



SPECIAL PAPERS IN INTERNATIONAL ECONOMICS

No. 7, MARCH 1965

RECENT
DEVELOPMENTS
IN THE THEORY
OF INTERNA-
TIONAL TRADE

W. M. CORDEN

INTERNATIONAL FINANCE SECTION

DEPARTMENT OF ECONOMICS

PRINCETON UNIVERSITY · 1965

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**FRITZ MACHLUP, Director
International Finance Section**

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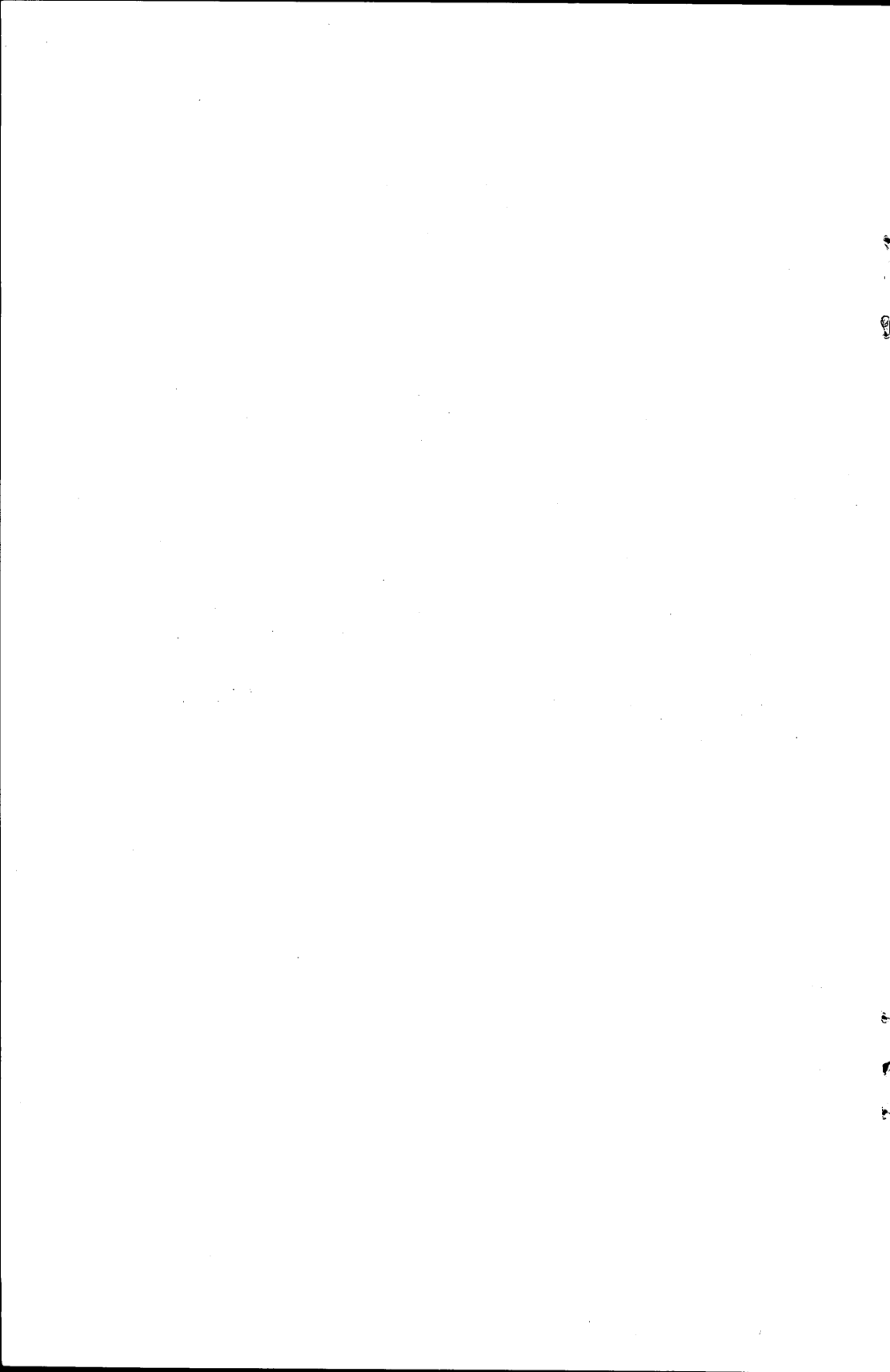
PREFACE

