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INTERNATIONAL FINANCE DISCUSSION PAPERS

"IMPORTED INFLATION" AND THE BALANCE OF PAYMENTS

by

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"Imported Inflation" and the Balance of Payments*

Samuel I. Katz

The world-wide character of recent price and wage advances has inevitably focused attention on inflation as an international phenomenon. The authorities in the industrial countries have found internal stability threatened by inflationary forces from abroad. Increasingly, international factors--the expansion in world trade and investment flows, the official efforts in recent decades to eliminate restrictions on private current-account and capital transactions, the growth of multinational corporations and the development of international private banking facilities of unprecedented efficiency for the transfer of private funds across national borders--have limited the effectiveness of national programs to protect the internal economy from external disturbance. This attention to the international aspects of the inflation process was further stimulated in 1971 and 1972 when country after country found the domestic stabilization effort threatened by inflows of funds from abroad.

* The analysis and conclusions of this paper represent only the personal opinions of the author and should not be interpreted as reflecting the views of the Board of Governors of the Federal Reserve System or of members of its staff. The author is indebted to Peter B. Clark and Charles J. Siegman for comments and suggestions.

In this environment, it no longer seemed to make sense to view inflation merely as a collection of individual national phenomena. Instead, economists and government officials turned their attention to the international, as distinguished from the internal, elements which were contributing to world price trends. Many of them found a clearly-evident process of transmission of inflationary impulses from country to country through the balance of payments. Some economists, in addition, offered the fact of the unprecedented outpouring of dollars from the United States, especially in 1971 and 1972, as evidence that the United States was exporting inflation to the rest of the world.

In retrospect, however, this attention to the international transmission of inflation marked a return to a theme widely discussed in Europe during the mid-1960's. There was at that time a widely-held view which attributed their domestic stabilization difficulties to "imported inflation": specifically, it was asserted that the European economies were being subjected to the inflationary effects of the U.S. balance of payments deficits, and especially to the need of the European central banks (under the par-value system) to buy accruing dollars and, in the process, finance the U.S. deficits. This emphasis upon the U.S. role in European inflation was bound to intensify when the U.S. inflation accelerated after 1965 and especially when its balance-of-payments deficits were greatly enlarged after 1970.

This emphasis was particularly congenial to the thinking of economists who found in the global aspects of balance-of-payments adjustment under fixed rates a framework to understand the international transmission of inflation, as they perceived the process. To these economists, explanations which neglected the underlying global elements and, instead, emphasized only local developments--such as "wage explosion"--were "largely beside the point: they assign causality to the mechanisms by which more fundamental causes operate to diffuse the world inflationary process."^{1/} According to Johnson, the direct cause of the global inflation was "primarily ... the excessively expansionary monetary policy pursued by the United States in recent years, and diffused to the rest of the world through the U.S. balance of payments deficit."^{2/} Mundell had expressed a similar view: "the world inflation has a monetary cause and ... the U.S.-dollar and the Euro-dollar are at the center of it."^{3/} In this view, the United States as the world's reserve center was the main determinant of world price trends, Johnson explained that, "if the reserve currency country begins to inflate at an immodest pace, ... (it) then becomes an active source of

^{1/} Harry G. Johnson, "Inflation and World Trade: A 'Monetarist' View," Journal of World Trade Law, Jan.-Feb, 1972, p. 16.

^{2/} Ibid., p. 17.

^{3/} Robert A. Mundell, "World Inflation and the Eurodollar," Note Economiche, n.2, 1971, ed. Monte dei Paschi di Siena, p. 18.

inflation within the system, through the direct influence of its own prices on world prices, through the demand-injecting influence of a deterioration in its current account, and through the monetary implications for others of a vastly enlarged outflow of its currency."^{1/}

International transmission under pegged exchange rates -

This paper will review the international transmission of inflation among the industrial countries in an increasingly interdependent world economy, as distinguished from purely domestic causal factors. We will be particularly concerned with the international channels of transmission for countries with balance-of-payments surpluses under a system of pegged exchange rates for the period from 1958 to 1973.

Because of the massive recent international private capital flows, there has been much attention to the monetary aspects of world inflation. But attention to these monetary factors may lead economists to neglect the role of non-monetary channels in the international transmission process. A reconsideration of European experience during the 1960's reveals that (i) income and (ii) price as well as (iii) monetary mechanisms of transmission can be distinguished for analytical purposes. A country is likely to experience an impact on its domestic economy from external disturbance through each of them.

^{1/} Harry G. Johnson, "The Bretton Woods System, Key Currencies, and the 'Dollar Crisis' of 1971, The Three Banks Review, June 1972, p. 18.

The monetary aspects of the transmission mechanism have long been emphasized by economists. Under any system of pegged or officially-supported exchange rates, the central bank augments internal liquidity when it purchases the foreign-currency receipts of the customers of the local banks. There was a widely-held view that these internal liquidity effects of a balance-of-payments surplus or deficit were the primary element in the mechanics of world inflation long before the extraordinary monetary flows after 1970 revived professional interest in an international monetary explanation of the transmission process. The foreign exchange purchases by the central bank are bound to augment the domestic monetary base; as a result, economists have been led to explore how, and to what extent, the monetary authorities might offset the additional primary reserve balances or, failing that, might limit any secondary credit creation by the banking system.

A concern with purely monetary phenomena, however, ought not lead to the neglect of other key elements in the process of world inflation. In particular, current-account surpluses can directly add to domestic incomes and have inflationary effects apart from the monetary expansion associated with central bank purchases of foreign currencies. Through the foreign-trade multiplier, added export sales can stimulate domestic investment (as the entrepreneur adds to his plant or inventory capacity) and then consumption. There was in practice in the surplus European countries and in Japan a clearly

defined cycle of internal business expansion which was export-led: that is, an initial growth in export sales often induced a cycle of domestic investment and then a boom in consumer spending. When the authorities checked the consumer boom, their restraint program often provided the basis for a further surge in export sales.

The importance of a second non-monetary transmission channel has recently been underscored: the key role played by price developments as an independent mechanism for spreading inflation from country to country. If there is an inflation in country A, there will be a rise in the price of its exports and the higher prices which its trading partners pay for A's goods can push up their local prices at the raw material, intermediate and/or final goods stage. Similarly, an inflation in goods prices abroad will push up prices on A's imports and then its internal costs and prices. The channels through which these price effects are transmitted can be complex, as we shall discuss later in this paper.

Because these direct price effects are necessarily associated with the movement of commodities and labor across national boundaries, the phenomenal post-World War II expansion in international trade and investment has undoubtedly increased the importance of this channel of transmission. The price effects associated with a growing flow of goods, labor and capital among the European countries have also strengthened the role of regional--as compared with global--factors in spreading inflation among the Common Market countries.

In addition to prices of traded goods and services, price developments of an expectational character have also been a key element in recent domestic economic disturbance among the industrial countries. The difficulties these countries have had in controlling cost-push inflation, even with less than full utilization of internal economic capacity, and in avoiding stubborn inflationary expectations at home help to explain why inflationary price developments abroad can directly and indirectly add to the internal disturbance. Evidence that these direct and expectational price factors have become powerful elements in the international transmission of inflation under contemporary conditions is found in the surge in prices, both in world commodity markets and in the domestic economies of the major industrial countries in early 1973.

Channels of transmission with exchange-rate flexibility - The channels of transmission of world inflation would necessarily be different in a system of flexible exchange rates. An increased foreign demand would then not add to the internal monetary base but merely push up the spot rate. The domestic income effects would also differ. An increased demand for A's merchandise exports would push up the exchange rate and not produce as large an expansion in total export sales as would have occurred had the spot rate been pegged. An increased demand for A's financial assets would also push up the spot rate; but there could be in this case an actual reduction in export sales and hence in the profits and incomes of affected export

firms. Had the exchange rate been pegged, by contrast, the capital inflow would have been added to the official reserves and the export industries would not face a loss in foreign business.

Similarly, foreign price developments would also affect the domestic economy under flexible exchange rates. If there is inflation abroad, there should be a tendency for the exchange rate to appreciate and cushion the domestic impact of foreign price rises. To the extent that the higher spot rate cuts back export sales or reduces the local-currency prices of foreign imports, the direct price effects will be less under flexible than under fixed rates. On the other hand, a declining exchange rate tends to push up domestic prices, both in the higher direct costs of imports and in stimulating foreign sales, often at rising local-currency prices. The price effects from exchange-rate fluctuations can be particularly disturbing when the authorities are attempting to bring cost-push or expectational domestic inflation under control.

Insulating the national economy from external inflation - The national authorities have tried to insulate their economies from the contagion of foreign inflation. They have devised neutralizing measures which can be grouped under the four headings which Friedman^{1/} alluded to in connection with the policy options available to correct balance-of-payments disequilibria:

^{1/} Milton Friedman, "The Case for Flexible Exchange Rates," reprinted in Foreign Trade and Finance ed. by W.R. Allen and C.L. Allen, (New York: The Macmillan Co., 1959), pp. 316ff.

- (1) To alter the exchange rate;
- (2) To impose controls;
- (3) To finance external surpluses and deficits out of the official reserves; and
- (4) To deflate the economy.

A wide variety of governmental measures which countries with external surpluses and a concern about "imported inflation" could take can be identified under each of these headings. We have already mentioned the anti-inflationary impacts of allowing the exchange rate to rise. Among control measures, the surplus countries in Europe and Japan have been concerned to reduce foreign capital inflows, not outflows, and have introduced regulations aimed at limiting (i) borrowings abroad by local entrepreneurs and financial institutions and (ii) the acquisition by non-residents of many types of local-currency assets.

Thirdly, the central bank can absorb the incoming foreign currencies into the national official reserves. In this case, the authorities must find ways to offset their effects upon the domestic monetary base and upon the credit-extension capabilities of local financial institutions. There is a substantial professional literature concerned with technical and policy aspects of the offsetting process. Finally, the authorities can attempt to insulate the domestic economy by reducing the rate of growth in internal incomes in step with the domestic expansionary effects of added foreign sales.

The national stabilization programs of the industrial countries have encompassed widely differing combinations of measures under these four broad policy options. The limited effectiveness of these stabilization efforts is demonstrated by the generality of inflationary trends in all of them. Can this lack of success be attributed to the inadequacy of national stabilization programs to contain the domestically-generated inflation or does it reflect instead the international transmission of inflation which has created forces powerful enough to negate attempts at national autonomy in an inflationary world economic environment? Our attention will be focused on the ways in which international factors have impinged directly to threaten internal economic stability in the industrial countries, apart from the purely domestic sources of inflation. We begin with a summary of the main facts about world inflationary trends.

