The Relation between Internal Inflation and the Balance of Payments

by

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Summary.

1. — Much controversy arises from lack of precision in the presentation of problems. This also applies to problems of economic analysis and of economic policy; they too may be considered from so many different angles and in so many different circumstances that a fruitful discussion requires a very precise setting of the problem under examination. This implies, *inter alia*, the indication of what is considered to be given, and of that which is unknown. Among the things that must be given, not only the structure of the economy considered, but also the nature of the problem should be mentioned: is it a problem of explanation or a problem of policy-making? In addition, other data are necessary, such as, in a problem of policy, the targets and the instruments.

2. — The target of any policy aiming at balance of payments equilibrium should be the maintenance of or the increase in liquid international assets. The absence of a deficit on current account represents an important contribution towards this goal.

3. — Although the balance on current account is identical with the balance between national income and national expenditure, a deficit of given size will not be eliminated by a reduction in expenditure equal in size to that deficit. As a rule, a larger reduction will be necessary; here too a certain « multiplier » must be applied. This policy will, however, lead away from high employment.

4. — Balance of payments equilibrium and high employment are not necessarily incompatible; their simultaneous realisation calls for the use of more than one instrument of economic policy. The price level may be one of them. By a reduction in prices the volume of exports may be raised and hence high employment maintained. An illustration by the Dutch policy of 1951.

5. — Under certain circumstances, however, prices are an insufficient regulator, and quantitative restrictions have to be applied.

6. — If more than one target is set, then a like number of instruments will be required. The extent to which any one of them must be used will depend on the nature of the ends to be obtained, considered as a whole. Reduction in expenditure, for instance, affects not only the reduction in the deficit on the balance of international payments, but reacts also on employment situation. The various instruments cannot be used independently of one another; economic policy must be considered as a coherent whole. The consequences of this approach for the organisation of economic policy.

7. — Useful contributions towards the coordination of this complex of measures may be made by econometric research.

1. *Importance of an Accurate Statement of the Problems.*

Economic policy is, in many countries, a rather controversial subject, and much harm is done by the lack of mutual understanding between various groups of the population. In postwar Holland a happy situation in this respect exists, partly due, it seems, to the fact that the economists of the various social groups have a common language, created by

science. It would certainly be dangerous to exaggerate the influence of science, but neither should it be belittled. The essence of scientific treatment consists above all in the accurate statement of the problem under consideration, and there is still much need of insisting on this, even in the case of discussions among experts. The subject to be discussed in this paper, viz. the relations between internal inflation and the balance of international pay-

ments, requires, no less than any other subject of economic analysis or policy, that the problem be stated as accurately as possible. This accuracy requires that the facts taken as known should be clearly stated and that we should know exactly what it is that is considered as unknown. The things taken as known should not only include the structure of the economy under consideration — which should be described in its main aspects —, but above all the nature of the problem at issue should be clear to the reader as well as to the writer. Is it a question of explaining the consequences of a given policy, or of finding the best means of attaining a given target? We may, for convenience' sake, call the first type of problem one of « economic analysis » and the second type one of « economic policy ». Once the type of problem has been indicated, it is necessary to state clearly the other data assumed. If an economic analysis is to be presented, what are the given changes in data whose consequences we want to ascertain? Or, if a political problem must be solved, what exactly are the targets set and the instruments permitted?

In the following essay we intend to discuss some problems of economic policy, aiming at the restoration or maintenance of balance of payments equilibrium. Our problem may, provisionally, be stated in the following terms. The structure of the economy under discussion is that of a modern western country with, generally speaking, free pricing and production, with a money economy, importing raw materials and semi-finished products and exporting finished products (1). The target set for a policy that aims at securing balance of payments equilibrium will be discussed at greater length in section 2. As the instrument of such a policy we will first consider national expenditure only, this being the total of all consumer outlays and net investments, including government expenditure; and this national expenditure will be considered as con-

