

Money Supply and Imports

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THE AIM of this paper is to inquire into the extent to which movements in the value of imports can be accounted for statistically in terms of the model described in two earlier studies in *Staff Papers*,¹ to evaluate the results, and to consider whether the facts suggest any supplementary elements of explanation. Reference will be made throughout to Chart Series II in the second of the earlier articles, as well as to Table 1 in this paper, covering approximately the same set of countries.²

The principal assumptions of the model are (a) a constant income velocity of circulation of money, (b) a constant relationship between money imports and money income (i.e., in some cases a constant *average*, in others a constant *marginal* propensity to import in terms of money), (c) an assumption that money coming into existence as the counterpart of domestic credit expansion and of capital imports (as well as that coming into existence as the counterpart of exports) enters immediately into income and is successively respent at the end of each subsequent income period, and (d) an assumption that the value of exports, net capital imports, and domestic credit expansion may be taken as independent variables and the value of imports as a dependent variable.³

Exports, capital imports, and domestic credit expansion have an identical effect on the money supply, income, and imports, and may be

¹ J. J. Polak, "Monetary Analysis of Income Formation and Payments Problems," *Staff Papers*, Vol. VI (1957-58), pp. 1-50; J. J. Polak and Lorette Boissonneault, "Monetary Analysis of Income and Imports and Its Statistical Application," *Staff Papers*, Vol. VII (1959-60), pp. 349-415.

² The countries included are Australia, Austria, Belgium-Luxembourg, Burma, Canada, Ceylon, Colombia, Costa Rica, Cuba, Denmark, Dominican Republic, Ecuador, Egypt, Finland, France, Germany, Guatemala, Honduras, India, Iraq, Ireland, Italy, Japan, Mexico, Netherlands, New Zealand, Norway, Peru, Philippines, Portugal, Sweden, Switzerland, Thailand, Union of South Africa, United Kingdom, and Venezuela.

³ Implied in (b) and (d) are certain tacit assumptions about relative price-effects, viz., that world demand for each country's exports, and each country's demand for imports, are of unit elasticity with respect to price.

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considered in the aggregate as gross money creation, Q .⁴ Imports, M , constitute a drain on the money supply and $(Q - M)$ therefore represents net money creation or the net rate of increase of the money stock.

On the assumptions of the model, imports will tend to equal gross money creation after a distributed time lag,⁵ and variations in credit expansion, which is regarded as a policy variable, will exercise a predictable and potentially controlling effect on the balance of payments.

Examination of data relating to 36 countries over a period running in general from 1950 to 1958 yields the following conclusions:

(1) In the average country, there is a moderately good correlation between deviations from trend in actual imports and the corresponding deviations in estimated imports as computed on the basis of the model. The correlation appears to be better in primary producing countries than in industrial countries, and better in small than in large countries.

(2) The correlation between imports and the stock of money—which ought, on the assumptions of the model to be close—is substantially poorer in most countries than that between imports and “computed imports.”

(3) On the other hand, the correlation between imports and gross money creation in the same year is considerably better than that between imports and computed imports which, as already observed, is simply gross money creation with a distributed time lag.

(4) This finding implies that there are import variations, not allowed for in the model, which are closely associated with variations in gross money creation.

(5) The superiority of gross money creation over computed imports as a correlate of actual imports is not attributable to any tendency for gross money creation to be associated with a speeding up in the velocity of circulation of money, but is largely attributable to a tendency for the relationship of imports to income to vary with variations in gross money creation, for which three explanations are suggested:

(a) Certain relationships cause imports to respond more swiftly to changes in gross money creation than is implied in the model. Allowance for some of these factors, such as the association of high propensities to import with income from exports or with capital expendi-

⁴ Domestic credit expansion is arrived at by subtracting the increase in the (net) gold and foreign asset holdings of the banking system from the increase in the domestic monetary liabilities of the banking system. It therefore includes, negatively, any change in the nonmonetary liabilities of the banking system other than foreign exchange liabilities. Capital imports (net) are arrived at by subtracting the value of imports of goods and services from the sum of (1) the value of exports of goods and services and (2) the increase in the net gold and foreign asset holdings of the banking system.