European inflation and U.S. external deficits

The inflation after 1965 in U.S. prices and costs was so severe and the balance-of-payments deficits in 1971 and 1972 so unprecedented that it was not difficult to find evidence that the United States was the center of, and the primary contributor to, a world inflationary surge. When prices also accelerated in other industrial countries, especially after 1968, economists and government officials began to perceive a process of world inflation emanating from a reserve-currency center which was creating an excess of domestic and of international liquidity to other industrial countries. The economic facts after mid-1965 were thought to document this hypothesis.

World inflation: the measurement problem - The report released late in 1970 by the Organization for Economic Co-operation and Development on Inflation: The Present Problem appeared to support the hypothesis of a global inflationary surge emanating from the United States. The report found that the general level of prices in the OECD countries as a group increased from a yearly average of 2.6% in 1960-1965 period to an estimated 5.5% for 1970 while U.S. prices rose from 1.5% to 5.1%. (See Table 1.)

(Insert Table 1)

The international character of the transmission mechanism was further supported by the fact that "prices in international

TABLE 1

Summary of Price Developments in OECD Area^{1/}
(Percentage changes at annual rates)

	1960-1965	1965-1968	1969	1970
United States	1.5	3.3	4.7	5.1
Other major OECD countries	4.0	3.3	4.8	5.9
Smaller OECD North	4.3	4.4	4.1	5.1
Other	4.9	4.5	(3.5)	(4.8)
Total OECD	2.6	3.4	4.7	5.5

^{1/} GDP deflators at constant 1968 exchange rates based on the national accounts of the OECD countries and on Secretariat estimates.

SOURCE: Inflation: The Present Problem, OECD, Paris, December 1970, p. 15.

trade have been rising as fast--and, recently, faster--than overall domestic price levels."^{1/} In addition, it was found that "there has been noticeably more synchronization in price movements than in demand conditions."^{2/} On the basis of the OECD data, for example, Caves has compared average annual rates of change in consumer prices for 20 OECD countries for the 1959-64 and 1964-69 periods; he found that the mean inflation rate rose from 3.1% to 4.2%; that the standard deviation fell slightly from 1.3 to 1.2; and that the coefficient of variation dropped sharply from 0.40 to 0.30.^{3/} These facts could be viewed as evidence to support the world-inflation hypothesis.^{4/}

Unfortunately, world inflation is an altogether ambiguous concept. For a national currency, value can be defined either in terms of goods or of a financial numeraire. The decline in its value can be measured by either of these standards. Economists usually measure the decline in the domestic value of a currency in terms of goods. It is the rise in goods prices, and not the decline in the numeraire value of the currency, which has the more profound economic and social impact of an inflation on the general public.

^{1/} Inflation: The Present Problem, Organization for Economic Co-operation and Development, December 1970, p. 23.

^{2/} Ibid., p. 7.

^{3/} R.E. Caves, "Looking At Inflation in the Open Economy," Harvard Institute of Economic Research, Discussion Paper number 286, March 1973, mimeo., footnote 39, (p. 38).

^{4/} Mundell, op. cit., p. 14.

How we ought to measure world inflation is less clear-cut. For example, Mundell recognizes the uncertainty of the definition of world inflation as "a systematic decline in the value of international money."^{1/} There is after all no world money and no clear concept of what we ought to regard it to be. Mundell resolves these uncertainties by a pragmatic judgment: "when prices in the U.S., U.K., Italy, France, Germany and Canada are going up by not less than 5 per cent a year, there is no ambiguity in the concept of world inflation even if one or more of the smaller countries allows an exchange rate variation." (pp. 4-5.)

By contrast, the OECD study measured world inflation in terms of a composite index of GNP deflators for each member country, weighted by its relative GNP for 1968. This index showed a rapid acceleration in price changes for the OECD area for 1969 and 1970. (See Table 1.)

But this sharp acceleration in the summary number, we find, is less a measure of area-wide price developments than of price rises in North America. Canada and the United States accounted for nearly 50% of aggregate output for these countries and the movements in the summary number obviously reflect the price acceleration in those countries. In brief, the measure of world inflation provided in the study probably more fairly represents conditions in North

^{1/} Mundell, "World Inflation and the Euro-dollar," op. cit., p. 3.

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^{1/} Mundell, "World Inflation and the Euro-dollar," op. cit., p. 3.

America--for the period up to late 1970 covered in the computations-- than it measures price developments in the other industrial countries. The study itself recognizes this difference: "giving equal weight to the price performance in individual countries, there remains evidence of an acceleration in the price rise, although it is less clear-cut."^{1/} This aspect is further supported by the data in Table 1 which show that 1969 prices were close to the average for the 1960-65 period for the three regional groupings outside the United States. (See Table 1.)

Price movements in the Common Market countries - The lack of synchronization between price developments in the Common Market countries and in the United States during the years covered by the OECD survey is further demonstrated by the data on price changes in major European countries found in Table 2. The rate of price increase for the (six) Common Market countries averaged 4.2% in the 1961-65 period compared to 4.0% in the 1966-70 period. (See Table 2.) Furthermore, European price advances were particularly high between 1962 and 1964 when U.S. prices were rising at an annual rate of about 1.5% (See Table 1.) European price increases actually slowed down perceptibly between 1964 and 1968 when U.S. prices were accelerating rapidly. During the earlier period, the index of European prices reflected the impact of demand inflation and

^{1/} OECD study, Ibid., p. 15.

then a wage explosion in Italy in 1962-63 and then in the Netherlands in 1963-64, together with excess demand in France from 1962 to 1964. The subsequent slowdown in the combined index between 1965 and 1968 reflected mainly the impact of stabilization in France and Italy and, during 1967 and 1968, the German recession.

(Insert Table 2)

The European view during the mid-1960's was to explain their domestic inflations of the 1960 to 1966 period in terms of "imported inflation." The "imported inflation" was explained for the Netherlands in terms applicable to each of them: there was a "monetary expansion in the surplus countries, as well as income and price inflation, which will not cease until that inflation and the consequent rise in costs have gradually redressed the balance."^{1/} Many European economists attributed their domestic inflations to the liquidity effects of central-bank purchases of accruing foreign exchange, and the reserve-asset accruals to the U.S. external deficits.

U.S. economists, however, could not agree that the United States was the primary source of the European inflation. On the contrary, they thought that the balance of statistical evidence supported an hypothesis that the United States was exerting a deflationary, not an inflationary, influence on the world economy.

^{1/} Netherlands Bank Report for the Year 1965, p. 24.

TABLE 2

Percentage changes in GNP deflators in
selected European countries, 1960 to 1972

Change from preceding years	France	Germany	Italy	Nether- lands	Belgium	Total Common Market <u>1/</u>	United Kingdom
1961	3.3	4.4	2.7	2.4	1.1	3.4	3.2
1962	4.8	4.0	5.7	3.3	1.1	4.4	3.7
1963	6.0	3.1	8.7	5.0	2.9	5.2	2.1
1964	4.0	2.8	6.3	8.0	4.7	4.3	3.0
1965	2.4	3.6	3.8	5.8	5.1	3.5	4.7
1966	2.9	3.4	2.2	6.0	4.4	3.3	4.4
1967	2.9	1.3	3.0	4.1	3.0	2.4	3.1
1968	4.7	1.6	1.5	3.6	2.7	2.7	4.1
1969	8.0	3.5	4.1	5.7	3.8	5.2	5.0
1970	5.5	7.2	6.3	4.6	5.1	6.2	7.2
1971	5.0	7.7	6.9	7.5	5.8	6.6	9.0
1972	5.8	6.1	5.8	9.5	6.0	6.2	6.7

1/ GNP deflators weighted by 1970 relative GNP values for the original six European countries only. Price data from OECD National Accounts, 1960-1970, p. 13.

The rapidly growing U.S. export surplus after 1960 was adding substantial resources to the rest of the world, if not to the European countries, and not withdrawing them. Further, U.S. prices were increasing much more slowly than those in the Common Market countries between 1960 and 1965. In addition, the U.S. rate of monetary expansion was the lowest among the industrial countries, at least until 1967.

As it turned out, the source of Europe's inflation in the early 1960's was widely debated, and never resolved, as between U.S. and European economists and officials. Because this debate took place in a period when the reserve-center country was achieving an impressive domestic-stabilization performance, a fresh review of the controversy may add to our understanding of the transmission of inflationary impulses from country to country. It may provide insight into a dimension of the process of world inflation which may be neglected in a period of substantial inflation in the reserve-center country.

"Imported inflation": The European experience, 1960 to 1970

The main facts about the combined balances of payments of the six original Common Market countries which form the background for this trans-Atlantic debate about the character of "imported inflation" are summarized in Table 3. Between 1956-1957 and 1958-1961, the Common Market countries as a group achieved a major increase in their surplus on current transfers (goods, services and unilateral transfers) of nearly \$2.0 billion per year; there were comparable additions to their official reserves. (See Table 3.) In the next period, from 1962 to 1965, the surpluses were reduced somewhat but remained large: the surpluses amounted to about \$1.6 billion and reported additions to official reserves to \$1.3 billion.

(Insert Table 3)

The debate centered on one key question: were the domestic liquidity effects of the U.S. deficits the primary source of the European inflation? The United States was recording a growing export surplus, and outstanding domestic price stability; hence, it followed that attention would be turned to the effects on the European domestic economies of the substantial increases in their reported official reserves between 1958 and 1966. Central bank purchases of foreign currencies were adding materially to domestic liquidity, especially in the smaller European countries, and so it seemed to follow that an international monetary explanation was

TABLE 3

European Economic Community: Summary Balance of Payments,
Annual Averages for Period, 1956 to 1966
 (in millions of dollars)

	1956-57	1958-61	1962-66
Goods, services, and private unilateral transfers	630	2,510	1,560
Official unilateral transfers	)	-760	-1,020
Official capital	) -766	-690	-420
Prepayment of official debt	) 0	-350	-315
Direct Investment	)	50	500
Other private long-term capital	) 152	780	815
Net military transactions	) --a	895	24
Non-bank short-term capital and errors and omissions	) 321	-145	-290
Balance on non-monetary transactions	337^b	2,290	1,170
Financing			
Change in official reserves	368 ^b	2,330	1,270
Short-term banking flows	--150	-40	-100

a Not separately available for these years.

b Does not add because, in French accounts, transactions between the overseas franc area and the non-franc area affected through banks and other institutions in France (thus affecting French monetary reserves) have been excluded so that the totals will not balance out.

