kind favorable to the observation of this long-run state.

The main topic of this paper, however, is not the analysis of the changes in real exchange rates of the main currencies that were floating individually (or at least had no announced exchange-rate targets). I have dwelt on them mainly to make one point: Whatever we may think of the size of those changes, the direction of change was undoubtedly right—upward for countries in strong current-account positions, downward for the dollar. My chief concern here is with the smaller European countries, whose currencies did not float individually (with the exception of the Swiss franc). The changes in their exchange rates were more nearly a by-product of the movements of one or more of the major currencies than the outcome of national developments, real or monetary. I shall be concerned, in particular, with the interaction between the currency arrangements of the European Community—the “snake” up to the end of 1978—and the more global system of exchange-rate flexibility surrounding those arrangements.

### **A Digression on the Measurement of Competitiveness in a Small Open Economy<sup>3</sup>**

As I pointed out in my commentary on Table 2, there is little agreement among empirical researchers as to which of the many available or conceivable indices of relative prices and costs is most appropriate for assessing developments in competitiveness.

In highly competitive markets, where producers from several small countries produce and sell under conditions that are fairly similar with respect to technology and organization, one would ideally look for some weighted average of hourly earnings corrected for total factor productivity as the starting point for measuring competitiveness. That is why some researchers select unit labor costs (or the smoothed concept of

<sup>3</sup> This section owes much to the major study of Denmark's competitiveness by Blomgren-Hansen and Petersen (1977) and to discussions with the authors.

normalized unit labor costs also shown in Table 2); they argue that changes in output per manhour are a close approximation to changes in the unobservable total factor productivity. Confidence in this conclusion is easily dispelled, however, by looking at developments in the 1970s. If hourly earnings rise faster at home than abroad, production and employment will be reduced until output per manhour has risen to offset the increase in wages. The more similar the domestic and foreign economies with respect to output structure and production functions, the more tightly will measured unit labor costs be tied together, regardless of differences in rates of change of hourly earnings.

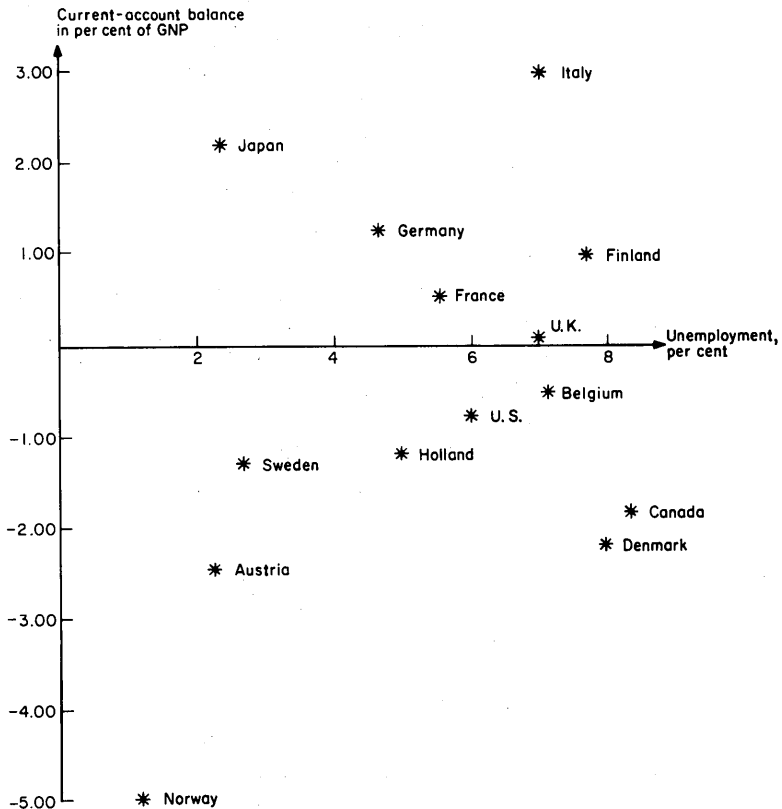
In practice, imperfection in competition and time lags in the responses of producers will assure that changes in unit labor costs are positively correlated with changes in hourly earnings. But measuring competitiveness (or the real exchange rate) by relative unit labor costs expressed in a common unit may lead to underestimation of the changes in relative competitive positions that are really taking place, because changes in output per manhour are in part endogenous responses to changes in hourly earnings. Furthermore, the correction made for changes in output per manhour is excessive to the extent that it is offset by opposite movements in the productivity of other factors. Such offsetting movements are particularly likely for the other main factor, capital. And the error may then be compounded in cases where the cost of capital has been kept high and rising as part of a defensive monetary policy.

Changes in total factor productivity in one country relative to another may be important in comparing a small European country to a developing country or, possibly, to Japan or the United States, but this is hardly the case in comparisons between small European economies such as the Scandinavian or Benelux countries. In these cases, we are likely to get closer to a measure of changes in competitiveness by omitting altogether the correction for changes in output per manhour and relying directly on hourly earnings.

The results for several countries change in quite a remarkable way when we move from comparisons based on unit labor costs or normalized unit labor costs to comparisons based on relative hourly earnings. In the case of Denmark, the change is particularly striking. Using the first two measures, we obtain an 8 to 12 per cent real depreciation; using hourly earnings, we obtain a real appreciation of 25 per cent. The latter figure is much easier to reconcile with the observed changes in relative wholesale prices and export unit values, which showed a real appreciation of 12 and 8 per cent, respectively, over the 1970-78 period. To reconcile these last figures with a decline in relative labor costs of

the same order of magnitude, we would have to look for an explosive rise in profits, and this is strongly at variance with the evidence. The salient facts are rather that the competitive sector has shrunk to such an extent that the Danish combination of unemployment and current-account performance has been persistently worse than that found in other OECD economies (see Figure 2). The unemployment percentage for 1978 was matched only by that of Canada; the current-account deficit, at 2½ per cent of GNP in 1978, a relatively good year, was exceeded clearly but temporarily only by that of Norway—hardly the position of a country that had improved its competitiveness.