(1) The terms finished and semi-finished do not mean any restriction, but are used for their imaginative force. In fact, almost every import is semi-finished in that it requires some handling before it reaches the consumer or investor; and every export is, by definition, from the national standpoint, a finished article.

sisting of two parts: a part depending on other economic variables such as income, prices, etc., and an « autonomous » part. The most conspicuous example of the latter is public expenditure as long as it is not rigidly linked up with public revenue. One example of such a case is the item « public works », but this is not necessarily the only example. Keynes generally used to consider investment expenditure as an example; the present author would, however, prefer to distinguish between investments dependent on income — by far the larger part — and autonomous investments. The latter would be another example of autonomous national expenditure. The autonomous part of national expenditure will be considered as one of the « data » in the present economic analysis; in our problem it represents the unknown « instrument variable »: what change in autonomous expenditure will be needed in order to counteract a given initial deficit $\bar{D}$ on current account in the balance of payments?

2. The Target of Balance of Payments Policy.

Balance of payments equilibrium is now generally considered to be a necessry factor of any sound economic policy. It is less certain what precisely should be understood by that phrase; various versions are available and recommended. Two well-known concepts are « equilibrium in all items except gold payments and further accommodating items », or on the other hand « equilibrium on current account ». Some remarks may be made on this topic before embarking on the main part of our argument. First, it goes without saying that not only equilibrium, but even a surplus is needed for countries that have not a « sufficient gold reserve ». By a sufficient gold reserve, a reserve is meant that is sufficient to meet the risks to which an « open » country is exposed in the course of business cycles or incidental disturbances. It is not easy to indicate exactly how great such risks are; one element might be the size of the gold stock which would be lost if the country concerned should follow, in a period of world depression,

a policy of high employment. If the gold stock needed for meeting these risks should be larger than a proportional part of the world gold stock, then such a proportional part should be the limit. A problem here is what principle of distribution among the various countries of the world would be the best: should it be the value of their trade or should it also depend on the fluctuations in that value? We think it should, but this will not be the topic of this paper.

A second remark to be made with respect to the concept of balance of payments equilibrium refers to the exact nature of the item that should be kept constant or even rising. Is it the gold stock only? Should it not be total external assets including e.g. foreign bonds and stocks? In our opinion a correct target would be « total liquid international assets ». This definition would exclude such bonds or stocks as are not readily saleable at any moment, but it might — and should, in our opinion — include commodity stocks or world staples. We emphasise this possibility since the lesson of 1951 and 1952 has been, in our opinion, that a switch from gold to raw material stocks and back, such as we had between the end of 1950 and the end of 1952, does not represent a real worsening or improvement in the situation of a country. One should not be scared by a decrease in the gold reserve, if it is nearly equated by a simultaneous increase in raw material stocks; nor should one be particularly pleased by an increase in gold stocks, if raw material stocks are exhausted to about the same extent. To be sure, raw material stocks should not be valued at their current prices, but a discount of say 20% could be made, to cover price risks. But attention should be paid to their existence. The problem of securing better statistics that would enable one to follow the course of raw material stocks is only a technical, and certainly not an insoluble problem.

However, whatever be the answer given to the question asked in this section, equilibrium on current account of the balance of payments will always be an approximation to our aim; and for simplicity's sake we shall base our

analysis on this approximation. Our findings may be easily extended to the more complicated target above stated.

3. Internal Inflation and the Balance of Payments.

The fundamental relation upon which we are going to build our main argument is the well-known equality of

(a) the surplus on the current items of the balance of payments and

(b) the surplus of national income above national expenditure.

For our further deductions it is convenient to express this equality in symbols. Indicating by:

E export value of goods and services;

M import value of goods and services;

Y national income, net, at market prices, and

X national expenditure ($=$ consumption $+$ net investment), we have:

$$E - M = Y - X \qquad (1)$$

The equation is the consequence of nothing but a definition, namely the definition of national income: this may be defined as value added to imports by the national process of production, or:

$$Y = (X + E) - M \qquad (2)$$

In this equation the expression in brackets represents the value of national output, whereas M is the input.