SOURCE: 1958 to 1966, U.S. Treasury Department, Maintaining the Strength of the U.S. Dollar in a Strong Free World Economy, January 1968, Table 22, p. 118; and for 1956 to 1957, International Monetary Fund.

relevant to their "imported inflation." These central-bank purchases of foreign currencies were at the same time (i) enlarging the reserve base of the banking system; and (ii) facilitating a secondary expansion in commercial bank deposits and, as they added to their earning assets, in aggregate bank credit.

Reserve accruals and central banking offsets - There was the conviction among many European economists that, in a world of fixed exchange rates and private capital mobility, "the Central bank is bound to lose control of the money supply, and therefore over the level of total spending."^{1/} Even if the central bank could "for a time at least, prevent the secondary deposit expansion by the commercial banks," the banking system was bound to acquire "sufficient cash to support the primary deposit expansion which derives directly from the sales to them of foreign exchange by their customers." Scott and Schmidt were more optimistic: "Both the potential primary and secondary expansions ... could be prevented through open market sales," a conclusion subsequently challenged, in part on technical grounds, by Oppenheimer.^{2/}

^{1/} Friedrich A. Lutz, International Payments and Monetary Policy in the World Today, Wicksell Lectures, 1961 (Stockholm: Almqvist and Wiksell, 1961), p. 37.

^{2/} Ira O. Scott and Wilson E. Schmidt, "Imported Inflation and Monetary Policy," Banca Nazionale del Lavoro Quarterly Review, No. 71 (Dec. 1964), p. 395; Peter H. Oppenheimer, "Imported Inflation and Monetary Policy: A Comment" and the rejoinder by Scott-Schmidt, Ibid., No. 73 (June 1965), pp. 191-200.

At first the experiences of the European central banks seemed to support a pessimistic judgment. Even though they raised discount rate on five occasions between mid-1959 and mid-1960, the German authorities were unable to regain control of the domestic monetary base during this period of substantial surplus. On the contrary, attempts to tighten domestic liquidity in Germany merely induced unwanted inflows of short-term funds from abroad. The authorities first decided to relax their internal restraints late in 1960 and, shortly thereafter in March 1961, to revalue the D-mark.

The debate then concentrated upon the question of whether the European countries were or were not able to sterilize the domestic monetary effects of the reserve accruals. From a statistical point of view, the debate tended to revolve around the extent to which the European central banks added to their domestic assets during the period. If they did so, it was argued by Scott-Schmidt^{1/} and later by Baffi,^{2/} domestic credit creation could not have been the involuntary result of the inability of European central banks to offset the domestic effects of their reserve accruals, as Lutz and others had suggested. On the contrary, the argument ran, the acquisition of domestic assets could only

^{1/} Scott and Schmidt, op. cit., pp. 390-403.

^{2/} Paolo Baffi, "Western European Inflation and the Reserve Currencies," Banca Nazionale del Lavoro Quarterly Review, No. 34, March 1960, p. 11.

mean that the central banks wanted to add to the local monetary base. Had the central banks wanted to pursue more restrictive credit policies, Baffi was convinced, they would have introduced the new policy tools earlier; it was his view that technical central-banking or institutional considerations "would not have really prevented the adoption of a more severe policy line if in the judgment of the monetary authorities the situation had called for it."^{1/}

What the banking statistics showed - The European banking data showed that the central banks in the larger Common Market countries added substantially to their domestic assets, suggesting that the countries had domestic credit needs beyond the liquidity created by the reserve accruals. Only in Belgium and the Netherlands was the acquisition of domestic assets negligible or negative. Goldstein, for example, found that the increase in domestic assets as a percentage of total central bank assets from 1958 to 1971 varied as follows:^{2/}

Italy	69%	Belgium	-4%
Germany	43%	Netherlands	1%
France	35%		

He concluded that "we can only infer that the secular expansion in the money base provided by the foreign-exchange accruals was insufficient to meet official monetary growth objectives." (p. 7.) He

^{1/} Ibid., p. 11.

^{2/} Henry N. Goldstein, "Imported Inflation--A Phrase in Search of a Phenomenon," unpublished manuscript, August 1972, mimeograph, p. 3.

also found that periods of exceptional reserve accruals were not associated with above-average rates of monetary expansion.

This simple procedure could not be extended to measure the secondary liquidity creation of local financial institutions on the basis of the additions to primary liquidity. The relationship between changes in primary liquidity and in the lending capacities of the commercial banks has proved to be, in the experience of the Bundesbank, "far from being accurately predictable,"^{1/} even with the use of behavior models of the banking system in the national economy.

As an alternative, the OECD staff compared the expansion in primary liquidity (measured by the country's surplus on non-monetary transactions) in terms of the GNP. They proposed as a rough and arbitrary measure that the U.S. payments deficit would be judged to have had "significant monetary repercussions" on the surplus country when the expansion in primary liquidity (i.e. the surplus on non-monetary transactions) would exceed 1% of GNP.

The findings on the basis of this criterion were largely negative, at least until the massive outflows of 1971 and 1972.^{2/} Between 1965 and 1967, the U.S. external deficit itself was small in relation to the expansion in money supply in the "other" OECD

1/ Report of the Deutsche Bundesbank for the Year 1970, pp. 25ff.

2/ "The International Transmission of Inflation," The OECD Economic Outlook, July 1973, pp. 88ff.

countries. The external surpluses of these countries fell mostly in the 1 to 2 and 2 to 3 per cent range. For the period, 1968 and 1969, the monetarist hypothesis could hope for little statistical support because the temporary surplus in the U.S. balance of payments (on an official reserve transactions basis) would produce a small contractionary impact on European money supplies.^{1/}

The OECD analysis also found in the evidence from 1970 to 1972 only limited support for a monetary explanation of the international mechanism. Even in 1970, the external surplus was equivalent to only 18% of the additions to primary liquidity for these countries as a group and the consequent expansion in the internal money supply at an annual rate of 13% 'was itself only 'normal' by past standards ... which implies that the 'extra' inflows of liquidity were, on the average, sterilized.^{2/} In 1971, however, the growth in money supply reached 17-1/2% and the external surplus was equivalent to 24% of the increase in the national monetary base. In 1972, the increase in money supply increased further to 20% even though the external surpluses declined in step with the lower U.S. payments deficit.

Even the facts for 1971 and 1972 were regarded as only limited support for a role for liquidity creation through external

^{1/} Ibid., p. 90. The average percentage contribution to the growth in the money supply was (-)2% in 1968 and (-)4% in 1969. Italics found in the original text.

^{2/} Ibid., p. 90.

payments surpluses in the international inflation cycle. The OECD study concluded that "since ... price increases remained high or accelerated despite an easing of demand pressures, an a priori case could be made for attributing an important causal role to the international monetary transmission process."^{1/} But it could find only "one specific causal chain which appears plausible, whereby high rates of monetary expansion have a direct effect on the price of land and other real property, and sharp "speculative" rises in these prices ... (push) up inflationary expectations in the economy as a whole." The expansion of central banking funds through involuntary official dollar purchases had more direct effects on private liquidity in the European countries in 1971 and 1972 than these conclusions would suggest. Even the study itself agrees that large capital inflows complicated the task of implementing monetary policy, especially in Germany and Switzerland, and to this extent the effectiveness of their demand-management efforts was impaired. There remains at issue, however, the question of whether the impairment associated with these liquidity leakages was or was not a significant source of internal inflation.

Recent econometric research - The OECD attempt to measure the domestic liquidity effects from foreign capital inflows rested upon a relatively limited analytical model. Two recent studies have attempted much more broadly to measure the extent to which

^{1/} Ibid., p. 90.

the German authorities have been able to control the domestic money supply in an open economy with fixed exchange rates. Willms concluded from an econometric model of the German money-supply process that, for the period from 1958 to 1970, "the German authorities have been relatively successful in neutralizing the impact of the noncontrolled or indirectly controlled components of the money supply process by changing directly the controlled components."^{1/} The most important instruments they used to offset the growth in central bank holdings of foreign currencies were: (1) changes in required reserves; and (2) placements of deposits of the public authorities and other governmental bodies with the Bundesbank.^{2/} Willms distinguished between the "controlled" portion of the total change in the monetary base (the dependent term of the basic equation) and the changes in base money due to changes in the central bank's foreign assets. He concluded that the authorities were able, by varying the controlled component through their policy instruments, to offset about 86% of the changes in monetary base associated with changes in foreign assets.

Subsequently, Porter reached the opposite conclusion. Using a monthly instead of quarterly model as Willms had done, he found that changes in reserve requirements were regularly

^{1/} Manfred Willms, "Controlling Money in an Open Economy: The German Case," Federal Reserve Bank of St. Louis Review, April 1971, p. 10.

^{2/} Ibid., p. 24.

"substantially and rapidly offset in their effect on bank liquidity by capital inflows recorded mainly in the errors and omissions component of the balance of payments."^{1/} Porter explicitly found that "the changes in required reserves induced the capital inflow,"^{2/} and that an offset of 80% would take place by the end of the month in which reserve requirements had been altered.

An important question about the Porter model is whether the short-term capital flows which occurred were primarily a monetary or an exchange-rate phenomenon or both. The degree of statistical association between changes in reserve requirements and in short-term capital inflow was significantly higher when the "errors and omissions" residual was combined with recorded short-term capital inflows than it was with recorded flows alone. For most of the large trading countries, the "errors and omissions" item is as sensitive to exchange-rate speculation (under pegged rates) as to changes in internal credit conditions, if not more so. The big swings in this residual are ordinarily associated with the timing and currency of commercial payments for ordinary transactions--that is, they are largely "leads and lags" which usually respond to exchange-rate expectations.

There is in general an absence in the Porter work of a good proxy for the effects of exchange-rate speculation on German

^{1/} Michal G. Porter, "Capital Flows as an Offset to Monetary Policy: The German Experience," IMF Staff Papers, July 1972, p. 395.

^{2/} Ibid., p. 415. Italics in original.

short-term capital flows. He himself noted that "the total explanatory power of the regressions estimated in this study is substantially less than would be obtained by supplementing the analysis with variables capturing speculative capital flows, but the explanation of speculative flows is likely to be a complicated and possibly somewhat arbitrary procedure."^{1/} He did introduce dummy variables for periods of obvious speculation but there is no basis for evaluating their accuracy. His use of the covered interest rate differential as an independent variable, he also noted, "is incomplete in times of speculation, since in order to capture the speculative flows it would be necessary to use ... the uncovered interest rate differentials."^{2/}

In practice, the short-term capital inflows, especially during disturbed periods, were prompted by exchange-rate speculation as well as by credit-restraint considerations. Each of the two factors frequently reinforced the incentive provided by the other. In the absence of a good measure of speculative expectations, it is bound to be difficult to separate these two incentives for capital inflow.