FIGURE 2  
CURRENT ACCOUNT AND UNEMPLOYMENT IN  
SELECTED OECD COUNTRIES, 1978

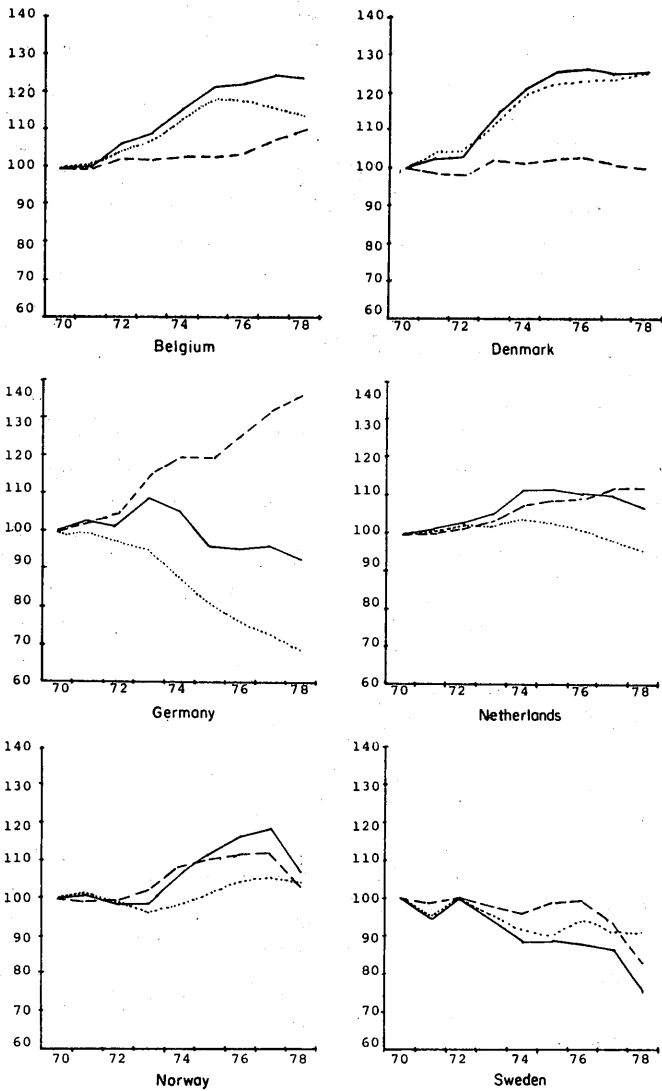


SOURCE: Det økonomiske Rad (1979, p. 20).



Figure 3 shows for each of six countries—Belgium, Denmark, Germany, the Netherlands, Norway, and Sweden—indices for relative hourly earnings and the nominal effective exchange rate, using trade shares

FIGURE 3  
RELATIVE WAGES IN MANUFACTURING (...), THE EFFECTIVE EXCHANGE RATE (---), AND COMPETITIVENESS (—), 1970-78  
(1970 = 100)



in manufacturing as weights in both cases, and indices for the product of the two. The figures point to substantial real appreciations of the Belgian franc and Danish krone and to smaller appreciations of the Dutch guilder and Norwegian krone but, in both the Dutch and the Norwegian cases, some recent improvement in competitiveness. By contrast, the deutsche mark and the Swedish krona have both depreciated in real terms, the krona rather strongly over the two years 1977 and 1978.

On the measure used in Figure 3, the contrast with the previous period, under the adjustable peg, is less clear than when using other measures of the real exchange rate. In the cases of Denmark and the Netherlands, the deterioration in competitiveness (real appreciation) continues a trend that became visible from 1961 in the case of Denmark and from 1963 in the case of the Netherlands. For the other four countries, real rates were more stable prior to 1970 than after, particularly in the short run. But even under the adjustable peg of the 1960s, the pressure to keep changes in relative wages within narrow bounds did not operate very strongly.

### **Exchange Rates in the Snake**

It is useful to distinguish two subperiods in the 1970s, at least for the Scandinavian currencies. During the first, Denmark and Norway were in a clear "conflict" situation; the impact of relatively faster wage increases was compounded by an appreciating nominal effective exchange rate because the countries' currencies were pegged to the other snake currencies and to the deutsche mark in particular. The Norwegian krone even followed the deutsche mark and the Dutch guilder in the series of 5 per cent revaluations of 1973 (see Table 3). Both Denmark and Norway took part in the snake arrangements from the start in March-April 1972, and Norway remained in the snake despite a referendum of September 1972 in which Norway rejected membership in the European Community.

The Swedish case is more complex. Up to 1974, the economy had been less overheated than other OECD economies, and relative wages were falling between 1972 and 1974. There was thus serious discussion in 1974 of the need to revalue the Swedish krona in order to forestall a boom generated by high profits. Some revaluation did indeed take place in 1975-76 as a result of the link to the deutsche mark. But, at the same time, the trend in relative wages was sharply reversed, leading to a rapid deterioration in Sweden's competitive position and a worsening of the current account.