⁵ This implies that after any change in gross money creation the amount of imports will tend gradually to approach that of gross money creation, and that fluctuations in the latter will be followed by milder fluctuations in the former.

ture financed by foreign borrowing, could easily be introduced by way of modification of the model itself. Others, such as those involving the reaction of import licensing to changes in foreign exchange receipts, tend to supplement rather than modify the mechanisms described in the model.

(b) Other mechanisms tend to produce simultaneous variations in particular elements in gross money creation, on the one hand, and in imports, on the other.

(c) Finally, there are mechanisms which tend to make various elements in gross money creation change in response to changes in the need for money, which in turn result from autonomous variations in imports.

(6) Exports, which constitute the principal element in gross money creation, appear to play an active rather than a passive role. Both capital movements and credit creation appear sometimes to act autonomously and sometimes responsively.

(7) Since changes in gross money creation exercise much of their effect on computed imports within the same calendar year, any tendency for gross money creation to respond immediately to autonomous changes in imports will enhance not only the correlation between imports and gross money creation but also that between imports and computed imports. To this extent, the latter correlation will exaggerate the evidence in favor of the model.

(8) It should not be assumed from the correlation between gross money creation and imports that a policy change in credit expansion would exercise an immediate effect on imports.

Correlation Between Actual Imports and Those Computed in Accordance with the Model

Actual imports, M , for 36 countries over a period extending in general from 1950 to 1958 have been compared with computed imports, M^* , i.e., imports computed on the basis of gross money creation, with lags distributed in accordance with the model under examination (see Chart Series II,⁶ and Table 1 of this paper). In most cases (as may be seen by comparing columns 1 and 2 of Table 1), the degree of correlation found depends very much on whether or not credit is taken for similarities in trend. In some countries, the upward trend in all economic value aggregates is so marked that from this fact alone a high correlation would exist between any two of them. In what follows, a correlation is

⁶ Polak and Boissonneault, *op. cit.*, pp. 377-415.

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TABLE 1. SQUARE OF CORRELATION COEFFICIENT¹ (R^2)

	Generally, 1950-58 ²			
	M, M^* (1)	\tilde{M}, \tilde{M}^* (2)	M, MO (3)	M, Q (4)
Australia	.366	.476	.303	.758
Austria	.879	.475	.132	.401
Belgium-Luxembourg	.936	.486	.004	.847
Burma	.244	.380	.159	.513
Canada	.840	.361	.354	.705
Ceylon	.659	.839	.069	.603
Colombia	.973	.861	.420	.884
Costa Rica	.964	.027	.264	.555
Cuba	.942	.935	.798	.927
Denmark	.908	.020	.350	.361
Dominican Republic	.959	.667	.360	.730
Ecuador	.949	.918	.433	.841
Egypt	.512	.614	.335	.600
Finland	.954	.876	.404	.897
France	.937	.485	.061	.776
Germany	.981	.439	.001	.807
Guatemala	.998	.895	.205	.588
Honduras	.895	.728	.067	.835
India	.691	.307	.513	.660
Iraq	.916	.879	.657	.893
Ireland	.107	.541	.143	.936
Italy	.831	.018	.150	.704
Japan	.729	.295	.008	.380
Mexico	.978	.814	.507	.893
Netherlands	.923	.679	.240	.881
New Zealand	.772	.171	.009	.400
Norway	.982	.595	.048	.879
Peru	.992	.873	.083	.910
Philippines	.648	.058	.052	.797
Portugal	.951	.468	.134	.464
Sweden	.749	.186	.018	.938
Switzerland	.812	.269	.014	.800
Thailand	.922	.771	.355	.912
Union of South Africa	.890	.456	.001	.724
United Kingdom	.667	.489	.007	.961
Venezuela	.970	.851	.499	.990

¹ The variables correlated are as follows:

M	Import payments
M^*	Computed import payments (the result of applying the import coefficients to the Q 's)
MO	Money
Q	Gross money creation ($X + C + \Delta D$)
X	Export receipts
$X_{(-1)}$	Export receipts for the previous year
C	Capital movements (net capital imports)
D	Domestic assets of the banking system
MA	Autonomous imports
\sim	Deviation from trend

² Italics indicate negative correlation.