There is thus an area of ambiguity in this econometric work: the identification of the chain of causation between variables with a high degree of statistical association. Porter in fact relies

^{1/} Ibid., p. 417.

^{2/} Ibid., p. 401.

on this argument to challenge Willms' contrary findings. He noted that the results of Willms study "are consistent with the totally different interpretation advanced in this paper--namely, that the changes in required reserves induced the capital inflow."^{1/} Porter would suggest that the changes in the "controlled" component of the monetary base was responsible for the changes associated with the fluctuations in foreign assets, and not the other way around.

There can be no doubt that short-term capital inflows, and especially the unrecorded "errors and omissions" residual, were sensitive to changes in Germany's international position. Periods of export expansion often sparked domestic business expansion and were associated with central bank action to slow down the growth in demand, often inducing German firms to borrow abroad. But the strong export position also stimulated expectations of exchange-rate change and induced inflows of non-resident funds, especially on commercial transactions, as a prudent precaution against the possibility that the D-mark might appreciate, often speeding up the pace of monetary restraint by the central bank. Whether it was the credit restraint which induced the capital inflows or the capital inflow which forced the authorities to tighten credit cannot be determined on the basis of the statistical evidence.

Monetary policy and European stabilization - When we look back over the entire period from 1958 to 1972, however, it is evident that the European authorities depended upon monetary policy

^{1/} Ibid., p. 415. Italics in the original text.

as the primary instrument of domestic economic stabilization, often without significant support from fiscal policy. Despite the balance-of-payments surpluses, the European central banks were not prepared to abandon what they regarded as their primary responsibility to promote domestic economic stability and to protect the purchasing power. They proceeded, on occasion even through a disorderly process of trial and error, to fashion new tools of central banking or to introduce novel adaptations of traditional ones.^{1/} Their success in these efforts varied from country to country and, within a particular country, from time to time. But these efforts to offset the domestic liquidity effects from external sources were not overwhelmed until the U.S. payments deficits became massive and the European countries took exchange-policy action (floating, dual exchange markets and comprehensive controls over private short-term capital inflow) to protect their domestic economies.

As a practical matter, then, statements that central banking policy was impotent because it induced offsetting capital inflows are challenged by the preeminent role of monetary policy between 1958 and 1972 in the demand-management policies of the larger European countries. On the other hand, the full role of the monetary element in the international inflation mechanism cannot be

^{1/} The technical instruments utilized by the European central banks are reviewed in detail in my study, External Surpluses, Capital Flows, and Credit Policy in the European Economic Community, 1958 to 1967, Princeton Studies in International Finance No. 22, 1969.

measured by the extent to which the central banks were able to control the external contribution to primary liquidity. For the monetary flows had substantial secondary liquidity effects.

Entrepreneurs in non-bank sectors found their current cash flows augmented by export sales and by access to foreign money markets or by financial transactions with foreign residents. Finally, there is the "same year" fallacy: that is, important monetary effects are likely to be neglected when attention is focused upon year-to-year movements in key economic variables when there are substantial, if uncertain, lags between additions to private liquidity and increases in private spending in the larger European economies.

Accordingly, the recent OECD study may understate the monetary role in the mechanics of "imported inflation" in the Common Market countries. The German authorities, it will be remembered, have emphasized their difficulties in controlling the growth in non-bank liquidity. They recently reported that the central bank achievement of the "complete neutralization of the liquidity inflows to domestic banks ... prevents the banks from stepping up their lending to domestic customers on the grounds of their additional liquidity, but it does not curb the expansive effects exerted by the inflows of funds from abroad to non-banks on the money stock."^{1/}

The recent Japanese experience also underscores the direct contribution to major internal price advances in 1972 and 1973 made

^{1/} Monthly Report of the Deutsche Bundesbank, March 1973, p. 3.

by the growth in private liquidity from massive export surpluses and imports of funds from abroad. The large trading companies (which handle the bulk of export sales) drew on their current cash flows to finance speculative activities. The expansion in private liquidity was much more general: a survey of some 460 corporations revealed that their "ready liquidity" had risen from 1.00 month in 1970 to 1.60 months in mid-1972.^{1/} The boom in stock prices during 1972 "has been caused by a buying campaign by general corporations, who now are said to own much more of the entire listed stocks than private stock holders, and it is quite understandable in view of the sharp increase in corporate liquidity. Alleged cornering of land by big corporations may be only a quite natural development."^{2/}

These corporate purchases during 1972 became so prominent, in fact, that they became the subject of an extraordinary government inquiry. It was found, according to a report in the United Kingdom press, that the six largest Japanese trading houses in 1972 "had made profits of £268 m from 'speculative' purchases of land, securities and local commodities. Of this, real estate profits provided £175 m, security profits £35 m, and the balance of £58 m arose from 'hoarding and stock piling' of seven key commodities."^{3/} Their purchases also had a measurable impact on prices in some foreign markets. It is

^{1/} The Oriental Economist, April 1973, p. 11.

^{2/} Ibid., p. 11.

^{3/} The Economist (London), April 7, 1973, p. 94.

estimated, for example, that Japan absorbed during the month of February (1973) as much as three-quarters of the supplies reaching world wool markets. Their purchases in lumber, soybeans and certain other commodities contributed to the sharp advances in U.S. prices early in 1973. By the spring of 1973, Japanese domestic prices were rising rapidly. On a year-over-year basis, the aggregate wholesale price index was up 11% in March and 11.4% in April, the Tokyo consumer price index was up 9% in March and 10.1% in April.

Nonetheless, a purely monetary explanation of domestic inflation would neglect two key transmission elements important in recent experience: (i) the domestic income effects of current account surpluses; and (ii) the direct effects of rising prices abroad. The Oriental Economist recently emphasized the importance of the non-monetary sources of Japanese inflation; it attributed "the current soaring of commodity prices" in Japan to five factors: (i) import inflation from price advances abroad (even after the yen costs had been reduced by the appreciation of the currency); (ii) demand shifts from rising fiscal and housing spending; (iii) cost push from higher wages; (iv) the cyclical business upswing; and (v) "imaginary demand based on speculative operations."^{1/} We shall also find these non-monetary channels important in the German experience as we review the domestic effects of Germany's large export surpluses after 1966 in the next section of this study.

^{1/} The Oriental Economist, April 1973, p. 5.

Non-monetary channel: domestic income effects of export surpluses

The Common Market countries as a group had current-account as well as balance-of-payments surpluses throughout the period under review. Their surpluses on goods, services and unilateral transfers increased from an annual average of \$630 million for 1956-57 to \$2.5 billion between 1958 and 1961 and to \$1.6 billion between 1962 and 1966. (See Table 3.) These surpluses represented primarily a surge in export sales. For the 1959 to 1961 period, Baffi has estimated that the combined current-account surpluses of the six Common Market countries as a group averaged 2% of their GNP.^{1/}

These current-account surpluses directly added to private liquidity. Even when the liquidity effects were neutralized by the central bank, the export expansion itself remained a potent external source of domestic business expansion. Through the foreign-trade multiplier, the surge in export sales after 1957 directly impinged upon the output of goods and services and upon the demand for labor. Because the export boom after 1957 occurred in a period of full employment, rapid growth and optimistic entrepreneurial expectations, it also helped to set into motion a secondary process of wage-price inflation. Excess pressures on the labor market produced a "wage explosion" in Italy in 1962-63 and in the Netherlands in

^{1/} Paolo Baffi, "Western European Inflation and the Reserve Currencies," Banca Nazionale del Lavoro Quarterly Review, No. 84. (March 1968) pp. 14-15.

1963-64 and less explosive but continuing wage-price spirals in France, Germany and Belgium in the mid-1960's.

The growing regional integration contributed to a "spill over" of excess demand from country to country. The 1963-64 growth in German exports can be attributed not to the U.S. external deficit but to excess demand in Italy and France. Similarly, German demand for Dutch manpower contributed to the excess demand for labor and to the "wage explosion" in late 1963 in the Netherlands. With the Common Market countries as a group in continuous external surplus, one or more of them were exacerbating the domestic stabilization difficulties of their trading partners.

The acceleration of European inflation in the 1962-64 period (See Table 2) suggests a process of "imported inflation" more complex and subject to more substantial lags than is suggested by explanatory models which emphasize year-to-year changes in monetary or other key economic aggregates. For example, Baffi cited the year-to-year increases in European prices as compared to the percentage declines in the current-account as a proportion of GNP after 1959 as evidence that "the movement of prices was to a large extent governed by changes in the domestic origin in the volume of demand."^{1/} As a second example, some economists have interpreted the substantial year-to-year growth in domestic (as compared to the foreign) assets

^{1/} Baffi, "Western European Inflation and the Reserve Currencies," op. cit., p. 16.

of European central banks as evidence that the authorities desired-- on purely domestic grounds--growth in the internal monetary base beyond the amounts derived from external sources.^{1/}

This emphasis upon the domestic origin of inflationary impulses appears seriously to underestimate the delayed impact of the surge of European exports upon the course of their internal business developments after 1958. In German experience, for example, we can identify a rough pattern of export growth followed (along familiar foreign-trade multiplier lines) by an induced expansion in investment demand and then in domestic consumption. In 1959 and 1960, the slack from a falling off in the rate of increase in private consumption was taken up by a growth in exports: foreign sales accounted for more than 30% of the growth in GNP in the two years. (See Table 4.) Gross investment also jumped in 1959 and reached a peak in 1960, but private consumption did not become the main sustaining force of the boom until 1961 and did not reach a peak until 1962. There was a renewed stimulus from export sales by 1963 when the growth in gross investment slackened.

(Insert Table 4)

^{1/} Scott and Schmidt, "Imported Inflation and Monetary Policy," op. cit., pp. 390-403. Baffi compared the growth in foreign and in domestic assets for the 1959-1966 and found that, for small countries, the foreign assets accounted for the entire growth in the monetary base but, for the larger European countries, there was a significant domestic component." (See Baffi, op. cit., pp. 3-22.) Goldstein has also recently come to the same conclusion in his unpublished paper of August 1972, "Imported Inflation--A Phrase in Search of a Phenomenon," (mimeo.) pp. 6ff.