Indicating by D the deficit on the balance of payments (current account) we therefore have:

$$D = M - E = X - Y \qquad (3)$$

This equation has much in common — from the purely formal point of view — with the famous equation of Irving Fisher for monetary circulation. It is a truism and so cannot be doubted; but the use made of it will depend very much on the problem to be solved, i.e. on which of the symbols represents known

quantities, which unknown. Each of the four may be, in certain problems, the unknown. If it is the intention to calculate income, as in (2), then Y is the unknown; if, however, the condition set is that Y should have a certain level, say the high-employment level, then other variables will be unknown. For long-term planning, e.g. E may be the unknown: and in our present problem the unknown is X: how must we change X in order to arrive at a zero value for $E - M$ or for D? [cfr. equation (3)].

Here again the necessity of stating our problem as accurately as possible, becomes apparent: what further must we know, in order to make the problem a definite one?

It has been suggested that, in order to reduce some initial value of the balance of payments deficit $\bar{D}$ to zero, it would be necessary to reduce national expenditure X by the same amount $\bar{D}$: if a deficit of 1 milliard guilders is feared — as was the situation facing the Dutch government early in 1951 —, then reduce national expenditure by 1 milliard guilders. In those days *The Economist* advocated that a similar action be taken by the British Government.

Evidently this would only be correct if Y were given and fixed beforehand, irrespective of X; but this will not be the case, even if the initial situation (with $\bar{Y}$ as the value for Y) were one of full employment. For the very reduction of X will also reduce Y, and, since national expenditure again partly depends on national income Y, X will also show « secondary changes » or induced changes. Moreover, imports also depend on the size of national income; hence, an initial change in expenditure with its reaction on Y will simultaneously reduce imports and hence the deficit on the balance of payments.

The necessity to distinguish between the autonomous part and the dependent part of expenditure and to introduce all the relations existing among the various variables becomes apparent and the correct treatment of the problem runs as follows. We have to admit that both X and M are functions of Y; let us write:

$$X = \xi_0 + \xi_1 Y \qquad (4)$$

$$M = \mu_0 + \mu_1 Y \qquad (5)$$

Here ξ_0 represents what we termed the autonomous part of national expenditure; similarly, μ_0 might be called the autonomous part of imports. The other new symbols ξ_1 (and μ_1) indicate by how much expenditure (or imports) increases if national income increases by one unit; they are the well-known « marginal propensity to spend » and the « marginal propensity to import ». We cannot now deliberately change X, but we can change the autonomous part ξ_0; hence the problem is to find ξ_0, provided that $D = O$ and by using (4) and (5).

We will discuss this problem in two consecutive stages corresponding to two different and very important aspects of the subject. To begin with, we suppose prices to remain unchanged and hence the entire policy to be one of changes in volume. In the second stage, we assume that prices may also be used as an instrument of policy.

The simplification obtained in our first stage is considerable. We may now say that exports will not change; at least in so far as the initial position was not one of shortage, where part of the foreign demand could not be met. If exports do not change, the adaptation will have to come from imports only; and evidently income Y will have to fall by so much as will cause a decrease of $\bar{D}$ in imports. Since imports, according to (5) show variations μ_1 times those of Y, the reduction needed in Y will be

$$\Delta Y = \frac{\bar{D}}{\mu_1} \qquad (6)$$

This reduction must be the result of a change $\Delta \xi_0$ in the autonomous part ξ_0 of national expenditure; and since, according to (3) and (4):

$$\Delta D = -\bar{D} = \Delta X - \Delta Y = \Delta \xi_0 + \xi_1 \Delta Y - \Delta Y$$

we find: $\Delta \xi_0 = (1 - \xi_1)\Delta Y - \bar{D}$

or $\quad \Delta \xi_0 = -\left(\frac{1 - \xi_1}{\mu_1} + 1\right)\bar{D} \qquad (7)$

From this result it appears that, in fact, the reduction in autonomous expenditure must exceed $\bar{D}$; it must be $\dfrac{1 - \xi_1}{\mu_1}\bar{D}$ larger than $\bar{D}$.