TABLE 1 (continued). SQUARE OF CORRELATION COEFFICIENT¹ (R^2)

	Generally, 1953-58 ²				Generally, 1950-57
	\tilde{M}, \tilde{X} (5)	$\tilde{M}, \tilde{X}(-1)$ (6)	$C, \Delta MO$ (7)	$\Delta D, \Delta MO$ (8)	Q, MA (9)
Australia	.163	.027	.379	.290	.562
Austria	.284	.000	.136	.233	.434
Belgium-Luxembourg	.876	.003	.041	.144	.367
Burma	.508	.670	.082	.167	.001
Canada	.459	.006	.003	.852	.519
Ceylon	.124	.546	.008	.732	.425
Colombia	.524	.398	.025	.433	.342
Costa Rica	.149	.007	.001	.138	.273
Cuba	.666	.253	.686	.598	.437
Denmark	.282	.126	.032	.062	.354
Dominican Republic	.007	.113	.385	.518	.685
Ecuador	.651	.068	.087	.077	.590
Egypt	.195	.012	.000	.850	.402
Finland	.721	.000	.006	.044	.060
France	.034	.004	.379	.174	.533
Germany	.482	.344	.535	.011	.224
Guatemala	.199	.261	.057	.138	.787
Honduras	.520	.085	.001	.006	.715
India	.688	.079	.001	.155	.908
Iraq	.297	.282	.059	.088	.316
Ireland	.019	.066	.001	.011	.280
Italy	.350	.341	.166	.007	.633
Japan	.505	.127	.060	.797	.257
Mexico	.616	.017	.075	.165	.269
Netherlands	.019	.489	.053	.151	.141
New Zealand	.082	.008	.099	.293	.211
Norway	.955	.004	.238	.458	.099
Peru	.100	.088	.030	.010	.448
Philippines	.341	.379	.535	.127	.615
Portugal	.401	.169	.119	.285	.092
Sweden	.926	.003	.040	.362	.008
Switzerland	.796	.023	.193	.254	.762
Thailand	.486	.027	.054	.041	.048
Union of South Africa	.258	.139	.053	.002	.580
United Kingdom	.723	.008	.611	.270	.748
Venezuela	.503	.368	.623	.095	.085

¹ The variables correlated are as follows:

M	Import payments
M^*	Computed import payments (the result of applying the import coefficients to the Q 's)
MO	Money
Q	Gross money creation ($X + C + \Delta D$)
\tilde{X}	Export receipt
$\tilde{X}(-1)$	Export receipts for the previous year
C	Capital movements (net capital imports)
D	Domestic assets of the banking system
MA	Autonomous imports
\sim	Deviation from trend

² Italics indicate negative correlation.

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said to be "very good" if R^2 , the square of the correlation coefficient, exceeds .8; "good" if it exceeds .6; "fair" if it exceeds .3; and "poor" if it is less than .3 or if the correlation has the "wrong" sign—i.e., in most cases, if it is negative.

If deviations from trend are compared, the correlation between imports and computed imports (Table 1, column 2) would appear to be very good for Ceylon, Colombia, Cuba, Ecuador, Finland, Guatemala, Iraq, Mexico, Peru, and Venezuela, and good for the Dominican Republic, Egypt, Honduras, the Netherlands, and Thailand. On the other hand, the correlation seems poor for Costa Rica, Denmark, Italy, Japan, New Zealand, the Philippines, Sweden, and Switzerland. For Australia, Austria, Belgium-Luxembourg, Burma, Canada, France, Germany, India, Ireland, Norway, Portugal, the Union of South Africa, and the United Kingdom, the correlation is fair.