TABLE 4

Germany: Change in Aggregate Final Demand (including exports)
and Contribution of Selected Components to Total Change,
1951 - 1972

	GNP at market price		Contribution to change (per cent)			
	Billions of DM	Percentage Change	Exports	Gross Investment	Private Consumption	All Other
1951	120	22.1	34.3	19.4	47.7	-1.4
1952	137	14.3	19.9	27.5	47.4	5.2
1953	147	7.7	31.4	31.4	74.3	-37.1
1954	158	7.3	50.0	42.6	50.9	-43.5
1955	180	14.2	25.8	47.6	35.1	-8.5
1956	199	10.2	40.8	13.6	63.0	-17.4
1957	216	8.8	48.0	17.1	59.4	-24.5
1958	232	7.0	11.2	15.1	67.5	11.2
1959	251	8.4	33.0	41.8	45.4	-20.2
1960	302	11.5	31.8	44.3	42.9	-19.0
1961	333	10.0	8.3	30.7	54.8	6.2
1962	361	8.3	11.6	25.8	58.9	3.7
1963	384	6.6	30.0	14.2	54.4	1.4
1964	421	9.6	22.8	47.4	45.5	-15.7
1965	460	9.4	20.3	34.2	60.0	-14.5
1966	491	6.6	37.6	-8.6	63.4	7.6
1967 ^{a/}	495	0.8	(210.3)	(-423.1)	(-161.5)	(151.3)
1968	540	9.2	29.3	50.0	38.8	-18.1
1969	605	12.1	27.8	40.5	48.0	-16.3
1970	686	13.3	20.8	42.4	44.7	-7.9
1971	758	10.6	19.8	16.7	55.2	8.3
1972	828	9.2	21.1	16.0	55.6	7.3

SOURCE: 1951 to date, Wirtschaft und Statistik, Break in Series in 1960 when Saar and Berlin were added.

^{a/} Because absolute change was so small percentage changes in component series are without significance.

The German boom was set off by a sizeable trade surplus after mid-1963, largely the result of inflationary developments in France and Italy. The authorities steadily tightened credit conditions in 1964 and 1965, as the strength of the business expansion was maintained. By the second quarter of 1965, in fact, there was the first substantial current-account deficit in Germany since 1951. The cumulative effects of the government's program intensified, however, and by 1966 the German economy was entering what proved to be the most protracted recession in the past-war period.

As we can see in Table 4, exports became once again the major stimulus to the German recovery. Bernstein, in fact, offered this German experience as evidence that "fixed parities ... contribute(s) to monetary and economic stability in a more fundamental sense."^{1/} For the marked export expansion in 1966 to 1968 had moderated the effects on internal output and employment of an inadequate growth in home demand. Net exports grew from -0.1% of GNP in the boom year of 1965 to 1.4% in 1966 and to 3.3% during the recession year, 1967. This export surge "was a major factor in preventing a serious recession from emerging in Germany."^{2/}

The German recovery and European inflation - The German recovery did not proceed as planned. The expectation was that

^{1/} E.M. Bernstein, "Flexible Exchange Rates and International Adjustment" in The Economics of International Adjustment edited by R. Hinshaw (Baltimore: The Johns Hopkins Press, 1971), esp. pp. 160ff.

^{2/} Ibid., p. 161.

the large export surplus of 1966-67 would be reduced as the German economy shook off the recession and advanced toward full employment. But the export surplus persisted into 1968, largely because of an unexpected surge in foreign demand. German firms then responded strongly to the upsurge in foreign demand. The current-account surplus, amid a domestic boom, led private entrepreneurs to expect a revaluation of the DM by late 1968. Thereafter, there were unprecedented inflows into Germany on repeated occasions and the authorities found it necessary to revalue in 1969, to allow the DM to float in 1970 and 1971 and to revalue and float again in 1973.

The German experience underscores that critical dimensions of the processes of "imported inflation" can be neglected by a preoccupation with purely monetary phenomenon. For German business activity closely followed a pattern of cyclical expansion in which the growth in exports served an exogenous role, and the subsequent expansion in domestic investment and private consumption, an endogenous role. In this extended and interrelated dynamic model, it was no longer clear how external and internal stimuli to German business expansion could be neatly separated.

Non-monetary channel: rising goods prices abroad

In retrospect, the failure of the Common Market to respond more quickly to the post-1965 inflation in the United States can be explained in part by German economic developments. German wages and prices advanced only slightly in the 1967 and 1968 recession years. The extreme moderation union leaders adopted in wage negotiations in 1968 and even in 1969 undoubtedly reflected the extended business slowdown. But this moderation also led to increasing worker dissatisfaction, even to work stoppages of an irregular character, and in 1970 and 1971 to the only dramatic "wage explosion" in post-war German history when wage increases averaged for the overall economy between 12% and 14%.

In the view of the Bundesbank, however, "the labor market acted like a focal point for the tendencies towards overstrain in the economy" and "the upsetting of the internal balance had its primary cause in ... Germany's fundamental external disequilibrium."^{1/} What happened in Germany, in brief, was a combination of domestic and export spending which built up demand pressures to unprecedented levels. In 1970, for example, the rate of capacity utilization in industry averaged 93% or about 6% higher than the previous cyclical peak. As a result, the German economy experienced a further acceleration in price increases and unprecedentedly steep rises in unit labor

^{1/} Report of the Deutsche Bundesbank for the Year 1969, p. 7.

costs. The willingness of employers to grant extraordinary wage boosts undoubtedly reflected the ease with which they were able to pass through these added costs to foreign as well as to domestic customers. The surge in exports after 1966 is undoubted evidence that German prices of traded goods had lagged behind those in foreign countries and helps to explain the greater willingness of German entrepreneurs to grant wage increases than in earlier periods of cyclical expansion. The cost-push element contributed to a direct convergence between the inflation rate in Germany and abroad.

It had been expected that German price advances would slacken as excess demand pressures eased in 1971 and as the value of the DM drifted upward. Just as the strong boom in Germany from 1968 to mid-1970 had generated strong expansionary forces in its major trading partners, however, the acceleration of price advances abroad impeded the deceleration of German price and wage advances thereafter. For example, the Bundesbank reported that, despite the higher value for the DM, exporters were able to raise their DM prices more steeply as business activity picked up abroad in 1972; in addition, on the import side, the "stability gain" from lower DM costs of foreign goods was "foregone within a short period" by the world-wide intensification of inflationary tendencies.^{1/}

Direct price effects and international inflation - The continued buoyancy of foreign demand, even when the German business

1/ Report of the Deutsche Bundesbank for the Year 1972, p. 12.

recovery gained substantial momentum, supported the views within Germany of an important school of economists who have emphasized the direct effects of traded-goods prices in the world inflation process. In this view, inflation is transmitted from country to country directly through the immediate adjustment of prices of traded goods and not, as is often assumed, indirectly via an increase in liquidity caused by a favorable balance of payments of the country that is trying to resist inflationary pressures from abroad. Haberler has reported that the German Council of Economic Advisers held this view: namely, in an open economy the adjustment of prices to the world price level is direct and automatic, and no prior increase in international liquidity is required; but, he added, representatives of the German central bank have taken a different position.^{1/}

These direct price effects are obviously associated with international movements of commodities and labor. Because of the growing flows of goods, labor and capital within the Common Market, this factor explains why price trends within the area could have a regional momentum of their own, apart from price or balance-of-payments developments in the United States. These effects were even more important for the smaller European economies than for the larger ones; for, in the view of the OECD, the econometric evidence shows that the problem of "imported inflation" through trade price effects

^{1/} Gottfried Haberler, Book review, Zeitschrift fur Nationaleconomie, 1968, pp. 107-110.

is particularly serious and intractable for the smaller open European economies.^{1/}

This study found three main channels for the transmission of price inflation:

- a. Noncompetitive imports were the most obvious form of "imported inflation" through their effects either on industrial costs or on prices of consumer goods;
- b. Competitive imports directly interacted with the pricing policy of domestic competitors and influenced the latter's prices for the home market; and
- c. Price-following exporters induced a chain of events in which exporters (with improved profits on foreign sales) pay higher wages and stimulate wage pressures in sectors sheltered from foreign competition.

The inflation-transmitting effects of prices of traded goods could be traced through several mechanisms. In the first place, the country's exposure to foreign price inflation varied with the size and composition of its foreign trade sector (including goods and services). There has been within the Common Market a gradual increase in the share of the foreign trade sector in national GNP. The changes (measured as the average of exports and imports of goods and services) as a percentage of GNP were estimated at:

^{1/} "The International Transmission of Inflation," op. cit., p. 81.

	<u>Average</u> <u>1960-62</u>	<u>Average</u> <u>1968-70</u>	<u>Change</u>
Netherland	50.2	49.2	-1.0
Belgium	35.5	43.9	+8.4
Germany	18.8	21.9	+3.1
Italy	15.6	19.0	+3.4
France	12.8	15.6	+2.7

Source: "International Transmission of Inflation," Ibid., p. 84.

Within the Community, then, the trade impact varied between around 50% for the Benelux countries to around 15%-22% for the three larger member countries.

In the second place, the transmission impact varied with the sensitivity of traded goods prices to (a) foreign versus (b) domestic price influences. The study found that a small country with a large foreign trade sector might find its export and import prices "dictated" by world trade prices. In the Nordic countries, for example, prices in the export sector which were set abroad directly determined profits and hence wages paid by export firms; these wage increases spread out to the lower productivity "sheltered" sector through national wage bargaining. The study found in Swedish experience, for example, "a national pattern of wage bargaining hinging upon the competitive position of the exposed sector."^{1/}

^{1/} Ibid., p. 85.

For the larger countries, the paper reported, domestic influences were predominant in setting export prices in Germany but foreign and domestic influences were about equally weighted in determining French export prices. (p. 86.)

Accordingly, foreign trade prices are determined by "a simultaneous interdependent set of relationships between all trading countries"^{1/} with each country contributing to, and also influenced by, international price movements. The study also reported that the parity realignment in 1971 and 1972 "appears to have had some stabilizing influence on trade prices." We will therefore turn to the effects of exchange-rate and other balance-of-payments adjustment policies on the course of domestic price trends in the larger trading countries.

^{1/} Ibid., p. 88.

Domestic prices under pegged exchange rates

Under a system of pegged exchange rates, balance-of-payments surpluses and deficits have not a neutral but a direct impact upon internal price trends and business conditions. Because the European countries were in substantial surplus during the period under review, there was a direct transmission through the balance of payments of expansionary tendencies in them.