Here too a « multiplier » must be applied; it is different, however, from the Keynesian multiplier, in which the marginal propensity to import μ_1 does not appear. Moreover it will be one — and therefore, in a sense, « absent » — if the marginal propensity to spend ξ_1 is equal to 1. It will clearly be larger than 1 if that marginal propensity to spend is well below 1. This may in particular be the case if we are interested in short-term effects, and if it is assumed that government expenditure is independent of government revenue, whereas the marginal rate of taxation is considerable. Taking that rate as equal to 30%, and assuming that the public spend all their disposable income, we find that $\xi_1 = 0.7$. If moreover, we take $\mu_1 = 0.5$, as is the case in Holland, we obtain for the value of our multiplier $\dfrac{0.3}{0.5} + 1$ or 1.6. Hence, in order to eliminate a balance of payments deficit of 1 milliard guilders, a reduction of autonomous national expenditure by 1.6 milliard guilders would be necessary. The corresponding reduction in income would be 2 milliards.

Evidently the employment situation would then be considerably worsened.

4. *Balance of Payments Equilibrium and Employment.*

This raises the question whether a solution may not be found which would not threaten the employment situation. It is sometimes held that balance of payments equilibrium and full employment are incompatible. Apart from the somewhat ambitious term « full employment » which we shall not use but replace by high employment, we think this statement of incompatibility is a clear example of the need of drawing a net distinction between various problems. Surely, they are incompatible as long as only one instrument — say, State expenditure — is handled with a wish to attain both goals. But they are not so, of course, providing we accept one further instrument of policy. The most appropriate instrument in this case would be the price level of export goods. It might, however, be some other factor influencing exports, say a better sales orga-

GRAPH 1

THE RELATION BETWEEN RELATIVE EXPORT PRICE INDEX P AND RELATIVE EXPORT VOLUME V FOR THE NETHERLANDS (a)
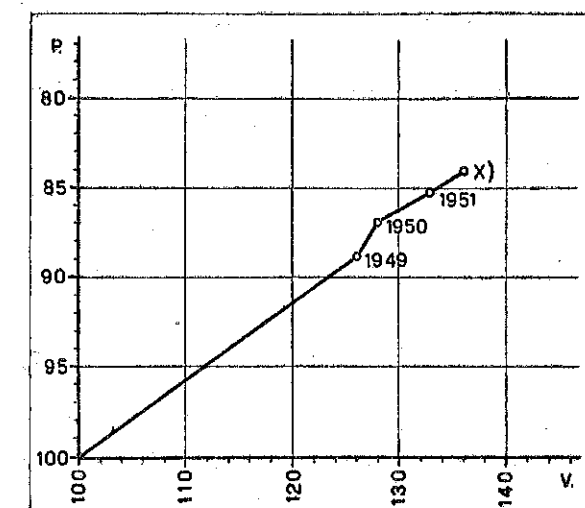
(a) « Relative » in relation to competing countries.
Figures for 1948 have been taken = 100.
x) indicates average for period April 1951-March 1952

nisation. The price level itself may not be the variable to be handled directly; it might be the exchange rate, some indirect tax rate, or some subsidy, or the wage rate. All of them should be understood in a relative sense, namely, relatively to those prevailing in foreign countries. This may at once be illustrated by graph 1, where the movement of export prices of the Netherlands with regard to its competitors is indicated for the years 1948 to 1951 inclusive. Although prices have risen in Holland, they rose less than elsewhere, so as to make them fall relatively by about 15% between 1948 and 1951.