On the average, the imports of primary producing countries conform to the model better than those of industrial countries, and the imports of small countries somewhat better than those of large ones.

An Alternative Test of the Assumptions of the Model

According to the underlying assumptions of the model (viz., constant income velocity of circulation, and constant relationship between imports and income), imports should vary virtually simultaneously, and in most cases proportionately, with the money stock. In fact, the correlation, abstracting from trend, as shown in column 3 of Table 1, appears good only for Cuba. It is fair for Australia, Colombia, the Dominican Republic, Ecuador, Egypt, Finland, India, Mexico, Thailand, and Venezuela, and poor for the remaining 25 countries.

In all but one (India) of the 36 countries, the correlation in column 3 between imports and money stock, abstracting from trend, is poorer—and often much poorer—than that between imports and computed imports in column 2. In part, the superiority of computed imports over money stock as a correlate of imports may arise from the fact that money stock is measured at the end of a year while imports are measured over the year; and in part, it no doubt arises from the fact that, when imports over any period happen to be greater, for whatever reason, than computed imports, the actual money stock will decline more than the money stock computed according to the model. The actual money stock will therefore probably fall below the computed money stock and thus diverge more from actual imports than will either the computed money stock or computed imports (which move together).

Simultaneous Relationship Between Gross Money Creation and Imports

Examination of Chart Series II⁷ reveals a further empirical fact of the greatest interest. The data for many countries⁸ indicate a tendency for computed imports to lag behind actual imports. The fact that, by the very nature of the model, computed imports also follow gross money creation with a distributed lag suggests the possibility that imports may correlate well with the latter. And, in effect, as may be seen by comparing columns 2 and 4 of Table 1, in most cases imports correlate better—often much better—with gross money creation in the same year than with computed imports, each series being measured in deviations from trend. This appears to be true for all countries except Austria, Ceylon, Ecuador, and Guatemala—where imports correlate better with computed imports than with gross money creation—and Cuba, Egypt, and Portugal—where there is little to choose between the two correlations. Thus, the correlation between gross money supply and imports in column 4 may be described as good (by the standards previously employed) in all but 7 cases, and in no case is the correlation poor.

The superiority of current gross money creation over computed imports as a correlate of imports may help to explain the fact that, as has been shown in an unpublished note by R. R. Rhomberg and Lorette Boissonneault, the relationship between imports and computed imports appears to be closer in those countries in which, owing to a high import ratio and a high velocity of circulation, the value of computed imports is more strongly influenced by the gross money creation of the current year.

Reasons for the Simultaneous Movements of Gross Money Creation and Imports

Clues leading to an explanation of the fact that, in most countries, imports correlate much better with contemporaneous gross money creation than with computed imports—which are simply gross money creation with a distributed lag—might be sought in the behavior of the various elementary relationships constituting the model. For example, are variations in gross money creation associated with variations in velocity of circulation, or with variations in the propensity to import, i.e., in imports in relation to income?

Examination of the basic data⁹ indicates that there is little relation

⁷ Polak and Boissonneault, *loc. cit.*

⁸ Belgium-Luxembourg, Burma, Canada, Cuba, Denmark, Egypt, Honduras, India, Italy, Netherlands, Norway, Sweden, Switzerland, and United Kingdom.

⁹ Cf. Polak and Boissonneault, *op. cit.*, pp. 376-414.

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in most countries between the level or rate of change of velocity and the level of gross money supply in relation to trend.

On the other hand, in almost all countries there appears to be some direct correlation between the level of gross money creation in relation to trend and the extent by which imports exceed their normal relation to income, and in about 3 countries out of 5 the correlation is good or fair (Table 1, column 9).

The existence of such a relationship between gross money creation and the propensity to import—and hence of a closer synchronization between gross money creation and imports than can be satisfactorily explained in terms of the causal mechanism described in the model—raises the question whether supplementary or alternative causal mechanisms may be at work.