These influences are transferred through the liquidity, the domestic income and the price effects of those surpluses. Even when the monetary effects on the banking system are temporarily sterilized, the expansionary impacts on incomes and on business spending are likely to speed up internal inflationary trends through the channels we have already reviewed.

"Adjustment-inflation" and domestic prices - What is of interest to our inquiry at this point is the recognition that the acceleration of internal price and income changes in a surplus country is a key element of the balance-of-payments adjustment process under pegged exchange rates. The domestic expansionary influences constitute "adjustment-inflation" costs imposed through the balance of payments. They are independent of purely internal factors affecting the domestic price level. There is, on the deficit side, a corresponding "adjustment-deflation" cost imposed through the external payments mechanism.

With flexible exchange rates, by contrast, balance-of-payments adjustment takes place through the effects of changes in the exchange rate upon the sales and profits of the foreign-trade sector: that is, upon export, import and import-competing firms as compared with those producing for the home market. In this case, the home-goods industries are shielded from much of the costs of adjustment and the need for broad movements in the general level of domestic prices is avoided. Accordingly, a country can choose between adjustment by exchange rate action or by domestic inflation and deflation, depending on whether it chooses to hold the exchange rate or allows it to be altered. In brief, the surplus country can choose between "revaluation and inflation" and the deficit one between "devaluation and deflation."

Accordingly, under pegged rates, the surplus country cannot escape the costs of "adjustment-inflation" if the existing parity is held. Advocates who recommend a fixed-rate world monetary system as a bulwark against internal inflation may neglect their significance. For, in practice, "it is an open question whether on balance the adjustment mechanism under the gold standard ... operates more effectively to prevent inflations or to spread inflations. A correct reading of the historical record may suggest the second effect is the stronger one."^{1/}

The expansionary internal economic effects of a surplus, and deflationary effects of a deficit, in the balance of payments.

^{1/} Fritz Machlup in International Payments Problems, Symposium sponsored by the American Enterprise Institute, Washington, D.C. September 23-23, 1965, pp. 157-58. (Italics in original)

is the critical characteristic of the adjustment mechanism under pegged exchange rates. For there is a clear tendency in the long-run fixed-rate model toward "one world price level to which national price levels must conform."^{1/} The processes of automatic adjustment in the price-specie flow model, Hume assured us, would not ensure a single common world price level but rather "must for ever, in all neighboring nations, preserve money (i.e. the national price levels) nearly proportionable to the art and industry of each nation."^{2/}

This tendency for national price levels, or rather their current rates of change, to be brought more closely together when there are balance-of-payments surpluses and deficits is inherent in the pegged-rate mechanism, regardless of the causes of the international disequilibrium. There often are situations where a country's price level has gotten out of line and where price adjustments would be called for. But the same changes in domestic prices and incomes occur in the fixed-rate adjustment model in situations only distantly related to demand-management policies: a non-price impairment of a country's export capability, either temporary or structural; a crop failure or other form of natural disaster; or adverse developments of non-economic character. In all these cases, adjustment under fixed

^{1/} Harry G. Johnson, Inflation and the Monetarist Controversy, op. cit., pp. 84-85.

^{2/} David Hume, "Of the Balance of Trade" as reproduced in International Finance, edited by R.N. Cooper (Penguin modern economics, 1969), p. 27.

rates takes place through changes in the levels of domestic monetary and spending aggregates.

In practice, then, there are conflicts of national interest as between surplus and deficit countries in sharing these adjustment costs. The surplus country, especially in an inflationary world environment, is concerned to avoid the internal cost of "adjustment-inflation." As a result, officials in surplus countries, especially when beset by internal cost-push dangers, will prefer to have the deficit countries reduce their inflation rate. They will therefore favor world payments arrangements which exert external discipline on deficit countries; this variant of the international adjustment mechanism can be called the "low-inflation" compromise.

By contrast, for its part the deficit country is usually even more determined to avoid the impact of "adjustment-deflation" on local employment and the local business situation. Their governments often find it unrealistic to attempt to defend temporary deflation or even--in recent years--a slowdown in the internal business momentum in the name of international adjustment cooperation. Accordingly, their officials prefer a "high-inflation" variant of the international adjustment mechanism under pegged exchange rates.

The "high-inflation" compromise - In this variant, the surplus countries accept, either willingly or with reluctance, a substantial acceleration on the rates of change of domestic prices

and incomes. It has the advantage for the deficit countries of reducing the international pressures upon them to slow down their internal inflation. Such a compromise can be realized in practice only if the deficit countries have access to enough international liquidity to continue their purchases from abroad.

European officials maintained that the Common Market countries had accepted--had, in the opinion of some, been forced by the workings of the reserve-currency system to accept--a high-inflation adjustment compromise between 1964 and 1968. Emminger wrote: "This long-drawn-out adjustment ... illustrates that the burden of adjustment lay very one-sidedly on the shoulders of the European surplus countries. There was no significant deflation on the U.S. side, but a large--and in the end intolerable--measure of inflation on the side of the European surplus countries."^{1/}

Holtrop supported this view: "The surplus countries ... generally lived up to the prescription of the Brookings Institution report and allowed their economies to be inflated by their surpluses without putting up too much resistance."^{2/} He added: "The only objection, within the framework of the fixed-parity system, one could possibly make against these countries' policies is that they

^{1/} Otmav Emminger, "Practical Aspects of the Problem of Balance-of-Payments Adjustment," The Journal of Political Economy, Supplement, August 1967, p. 517.

^{2/} M.W. Holtrop, "The Adjustment Process, Its Asymmetry, and Possible Consequences" in Approaches to Greater Flexibility of Exchange Rates edited by G.N. Halm (Princeton: Princeton University Press, 1970), p. 138.

did not stimulate cost- and price-inflation still further, so as to eliminate even more quickly their remaining surpluses."^{1/} He even maintained that "the adjustment process has lost any trace of symmetry. Deficit countries do not manage to bring down their unit costs of production."^{2/}

As we have already seen, U.S. economists challenged this perception. U.S. and European economists came to sharply divergent interpretations of the same body of economic facts. These conflicting viewpoints were trenchantly, if somewhat harshly, summarized by Mundell: "The U.S. was saying, 'Prevent a liquidity shortage,' and the Europeans, 'Correct the U.S. deficit.' This was real politique at its best, since more liquidity meant more inflation and adjustment in Europe, while more adjustment would imply tougher balance of payments measures in the U.S. and less world inflation. Each continent wanted to thrust more of the burden on the other."^{3/}

The "low-inflation" compromise - In this alternative variant, the deficit countries accept, either willingly or as a result of externally-imposed adjustment pressures, a perceptible slowdown in the rates of change of their internal prices and incomes. The difficulty with this variant is the fact that the

^{1/} Ibid., p. 139.

^{2/} Ibid., p. 139.

^{3/} Robert A. Mundell, "A Plan for a World Currency," in Hearings, "Next Steps in International Monetary Reform," Joint Economic Committee of the U.S. Congress, September 9, 1968, p. 17.

authorities in deficit countries are usually not able to improve the internal stabilization performance materially. They are functioning about as effectively as they can and have domestic political incentives to better their performance, if only they could do so.

In practical terms, then, officials in deficit countries do not need international constraints to remind them that it would be desirable to improve their stabilization efforts. If they cannot do so on their own volition, it then follows, they will do so under international constraint only at a price: they will have to alter their unemployment, growth or price targets in the name of international cooperation. It is now a familiar proposition that, in any head-on collision between domestic priorities and the requirements of international balance, no industrial country will sacrifice its internal goals merely to improve the balance of payments.

The pre-1914 international gold standard was the most effective variant of a "low-inflation" compromise yet devised. There was in its workings a deflationary bias simply because, under it, the deficit country soon found its international financing availabilities depleted. Johnson regards "this criticism ... to be an over-generalization of a particular historical period, for the present argument is that the system has an inflationary bias."^{1/} He added: "Countries cannot prevent another country--in particular

^{1/} Harry G. Johnson, Macroeconomics and Monetary Theory (Chicago: The Aldine Publishing Co., 1972), p. 181.

the United States--from inflating if it wants to. They are instead obliged to import inflation and so finance deficit countries. Surplus countries have to put up with the inflation of deficit countries."

But the inflationary bias in contemporary world payments arrangements has been less a matter of United States policies, one way or the other, than the deliberate attempt of the founding fathers at Bretton Woods to achieve "through international cooperation the advantages the international gold standard provides without imposing on other countries the hardships it may entail."^{1/} Later, on the 25th anniversary of the Fund, Slater noted that Bernstein now "suggests that the only difference is that the Fund system is a gold standard constrained never to introduce deflation anywhere in the system."^{2/} Samuelson is closer than Johnson to an explanation of the inflationary bias of the Fund system when he writes: "the problem of long-term liquidity of the system seems to me to be fairly trivial. Who could believe that, in the age after Keynes, depressions would ever again be caused by a failure of man to come up with sufficient double-entry bookkeeping items?"^{3/}

^{1/} E.M. Bernstein, "Monetary Stabilization: The United Nations Program," in Economic Reconstruction edited by S.E. Harris (New York: McGraw-Hill, 1946) first edition, second impression, pp. 338 ff.

^{2/} David W. Slater "Commentary," in Bretton Woods Revisited edited by A.L.K. Acheson et al (Toronto: University of Toronto Press, 1972, p. 69.

^{3/} P.A. Samuelson, "Heretical doubts about the international mechanisms," Journal of International Economics 2 (1972), p. 449.

Controversy over "low inflation" compromise - During the mid-1960's the European surplus countries resisted "adjustment-inflation" in the name of international adjustment. Even in a system of rigid exchange rates in which exchange rates were to be altered "relatively rarely among the OECD countries,"^{1/} it was the majority view that "countries in surplus positions because of their competitive strength cannot realistically be called on deliberately to adjust their price levels upwards."^{2/} Earlier, in 1964, there had been a formal decision of the Common Market countries to assign to internal price and cost stability a "priority over all other aims of economic policy and of policy in other fields."^{3/}

U.S. economists were critical of what they regarded as a European unwillingness to contribute to better balance in international payments. For example, Haberler pointed out in 1967: "Emminger does not mention that, while the surplus countries had to put up with more inflation than they liked, the United States had to permit a level of unemployment which the Europeans would regard as intolerable."^{4/} More pointedly, Cooper observed that the reaction of the European surplus countries to the "imported inflation" of the 1960's

^{1/} The Balance of Payments Adjustment Process, (Paris: Organization for Economic Co-operation and Development, August 1966), para. 6, p. 8.