When introducing this second instrument of economic policy, we have to admit that exports E will no longer remain constant. On the contrary, if high employment was prevailing in the initial situation, then the maintenance of activity and hence of the volume of imports is our present aim, along with the closing of the balance of payments gap. Since import prices do not change, at least if exchange rates do not change — and this we will assume — import value M will also remain unchanged. The entire adaptation will now have to be found in exports.

Let us assume that a fall Δp in export prices will cause export value to rise by $-\varepsilon\Delta p$; then we have

$$\Delta E = -\bar{D} = -\varepsilon\Delta p \qquad (8)$$

from which relation we may calculate Δp as soon as ε is known. Again we raise the question by how much national expenditure will have to be reduced. We must now take account of the influence of the price level on both income and expenditure. This means that we have to introduce a relation:

$$\Delta Y = \eta\Delta p \qquad (9)$$

telling us how Y changes with changing price level p. Moreover, we have to refine relation (4), which was meant to be valid for constant prices only. In a general way it may be replaced by:

$$\Delta X = \Delta\xi_0 + \xi_1\Delta Y + \xi_2\Delta p \qquad (10)$$

As a first approximation we may, however, neglect the term with Δp; this is particularly true if people just spend their disposable income, regardless of prices. In order not to complicate our argument, we shall therefore put $\xi_2 = 0$.

It should not be forgotten that (9) is only meant for a change where the volume of employment does not alter; it cannot be used therefore in cases of changing volume.

Having found Δp from (8) we may now, generally speaking, determine ΔY from (9) and, with its help, and again using (3), $\Delta\xi_0$. The result is:

$$\Delta\xi_0 = \left\{ 1 + \frac{\eta}{\varepsilon}(1 - \xi_1) \right\}\bar{D}$$

Again we find a multiplier, at least as long as $\xi_1 < 1$. Another condition for this multiplier making its influence felt is that ε should not be very large; in other words, if the demand for exports is very elastic, this multiplier will be absent. Evidently its presence is due to the need of reducing prices, if exports are to be expanded. It is not sufficient « to make room », in the destination given to the national resources, for an increase in exports

equal to the deficit $\bar{D}$ that must be eliminated; a larger reduction in autonomous expenditure is needed, since if increased exports can only be sold at lower prices one has to export more in order to pay for the same imports. (By the way, it may be observed that in this particular case there is no difference between the reduction in autonomous expenditure and the reduction in total expenditure).

The train of thought just exposed was at the basis of the policy of the Dutch government early in 1951, when it was decided (2) to cut total national expenditure by about 1.6 milliard guilders, in order to « make room for » a deficit, in the current items of the balance of payments, estimated at 1.1 milliard, and partly due to the change in terms of trade after 1949, partly to the increase in the armament programme. The programme was based on an estimate of this multiplier of about 1½.

At the same time, in agreement with the trade unions, who showed full understanding of the situation, wages were not permitted to rise as fast as the price level; in this way the relative price fall in relation to the outside world was secured. .

5. Prices not always a Sufficient Regulator.

High employment and an equilibrated balance of payments are not therefore incompatible with each other; on the contrary the two should be aimed at simultaneously, which in principle is possible by the application, apart from budget policy, of a wage-and-price policy (3).

Apart from the difficulty to adjust wages downward, there is the well-known difficulty about the possible inelasticity of exports. As far as present statistical evidence goes, there are countries for which the short-run elasticity is so low that a reduction in export prices does not raise but may even reduce the value of exports (4). This seems to be the case with regard to certain highly industrialised countries,

(2) Cf. *Central Economic Plan* (in Dutch), CENTRAL PLANNING BUREAU, The Hague.
(3) This is also the main thesis in J.E. MEADE, *The Balance of Payments*, London, 1951.
(4) The reader will understand that our coefficient ε will become zero if the elasticity of export quantities is one.

among which the United Kingdom and possibly also Japan. It seems probable that over a longer period, say three years and more, the elasticity may be high enough to eliminate this cause of concern. But it may very well be that the instrument does not work in emergency situations. The instrument will be unworkable, even if the values of ε are somewhat above zero, for then already the necessary price changes are too large to be realistic. In such emergency situations the only remaining possibility is that of quantitative restrictions, at least temporarily. It should not therefore be regarded purely as a token of a spirit of « dirigisme » if a country like the United Kingdom has applied this instrument; sometimes the circumstances may impose it, even on the most « liberalistic » government.