Possible mechanisms tending to make imports fluctuate with gross money creation and to obviate or mitigate fluctuations in the rate of growth of the money stock may be grouped as follows:

(a) Those involving a more nearly instantaneous reaction of imports to autonomous changes in gross money creation than that described in the model;

(b) Those whereby various elements in gross money creation, on the one hand, and imports, on the other, move jointly, and nearly simultaneously, in response to some common cause; and

(c) Those whereby the causal nexus assumed in the model is reversed, i.e., in which imports play the “autonomous” role and one or another element in gross money creation responds to movements in imports.

Since a number of mechanisms might be equally well classified under (a) or (b), these classes have been run together in the following section.

FACTORS PROMOTING A MORE OR LESS SIMULTANEOUS REACTION OF IMPORTS TO GROSS MONEY CREATION AND IMPORTS, OR OF BOTH TO A COMMON CAUSE

There are various circumstances that might speed up the reaction of imports to changes in gross money creation, or that might simultaneously affect both gross money creation and imports. For example, (1) in countries where imports are subject to quantitative controls, increases in foreign exchange receipts from exports or capital imports may be followed within a few months by a relaxation of restrictions and a consequential release of import demand that had previously been merely potential. (2) In countries exporting manufactures, exports tend to have an import content somewhat higher than that of output for the domestic market, since the latter contains a higher proportion of services; while in countries exporting primary products, incomes generated in

the export trade are more likely to be spent on imports than are incomes generated in the home market trades. A rise in exports will therefore be associated with a rise not only in imports but also in the propensity to import. (3) Investment in inventories of raw or semimanufactured materials has in many countries a particularly high import content, and also is particularly likely to be financed by bank credit, so that an increase in this form of investment would tend to bring about a simultaneous, or nearly simultaneous, increase in both imports and credit creation. (4) The importation of capital and the purchase of import goods may be part and parcel of the same operation.¹⁰ (5) A rise in prices of primary products in world markets, by increasing the incomes of primary producers, may bring about, in industrial countries, a more or less simultaneous increase in the volume of exports and in the value of imports.

INFLUENCE OF EXPORTS ON IMPORTS

It is difficult to evaluate the empirical evidence bearing on the relative importance of the various types of interaction considered above. In many cases this could be assessed only by detailed study of the economic annals of individual countries. No doubt, however, these factors account, between them, for a good deal of the shortening of the time-lag—compared with what could otherwise be expected from the operation of the model—between changes in gross money creation and changes in imports. To this extent, there is no need to invoke the aid of mechanisms of type (c), which attribute to gross money creation a passive or responsive, rather than an active, role.

So far as exports are concerned, it seems fairly clear, both on a priori and on empirical grounds, that their role is predominantly autonomous rather than responsive in character. That is, export variations will tend in the short-run to generate, rather than respond to, variations in imports; therefore any apparent simultaneity in the movements of the two series must be due to mechanisms of types (a) and (b) rather than those of type (c). It is true that the shortage of money resulting from an autonomous increase in imports would tend to bring about a decline in the pressure of home demand and might release additional supplies for export. To the extent that export goods were previously in short supply, or to the extent that their prices fall and foreign demand is of more than unit elasticity, the value of exports would rise. This mecha-

¹⁰ In some of the most glaring cases, namely transactions arising out of loans of the International Bank for Reconstruction and Development and the Export-Import Bank of Washington, the capital movements have been excluded from gross money creation and the corresponding imports from "imports." See Polak and Boissonneault, *op. cit.*, p. 368.

nism, however, may be expected to work even more slowly than the reaction of gross money supply on imports as assumed in the model. It certainly could not operate fast enough to help significantly in explaining the apparent *simultaneity* in the relationship between gross money supply and imports.