^{2/} Ibid., para. 46(a), p. 20.

^{3/} Report of the Deutsche Bundesbank for the Year 1964, p. 25.

^{4/} Haberler, "Comment," Journal of Political Economy, August 1967, op. cit., p. 535.

was to choose "between price stability in Europe and unemployment in the United States."^{1/}

It was the "adjustment-inflation" tendencies created by the European payments surpluses which finally convinced some European officials to accept exchange-rate policy as a preferred alternative adjustment policy. The late Herr Blessing described the process by which he altered his view point; he began by asking "whether it would not be more appropriate for the sick to devalue than for the healthy to revalue ... Until a few years ago, it had been my opinion that the sick ought to undergo an operation and not the healthy."^{2/} But the cumulative domestic inflationary effects of Germany's enormous export surpluses over a period of years forced him "to admit that we live in a world which is no longer ... prepared to accept really severe disinflationary measures, and that the healthy can protect himself against inflation only by means of a change in parity." Similarly, Netherlands Bank President Holtrop concluded that, among "possible alternatives to adjustment by inflation," currency appreciation was a preferred policy choice.^{3/} He even came to rejoice in seeing an innovation in the system that would bring to a potential surplus country the option between either combining a less infla-

^{1/} Richard M. Cooper, The Economics of Interdependence (New York: McGraw-Hill, 1968) p. 202. *Italics in original.*

^{2/} Herr Karl Blessing, late President of the Bundesbank, speech before the German Cooperatives at Mainz, Germany, on October 10, 1969.

^{3/} Holtrop, op. cit., pp. 140ff.

tionary behavior with a gradually rising parity, or sticking to a fixed parity, but then accepting on one's own responsibility the inflationary consequences of it." (p. 143.)

It was a major breakthrough among European officials in the late 1960's when some central bankers began to assert a preference for greater domestic price stability even at the cost of a currency appreciation. As a result, there came to be a gradual acceptance among them of greater flexibility of exchange rates as a means both of reducing international disequilibrium and of protecting the domestic price levels in the economies of the surplus countries from "imported inflation." Interestingly, there appears to have been a similar debate about exchange-rate policy in Japan. When the Minister of International Trade and Industry made a speech in favor of more "adjustment-inflation" in Japan, The Oriental Economist reported that a "group of businessmen and economists who bitterly opposed" such inflation included central bank officials. Because of their fears that domestic inflation would accelerate, the article added, the opinion was gaining ground among some of the policy planners of the Government and the Bank of Japan "that another currency realignment should not be averted."^{1/} We will therefore turn to the use of exchange-rate policy as an instrument for domestic economic stabilization in the larger trading countries.

^{1/} The Oriental Economist, September 1972, pp. 22-23.

Exchange-rate policy: export-oriented adjustment

Exchange-rate policy has had an important role both in the transmission and in the slowing down of inflationary impulses in European price experience since 1968. In particular, the German authorities permitted the spot value of their currency to rise in an effort to cut back the persistent trade surplus and to slow down the internal inflation. To this end, they have allowed the effective value of the D-mark to rise against the dollar by 60% over the past four years through a series of revaluations of the DM parity and through periods of upward floating in the foreign exchange market..

Effects of an exchange-rate change - The German experience with exchange-rate policy has been particularly interesting because domestic prices have continued a steady rise in the period. Revaluation should slow down price advances. The price effects of a revaluation policy are concentrated in the traded-goods sector and the adjustment costs are not distributed as widely or as uniformly (as between the foreign-trade and home-goods sectors) as they are under pegged exchange rates. In analytical terms, an appreciation initially imposes windfall losses (in terms of local currency) upon the export and import-substitution industries at home. These losses are not shared by home-goods industries. There are also windfall gains to German importers as the DM price of foreign goods is reduced.

The differential price changes (in terms of local currency) have differential effects on entrepreneurial profits. In particular, the German exporter finds it relatively less profitable than before to sell his output to a foreign customer and relatively more attractive to sell it to a local one. In this way, appreciation provides an initial incentive for the entrepreneur to divert deliveries from foreign to local customers.

From a stabilization point of view, this diversion of deliveries from foreign to home consumers occurs without the need for local prices and disposable incomes to rise. Under pegged rates, by contrast, such a diversion would have required local spending aggregates and local prices to be pushed up before the desired expansion in net domestic absorption could be attained. It is an advantage of appreciation that it avoids the need for the surplus country to advance wages and incomes--a necessary part of adjustment under pegged rates--if the payments balance is to be restored.

Exchange-rate policy and domestic stabilization in Germany -

The authorities have put into effect for Germany a policy of small and frequent changes in exchange rates as a key element in their domestic stabilization program. There were (1) a revaluation in 1969; (2) a period of floating and then a revaluation in 1971; and (3) a renewed floating and two revaluations in 1973. Yet throughout the period, the domestic inflation has not been reduced to what the authorities would regard as an acceptable level nor has the German export expansion been brought under control.

The main elements in the German inflation since 1968 have been (1) the wage explosion and associated expansion in private consumption spending; (2) an unexpected strength in export sales with associated effects on business investment; and (3) massive inflows of short-term funds which have from time to time temporarily immobilized central bank instruments to control domestic liquidity. In 1968, before the first revaluation, the Bundesbank reported that the large current-account surplus added substantial resources to German non-banks as "a crucial monetary prerequisite for the start of a domestic adjustment process which ... would be bound finally to raise the price level at home and to reduce the external surpluses on current account."^{1/} The current-transactions surpluses were being offset by record exports of long-term capital, especially by German banks. But this form of offset was unsatisfactory for two reasons: (1) the exports in 1968 "alone equalled one-fifth of the total longer-term domestic monetary capital formation" (p. 16); and (2) through a "boomerang" effect, there was "a direct connection between exports of capital ... and additional German exports of goods." (p. 18.) The authorities "never thought of correcting the external imbalance by permitting ... prices and costs in Germany to adjust itself to that in foreign countries." (p. 18.)

Revaluation was finally announced in the fall of 1969 after a debate on the issue between the two main parties in the Federal

^{1/} Report of the Deutsche Bundesbank for the Year 1968, p. 16.

election. Afterwards, as large amounts of funds flowed out of the country, the entire financial climate in Germany changed rapidly after revaluation.^{1/} But exports failed to diminish as had been expected, in part because price rises abroad neutralized a substantial part of the costs to exports of the revaluation. The surge in corporate profits after 1967 contributed to an investment boom which "far exceeds all its predecessors in strength." (p. 3.) In turn, the Bundesbank saw evidence of a "fundamental" external disequilibrium in (1) the failure of the trade surplus to decline in the business recovery; (2) the statistically demonstrable price and cost disparity with Germany's main trading partners; and (3) the inflows of funds from abroad which monetary policy was powerless to prevent. (p. 8.) The Bank recognized that the revaluation "came very late" and that "at home ... an adjustment process had started which, in itself, was operating to remove differences of price level between Germany and the rest of the world." (p. 15.)

By 1970, there was a slight easing of demand pressure evidenced by reduced capacity utilization by a growing number of enterprises. With price rises mainly attributable to domestic factors, there was a shift from demand-pull to cost-push inflation and the most broadly based stimulus to domestic spending was found not in business investment but in private consumption. The unprece-

^{1/} Report of the Deutsche Bundesbank for the Year 1969, p. 1.

dented wage increases in 1969 and 1970 contributed to the domestic disequilibrium. The Bank also thought that, because

"the revaluation was too long delayed, it was possible for the inflationary tendencies abroad to spread unimpeded to Germany at that time."^{1/} In its view, the appreciation of the DM in October 1969 "was unable to slow down the growth of domestic price and costs" because "for one thing, it took place very late, and for another, it was presumably too small in quantitative terms."^{2/}

In 1971, the very high private capital inflows were so large at times as to deprive "internal stabilization measures ... of any chance of success." (p. 1.) In the Bank's view, the relaxation of U.S. credit policy was transmitted to other countries by international payment flows and especially by credit transactions via the Euro-dollar market. (p. 22.) On the other hand, there was evidence that wage increases "were by no means only 'market induced' but had an influence on the movement of prices in their own right." (p. 13.) Against domestic wage developments, therefore, it was not unexpected that private consumer demand was initially the main driving force of a renewed German business expansion in 1972. But the current account surplus also increased steadily from SDR 170 million in 1971 to SDR 380 million in 1972.

^{1/} Report of the Deutsche Bundesbank for the Year 1970, p. 11.

^{2/} Report of the Deutsche Bundesbank for the Year 1971, p. 11.

By late 1972 German consumer prices were rising at an annual rate of close to 8%. Despite currency revaluation and a lower rate of wage cost increase, prices failed to slow down their advances. On those grounds, the authorities introduced a major series of stabilization measures in May 1973, including (1) a temporary investment tax of 11%; (2) a 10% personal income tax surcharge on higher income brackets; (3) a suspension until April 30, 1974 of special depreciation allowances on new plant and equipment and an owner-occupied houses and apartments; (4) a DM 2 billion cut in Federal and Lander spending; (5) compulsory reduction in public bodies borrowing plans; and (6) the issue of "stability bonds" with proceeds to be blocked and some DM 3 billion of social security funds to be transferred to the central bank. The German authorities had decided that a broadly-based package of "domestic" measures was required to contain the inflationary difficulties confronting their country.

Concluding observations

The international transmission of inflation from country to country can be traced through three channels of impact: through the liquidity, the internal income and the price effects on the domestic economy from developments abroad. The liquidity effects of external payments surpluses have been given much attention among European officials and economists over the past decade. As a result, there has been widespread interest in a reserve-center explanation of world inflation under fixed rates in which the United States plays the strategic role in the international transfer process.

Emphasis upon liquidity factors - The recent emphasis upon the monetary transmission of world inflation can be attributed to the massive dollar inflows into European countries and Japan, especially since 1970. But this recent scale of disorderly international capital movements may eventually be judged, in the light of hindsight, to have constituted an exaggerated measure of the importance of the purely monetary elements in the transmission mechanism.

In the first place, these international disturbances marked the culmination of a period of disequilibrium in the external position of the United States vis-a-vis its trading partners. This disequilibrium had persisted for an extended period of time and had grown to unprecedented proportions. It was perhaps unrealistic to have expected that such strains could be corrected without substantial disturbance to the world economy.