This is a slightly revised version of a paper presented at the January 1964 Congress of the Australian and New Zealand Association for the Advancement of Science. It may be regarded as a supplement to Professor Haberler's well-known *Survey* in the present series, although in some respects the points of view differ. Aspects of the theory of international trade which have attracted the most attention in recent years are dealt with more fully here. The paper was written before I saw Bhagwati's survey of the pure theory [14] which covers all aspects of the present paper other than Section I, and which is more detailed, rigorous, and formal. The approach here is rather to focus on the main changes in trade theory and to look at these, sometimes sceptically, in the light of their usefulness to applied economics. But our assessments of the main trends are very similar.

I am greatly indebted to H.W. Arndt, who persuaded me to contribute this paper as part of a symposium on "Recent Developments in Economic Theory" and who made numerous suggestions which have been incorporated in the paper.

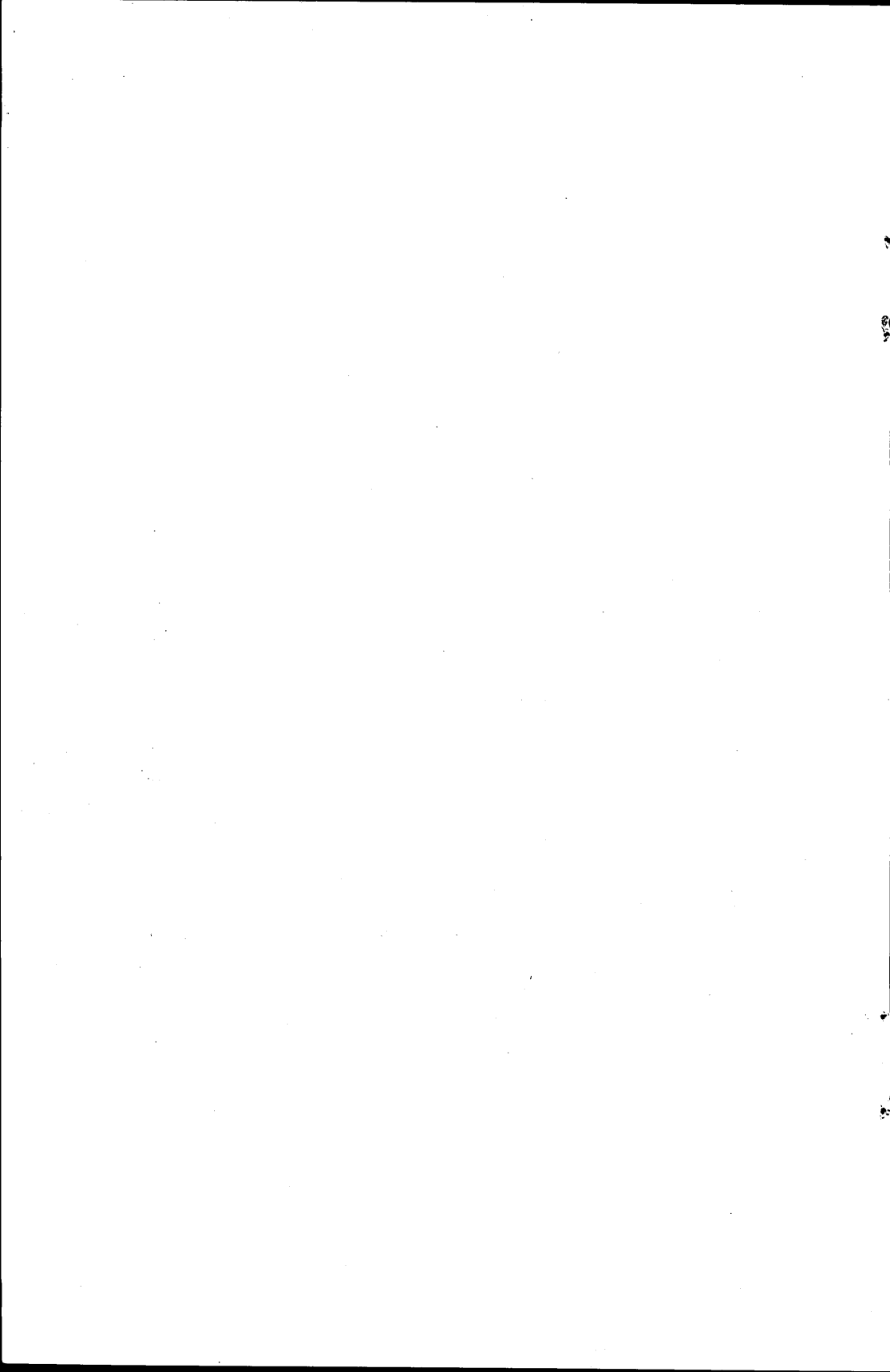
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W.M.C.