6. Interrelations of Instruments for Multi-Target Policies (5).

As observed above, the simultaneous attainment of more than one target requires the application of more than one instrument of policy. Is has sometimes been believed that each instrument serves one of the goals and that there can therefore be a certain independence of each from the others. One example is that the responsibility for balance of payments equilibrium would be in the hands of the financial authorities, the care for « social justice » and hence for the wage level in the hands of the social authorities etc., and that all these authorities would act independently one of the others. It is our conviction that this is only possible under special conditions and that, as a rule, the degree to which the instrumental variables must be changed is interdependent and, for each instrument, dependent on the whole set of targets. Our discussion of balance of payments policy already shows this. If we add to our targets that of high employment we must change the amount by which national expenditure has to be reduced: the amount found in equation (11) is different from the amount found in equation (7). How far this

(5) For a fuller treatment of this subject the reader may be referred to the author's publication « *On the Theory of Economic Policy* », Amsterdam 1952.

interdependence holds good, certainly depends on the precise nature of the problem. It is correct to say, e.g. that a change in wage rates does not affect the balance of payments equilibrium if wage-earners and non wage-earners both spend their available incomes entirely, and if the government does the same. This may be correct for long-term reactions, but it is certainly not so for short-term ones. So here again, the accurate statement of the problem appears to be important.

This interdependence of targets and instruments is of some importance for the organisation of economic policy. There cannot be a group of independent decisions on the various branches of economic policy; the decisions regarding each instrument can only be taken if all the targets are known; and the authorities responsible for the changes in each separate instrument must therefore act in conformity with certain indications given by a central authority, as a rule the Council of Ministers. It also follows that it is no use to assign to one authority the task of attaining one of the targets only; the authorities should, so to speak, deal with the instruments of policy and not with the targets.

7. The Necessity of Quantitative Research on Economic Interdependencies.

The correct handling of the whole body of instruments for economic policy requires an insight into the functioning of the economy which is illustrated in a simplified way by our foregoing deductions on financial policy. To quote just one example, it is desirable to know the size of the coefficient in our formula (8), showing to what degree exports react on prices. This relation is illustrated by graph 1, where it is found that a reduction between 1948 and 1951, by about 15%, of the relative prices of Dutch exports was accompanied by an increase by 40% of the relative Dutch export volume. The word « relative » here refers to the ratio of the Dutch figures to the corresponding figures of the competing countries as a group. Graph 1, of course, represents a very simple way of investigating a relation. Before taking it for granted that the correlation shown has

causal implications, one should investigate the nature of the relationship shown by economic analysis. It is likewise desirable to test the relation for individual markets and commodities. Finally, many statistical problems, on which a vast literature exists, are involved.

The knowledge of the coefficients relevant to economic policy can therefore be obtained only by specialised econometric work. It would indeed be desirable that such work should be done partly in each country when purely national problems have to be solved, and partly by an international agency when the problems to be considered are of importance to many countries. Examples of the latter problems are the forecasts of the main raw material prices or comparative studies on an international scale of some specific relation. Useful work is already being done by such institutions as the United Nations Secretariat, the International Monetary Fund, The Food and Agricultural Organisation, The Economic Commission for Europe and the Organisation for European Economic Cooperation. Still more could be done. Economic policy and planning in the various countries could be placed on a better and more efficient basis, if some fundamental work were undertaken by the U.N., comparable to the analysis of world development made by Colin Clark in his « *Economics of 1960* ». Maybe the work on behalf of employment policy will develop into such an analysis. It should somehow be coordinated with the other work already mentioned.