The severity of the disruptive international capital movements in this period was further augmented by a sharp contrast in the cyclical situations as between the United States and western Europe after 1970. In addition, monetary strains were further enhanced by the determination of the various national authorities to rely heavily upon internal credit policy to resolve their domestic stabilization difficulties. Finally, exchange rates of most of the leading currencies prior to mid-1971 fluctuated within margins of less than 1% around the then established parities. In retrospect, it was to be expected that conflicts in cyclical timing and hence in domestic credit policies were likely to stimulate massive--and at times disruptive--international capital flows between the industrial countries when exchange rate movements were so narrowly circumscribed. With greater flexibility in exchange-rate practices already in effect and with prompter adjustment of disequilibrium in prospect, there are reasonable grounds for expecting international movements of funds to be a less disruptive factor in the world economy in the years ahead than they have been in the recent past, though still a big one.

For analytical purposes, an undue emphasis upon the role of the purely monetary channel has a significant cost: a tendency to neglect the importance of the non-monetary elements in the international transmission of inflation. On the direct income side, the sustained current-account surpluses which the Common Market countries recorded during the 1960's and Japan at the end of that decade had

expansionary income effects on their domestic economies. Export expansion was a primary stimulant to internal business activity in these countries during this period: for export sales tended to be the exogenous, and induced domestic investment and then consumption endogenous, variables in the European business cycle. Because export growth often led the cyclical business recovery, especially in Germany, it becomes difficult to separate the external from the internal sources of economic growth in the Common Market countries.

The economic impact of the income and price effects can also be seen in the evidence that internal prices among the Common Market countries had a momentum of their own throughout the decade. They were sometimes less affected by developments in the outside world in general and the United States in particular than by demand fluctuations in neighboring Common Market countries. The tendencies for prices to have a regional--as distinct from a global--momentum reflected the impact of foreign trade volume with regional neighbors and of foreign-trade prices on their domestic price situation. During the decade of the 1960's (prior to the special circumstances which led to the breakdown in world payments arrangements between 1971 and 1973), the effects of these regional factors were much increased as movements of commodities and services, of labor and of capital among the Common Market countries were much augmented.

The role of price elements - The domestic effect of price changes of traded goods was found by the OECD have been of major importance in the transmission of international inflation, as we

have recounted. Whether this experience is merely a reflection of the increasing economic interdependence among member countries or whether it reflects the temporary effects of the unsatisfactory stabilization performances of the leading industrial countries remains to be seen.

In retrospect, however, these international transmission effects served to exacerbate domestic inflationary price and expectational factors of unprecedented severity in each of the larger industrial countries. These countries have entered a period in which traditional instruments of demand management have proved no longer to be effective means of stabilizing the internal economy under cost-push and expectational disturbance. These factors have altered the economic environment in fundamental ways. The business community has accepted the expectation of a steadily upward drift of costs and has, accordingly, at times diminished resistance to higher prices for materials, equipment, or labor. On their part, labor leaders have been bargaining for automatic compensation to offset rising consumer prices as well as to cover expected gains in productivity.

The surge in prices, both in the major industrial countries and in world commodity markets (following the U.S. and other currency adjustments) in early 1973, provides evidence that direct and expectational price effects are powerful elements in the international transmission of inflation under contemporary conditions. Economists are likely to focus intensified attention on these price elements

as the statistical data explaining price developments in 1973 become available. Already by August 1 (1973), for example, the U.S. Council of Economic Advisers reported to the Joint Economic Committee about the complex channels through which prices abroad affected the U.S. domestic economy, and their importance, in these words: "There is no mechanical way to assess the total contribution of rising international prices to the U.S. inflation. However, conditions in the first half of 1973 were such as to make the influence of these prices quite powerful."^{1/}

On the other hand, it must be recognized, the recent international character of price developments has also reflected cyclical and special influences. In particular, there was a major acceleration in business expansion in each of the industrial countries in 1972 and 1973. It was an exceptional circumstance that the rates of real growth in GNP in all of them would be substantially above the long-term average year-to-year real expansion in output.

In addition, there also was at the time an "ecological boom" which swept markets for many primary products. It was unprecedented--for the first time in western history in fact--that the industrial countries would become aware of general, as well as temporary, shortages of foodstuffs, animal feed, energy, and raw materials on an unprecedented scale in a peace-time situation. The

^{1/} Press Release of the Statement of Herbert Stein, Chairman, et al before the Joint Economic Committee on August 1, 1973, mimeograph, p. 10.

magnitude of this expectational phenomenon becomes concrete when it is recalled that a seat on the New York Stock Exchange sold for \$550,000 in the late 1960's and only \$92,000 in early 1973; but membership on the Chicago Mercantile Exchange, priced at only \$3,000 a few years ago, changed hands in 1973 at \$115,000.^{1/}

Exchange-rate policy - Finally, it is evident that exchange-rate policy has a role in the international transmission mechanism. However, these effects are complex and the OECD is helpful in reminding us that "there is no simple answer to the question whether a regime of fixed or more flexible exchange rates is more or less 'inflationary' per se."^{2/}

In general, it can be noted, pegged exchange rates impose "adjustment-inflation" costs on surplus and "adjustment-deflation" costs on deficit countries. But surplus countries have resisted internal inflation in the name of international cooperation just as deficit countries have been unwilling to accept domestic deflation on the same grounds. This conflict in national interest between the surplus countries advocating a "low-inflation" and the deficit countries a "high-inflation" compromise--helps to explain why the balance-of-payments adjustment mechanism agreed to in 1944 at Bretton

^{1/} H.J. Maidenberg, "Six reasons for sharp rise in commodities dealing," The Times (London), May 9, 1973, supplement, p. v.

^{2/} "The International Transmission of Inflation," op. cit., p. 81.

Woods proved to be so ineffective.^{1/} These same differences are also a substantial source of dispute among the larger trading countries in the current international negotiations to reform, or to rebuild, an orderly world payments system.

By contrast, recourse to exchange-rate policy has the effect of avoiding the broad changes in national price levels required in the adjustment process under pegged rates. When exchange rates are altered, the domestic price effects are concentrated in the traded-goods industry sector. In theory, an appreciating rate should have anti-inflationary domestic effects and a declining rate inflationary ones.

The German authorities have carried out in practice since 1969 what can be described as a policy of small and frequent appreciations of the D-mark. But revaluation has not been as effective as had been hoped either in cutting back the persistent trade surplus or the internal inflation. Three factors have been important in this experience. In the first place, the 1969 revaluation was regarded by the Bundesbank as an example of "too little and too late." Secondly, inflation abroad was proceeding so rapidly that German exporters were able to maintain foreign sales despite the currency appreciations. One U.K. journalist, in fact, recently attributed "the resilience of German industry" under the impact of successive

^{1/} See my paper, The Case For The Par-Value System, 1972, Princeton Essays in International Finance, No. 92, March 1972, esp. pp. 17-21.

currency appreciation to "the absolute determination of German industry to hold on to export markets."^{1/}

But the German experience also reminds us of a third factor: the longer-term repercussions of a revaluation. It is common for the short-term costs of a revaluation to be emphasized and the longer-term benefits to be neglected. But the reduced local-currency prices of foreign goods and the incomes effects of the reduced trade surplus are long-run as well as short-term influences for internal stability. As these effects help to slow down the rises in domestic costs, in fact, the country's competitive position begins to improve and its currency can become the candidate for a new revaluation.

Domestic effects of external surpluses and deficits - As we look back over the stabilization experience of the industrial countries from 1958 to 1973, it is evident that from time to time international factors were significant sources of internal economic disturbance in them. Does this experience mean that these countries have now reached a degree of economic integration, and the associated flows of goods, services, capital and labor among them have now reached the volume, that national policy formulations which seek a degree of national autonomy have become obsolete?

Emminger has concluded in a recent and exceptionally thoughtful inquiry into the international aspects of world inflation that the principal sources of inflation in most countries have been

^{1/} Malcolm Rutherford, "German industry rides out revaluation in grand style," The Financial Times (London), July 11, 1973, p. 22.

domestic in origin. "It would be an exaggeration," he stated, "to put all or even the main responsibility for world inflation on the now defunct international monetary system. It ... is still true that in most cases the larger part of inflation has been 'home made.' And it is only fair to add that better domestic stability in all the major countries would have prevented the international system from unfolding all its negative features. I find it important to make this 'caveat' because the international monetary system is too often used as a scapegoat or alibi by national governments"^{1/} Clearly attempts by the industrial countries to moderate world inflationary trends will require a package of national, regional and international measures. It is the thrust of Emminger's view that the primary focus of these efforts must be to improve the domestic stabilization results in each of them. Only by attaining greater internal price stability can these countries hope to keep tendencies toward the international transmission of inflation under control. . . .

On the international side, however, it is evident in retrospect that the protracted balance-of-payments surpluses and deficits in the major trading countries have been a significant source of domestic economic disturbance in them. Under pegged exchange rates or even under "managed" floats with significant official intervention,

^{1/} Otmar Emminger, "Inflation and the International Monetary System," the tenth annual Per Jacobsson Lecture, Basle, Switzerland, June 16, 1973 reproduced in part in the Washington Post, June 17, 1973, p. C-1 and C-3.

the effects of disturbances in foreign countries are transmitted through the changes in domestic liquidity, in incomes and in prices which we have reviewed. Similarly, a domestic inflation in one country is transmitted to trading partners through these same channels. This transmission process continues so long as the conditions of balance-of-payments disturbance are uncorrected.

From a national point of view, inflationary impulses from country to country are strengthened by balance-of-payments surpluses and deficits of a protracted character among trading partners; they are moderated by the prompt restoration of the external balances among them. But prompt corrective measures have costs. Under pegged or officially-supported exchange rates, for example, the surplus countries can choose as a deflationary option to revalue or as an inflationary one to postpone corrective action. They often preferred an inflationary option to avoid harm to export firms. Similarly, the deficit countries can choose to restrict demand as a deflationary option or to accept the inflationary impact of a devaluation. They have tended to prefer devaluation in place of deflation and, too often, have been slow in taking the supportive domestic measures needed to ensure the success of the devaluation itself.

In short, neither surplus or deficit countries have welcomed deflationary adjustment options as realistic choices over the past decade. Furthermore, they have subjected their local economies to external disturbance by permitting their surpluses and deficits to

continue over an extended period. For these reasons, the attempts in the current international financial negotiations to agree upon rules and procedures for a prompter and more balanced adjustment of external surpluses and deficits can be regarded as a realistic way to dampen the international transmission of inflation from country to country, even in a highly interdependent world economy.

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