The empirical evidence, so far as it goes, is consistent with the view that export variations play an active and an important role in determining import variations. The simple correlation between exports and imports, though generally inferior to that between gross money creation and imports, is often quite high. As may be seen from column 5 of Table 1, the correlation seems good, even when both series are taken relative to trend, for Belgium-Luxembourg, Cuba, Ecuador, Finland, India, Mexico, Norway, Sweden, Switzerland, and the United Kingdom. On the other hand, the correlation is distinctly poor for Australia, Austria, Ceylon, Costa Rica, Denmark, the Dominican Republic, Egypt, France, Guatemala, Iraq, Ireland, the Netherlands, New Zealand, Peru, the Philippines, and the Union of South Africa; and it is only fair for Burma, Canada, Colombia, Germany, Honduras, Italy, Japan, Portugal, Thailand, and Venezuela.

There is evidence that in certain countries exports react on imports after a lapse of time. In some of these countries, the correlation would be improved by the addition of a uniform time lag; countries where the correlation would be improved by a time lag of as much as a year include Guatemala, the Netherlands, and the Philippines (columns 5 and 6 of Table 1).

Responsiveness of Gross Money Creation to Changes in Imports

While mechanisms of the types hitherto discussed are doubtless important, there is considerable evidence to show that the similarity and simultaneity in the movements of imports and of gross money creation are attributable in part to mechanisms whereby autonomous increases in imports create a sort of money vacuum that evokes an additional supply.

As indicated above, it is improbable that this sort of reaction would operate to any significant extent in the short-run through an increase in exports. The case stands differently where capital movements and domestic credit expansion are concerned.

In certain circumstances, a shortage of money, resulting from increased imports, might clearly bring about a rapid decline in exports of capital, or an increase in imports of capital attracted by higher interest rates,

more attractive stock exchange quotations, or enhanced willingness to borrow on good security. Empirical evidence would seem to indicate that, in fact, capital movements are sometimes active and autonomous and sometimes passive and offsetting in character. One rough and ready test is that provided by the relationship between variations in capital movements and variations in the rate of expansion of the money stock. Where capital movements are independent of the scarcity of money, a more favorable balance of capital movements would be expected to be associated with an accelerated growth in the money stock. When, however, capital is attracted by the scarcity of money, a more favorable balance on capital account would be expected to accompany—or might follow—a deceleration in the growth of the money stock.¹¹ On this criterion, there would appear from column 7 of Table 1 to be evidence of an offsetting role of capital movements in the United Kingdom, Germany, and France. On the other hand, a positive correlation between net capital imports and the growth of money appears to exist for Cuba, the Dominican Republic, the Philippines, and Venezuela. For all other countries the correlation, whether positive or negative, is poor. However, the fact that for the majority of countries the relationship between the two series is unclear may indicate that the positive correlation which would be natural if capital movements were autonomous is upset by some capital movements of an offsetting character. In this connection it should be borne in mind that frankly compensatory movements, such as transactions with the International Monetary Fund, are included in capital movements.

Another element in gross money supply that is likely to show offsetting movements and to play a passive role is domestic credit creation. Here again we may apply, though with considerable reservation, the test of whether credit creation is directly or inversely correlated with growth in the money stock. An inverse correlation would provide some evidence that credit creation is playing a passive, or offsetting, role. In fact, the results to be gleaned from column 8 of Table 1 are of a mixed character. A good inverse correlation is obtained for Ceylon, and a poor inverse correlation for Belgium-Luxembourg, Costa Rica, Finland, Guatemala, Italy, Mexico, the Netherlands, the Union of South Africa, and Venezuela. For all other countries, the correlation is direct, being good for Canada, Egypt, and Japan, fair for Colombia, Cuba, the Dominican Republic, Norway, and Sweden, and poor for the remaining 18 countries. Again the poorness of the positive correlation in many countries is some

¹¹ It is unnecessary to underline the rough and ready character of this test. A more than average increase in the desire to hold money balances might evoke a more than average importation of capital, or a more than average expansion of domestic bank credit.

evidence that—as is, indeed, well known to be the case—changes in domestic credit creation in these countries are sometimes, even though not generally, of an offsetting character.