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Recent Developments in the Theory of International Trade

This paper outlines some of the principal improvements or additions to the theory of international trade since Metzler's survey [91], published in 1949. It covers, therefore, a period of some fifteen years, though many of the developments of this period have their origin in contributions published earlier. The emphasis is on recent developments, since excellent summaries of the current state of the theory by Haberler [35], Caves [19], and Johnson [51] are available.

First one must decide what is theory. There have in recent years been many controversies arising out of practical issues which have pre-occupied international-trade economists. Is there a long-run dollar problem, an international-liquidity shortage, a long-run tendency for the terms of trade of underdeveloped countries to deteriorate—and what are the causes and remedies for these alleged diseases? What place should international trade and the comparative-cost principle have in development plans of underdeveloped countries? What are the gains and losses from the establishment of common markets? In these controversies theorists usually play an active part and make full use of trade theory. But if it is just a matter of existing theory being applied, then there is no new development in theory. Sometimes in these debates new hypotheses are put forward with varying degrees of rigour. But one cannot say that there is at that point a new development in trade theory unless (a) the hypothesis is developed with the rigour appropriate to theory—i.e., the assumptions are clearly stated, the method of deriving the conclusions is explicit, and the relationship of the new concept to the existing state of thought is specified—and unless, in addition, (b) the particular theory can be integrated into the corpus of *the* theory of international trade—i.e., the theory has a relevance wider than the immediate application from which it has sprung.

Granted that we limit ourselves to *theory*, there is still the problem of choosing relevant theory. Of the numerous articles on international-trade theory which appear in the learned journals not all contribute to the development of the central body of thought. To the building of

models there is no end. Many are useful variations on a main theme, suitable for one country or one use, but not suggesting any new approach. Others may be highly complex and clever models but the results are not interesting because the assumptions are poorly chosen. Others, again, are tidying-up operations, perhaps using a modern technique to resolve an ancient argument, of little or no current interest. And then, of course, there are many ways of doing essentially the same thing. The choice between the relevant and the irrelevant, the subsidiary and the main-flow contribution, the original and the unoriginal, is one which I must make on my own responsibility. But let me take cover by noting that I shall be much influenced by the writings of others, if only as a check on my own impressions.

The history of contemporary economic thought is indeed a dangerous task upon which to embark. One may easily lack perspective. One may miss a crucial turning-point, perhaps an obscure article which later is revealed to have been seminal to a new theoretical approach. More likely, one may proclaim as revolutionary a new idea which is soon to be forgotten, which is perhaps just the rediscovery of an old truth, or which has happened to excite one's mentors or colleagues. Hence I approach the present task with caution.

I. Balance-of-Payments Theory

One branch of international-trade theory is usually called international-monetary theory and is concerned with the way in which equilibrium in the balance of payments is maintained or can be maintained. In Metzler's survey this subject was discussed under two headings.

First, in "the theory of employment and the balance of payments," he outlined the effects of the Keynesian revolution on trade theory through the concept of the multiplier. The classical theory had assumed that the balance of payments adjusted itself through a monetary mechanism, which combined with internal price flexibility to maintain full employment. Now it was realised that, quite distinct from this classic mechanism, an adjustment process operated through the *international-trade multiplier*—though, as Metzler pointed out, the adjustment would not be complete: some part of an initial balance-of-payments disequilibrium is likely to remain even after the multiplier has worked itself out.

Secondly, under the heading of "fluctuating exchange rates," Metzler discussed the circumstances in which exchange fluctuations could have perverse effects. This exchange-stability discussion had been very vigorous in the interwar period, inspired by the actual exchange instabilities of the time. The upshot of the theoretical discussion was a formula which expressed the *elasticity of the balance of payments*—i.e., the responsiveness of the balance of payments to exchange-rate variations—in terms of four *partial* elasticities: the elasticities of demand and supply for exports and imports. The formula states the conditions required for a devaluation to improve the balance of payments, i.e., for the exchange market to be stable. It is a development of the well-known Marshall-Lerner rule. An excellent exposition of this partial-equilibrium analysis has been provided by Haberler [33].