Evaluation of the Evidence in Relation to the Model

Of the mechanisms that have been discussed in the preceding pages, some involve no change in the basic principles of the model and could conceivably be incorporated in it as modifications, with the general effect of shortening the time lag between gross money creation and imports. Such is clearly true of the higher-than-average propensity to import that is often associated with income from exports.¹² With some reservations, the same might be said of the assumed tendency for certain import-intensive types of expenditure to be financed by bank credit.

Other of the mechanisms discussed have explained import movements in a way essentially different from the way in which they are explained by the model. They do not imply that the model is wrong, but they exist side by side with it and share with it the responsibility for explaining the movements in imports. Such is the dependence of import licensing on the availability of foreign exchange. Such also is the tendency for the import prices and import expenditures of industrial countries to be linked—via the demand of primary producing countries—to the demand for their exports.

Finally, the mechanisms in which the elements of gross money creation—particularly domestic credit expansion—play a responsive, rather than an autonomous, role do not purport to explain the movements of imports at all. However, all the types of mechanism discussed, and notably the last type, have the effect of increasing the correlation between gross money creation and imports. Since, when imports are forecast with the aid of the model, a substantial part of the effect on imports of changes in gross money creation is, in most countries, expected to occur in the same calendar year, any tendency for gross money creation to respond almost immediately to autonomous changes in imports will enhance not only the correlation between imports and gross money creation but also that between actual imports and those computed in accordance with the model. To this extent, the latter correlation will exaggerate the evidence in favor of the model.

However, the variations in exports which constitute the major part of the variations in gross money creation almost certainly play a pre-

¹² Any attempt to arrive at such propensities empirically, however, would risk imputing to them a correlation between exports and imports that might be partly attributable to other causes.

ponderantly active role in relation to imports, i.e., they tend to generate imports rather than the other way round. Moreover, both capital movements and credit creation are certainly autonomous, to a considerable extent. It is somewhat reassuring to observe that the countries for which the correlation between imports and computed imports is particularly good are, in general, not those for which there is reason to suspect that capital imports or credit creation behaves in an offsetting way so as to make the gross money supply adjust itself to imports.

Policy Implications

Several of the points made above have a bearing on policy. It has already been pointed out¹³ that any particular act of credit expansion would probably lead to a smaller *net* expansion of credit owing to its effect on government finances. It might be added that, owing to the elastic character of the banking system—its responsiveness, in many countries, to the demand for credit or the scarcity of money—any single act of credit expansion (or contraction) is likely to be offset in part by responsive contraction (or expansion) in other directions.

Even when the expansion of credit is measured on a net basis, however, it would be rash to deduce from the fact that gross money creation and imports move together that a deliberate curtailment of credit expansion would necessarily lead to a simultaneous decline of similar magnitude in imports. The apparent simultaneity in the relationship between credit expansion and imports is probably due in many cases (as shown above) to the fact that credit expansion alters in response to changes in the need for money created by changes in imports, or to the fact that a common cause affects simultaneously imports and credit expansion. It does not follow that a change in policy in regard to credit expansion would act on imports with anything like the same speed. It has already been recognized¹⁴ that a large change in any of the elements of gross money creation might be at least temporarily offset in part by a change in the velocity of circulation. The historical variations in velocity, the effects of which are shown in Chart Series II,¹⁵ would probably have been larger than they were had not the responsiveness of credit expansion or capital movements to changes in the scarcity of money rendered such variations unnecessary. It does not follow that velocity would remain equally steady if domestic credit were manipulated for policy purposes.

¹³ Polak, *op. cit.*, pp. 13–14.

¹⁴ *Ibid.*, p. 37.

¹⁵ Polak and Boissonneault, *op. cit.*, pp. 377–415.

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A more encouraging implication, as far as the effect of credit policy on the balance of payments is concerned, may be drawn from the degree of responsiveness found to exist in capital movements. To the extent that capital is attracted by credit scarcity and high interest rates, an autonomous policy to reduce the expansion of credit would tend to reduce the flow of net capital exports or increase that of net capital imports, thus bringing about a swifter remedial effect on the balance of payments than is implied in the model.

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