Two observations can be made about the state of the theory at that point of time. Firstly, it was concerned primarily with automatic processes and not with the determination of optimum policies. Metzler considered the way in which the multiplier mechanism naturally equilibrated or part-equilibrated the balance of payments. In framing the problem in this form, he, and the writers he summarised, were in the classical tradition, since the classical question was the mechanism

by which, under the gold-standard system, the balance of payments was equilibrated. Similarly, under his second heading Metzler asked, not the policy-orientated question whether a devaluation would improve the balance of payments, but the factual question whether foreign-exchange markets are stable.

Secondly, the theory appeared to separate quite sharply income effects (the multiplier) from price effects (exchange-rate variations). Metzler's exposition appeared to suggest that there are two automatic and distinct mechanisms—the international-trade multiplier, the analysis of which assumes constant prices, and variations of exchange rates, the analysis of which assumes constant money incomes. One can overdramatise the changes in this branch of theory which took place in subsequent years, since one can find substantial hints of the new developments in the standard writings before 1948. But in fact the change has been dramatic.

Meade's "The Balance of Payments"

The most important contribution to international-trade theory published during the period under review has, in my judgment, been J.E. Meade's *The Balance of Payments* (1951) [82]. The core of this book is a policy model. The policy objectives are taken to be internal and external balance, each carefully defined; internal balance being required in both countries of the two-country model with which Meade operates in the greater part of the volume. There are two main types of policy: income adjustments and price adjustments. Income adjustments operate through fiscal and monetary policies, price adjustments through exchange-rate variations or wage flexibility. To achieve simultaneously two objectives of policy, two policy variables are required; to achieve three objectives, three variables; and so on. This is the conceptual core of the model. In Tinbergen's terms, the number of instrumental variables must equal the number of targets. The model is worked out in great detail. It is shown that if only one policy variable is used, conflicts between objectives can arise. For example, if a country has a balance-of-payments surplus and excess demand for domestic goods, and if the only variable is income adjustment, external balance calls for an increase in expenditure and internal balance for a decrease. Similarly, if a country has a payments deficit and domestic excess demand and if the only variable is exchange-rate adjustment, external balance calls for depreciation of the exchange rate and internal balance for appreciation. Meade shows the gold-standard mechanism to be a

special case of his model: the gold-standard theory assumes that external and internal balance are maintained by a combination of income effects (through the monetary system) and price effects (through internal wage-price flexibility).

The new features of Meade's approach were (1) the policy orientation, and (2) the integration of income and price effects. In both respects there was a departure from previous theory, which had been concerned primarily with automatic processes and which tended to keep the income and price mechanisms in watertight compartments. Meade's basic model has become part of the luggage of every economist. Subsequent discussion has qualified it and generalised it, but the central theme stands. A number of diagrammatic representations have been published, such as the present author's [24], and Australian students have long been familiar with a diagram devised by Swan [124] which sums up the main elements of this type of model.

One may ask how original Meade's approach really was. The basic approach was developed about the same time by Tinbergen [125], who was concerned with the more general problem of achieving a number of policy *targets* with a variety of policy *instruments*. He made the key point that the number of instruments must be equal to the number of targets. Probably the fullest discussion of the relationship between domestic and international equilibrium which had previously appeared was in an article by Nurkse published in 1947 [106], but while the main issue was certainly posed, the solution was not systematically worked out. In Metzler's survey there was no more than a hint of the problem. Joan Robinson's essay on "The Foreign Exchanges" [114] was probably the principal text on balance-of-payments policy until Meade's book; it is in relation to the sole paragraph dealing with the relationship between a variety of policies and a variety of objectives—a paragraph which, while perfectly correct, leaves us with the impression that everything depends on everything else—that the achievement of *The Balance of Payments* should be judged.

It is now obvious that there is no one rate of exchange which is the equilibrium rate corresponding to a given state of world demands and techniques. In any given situation there is an equilibrium rate corresponding to each rate of interest and level of effective demand, and any rate of exchange, within very wide limits, can be turned into the equilibrium rate by altering the rate of interest appropriately. Moreover, any rate of exchange can be made com-

patible with any rate of interest provided that money wages can be sufficiently altered. The notion of *the* equilibrium exchange rate is a chimera. The rate of exchange, the rate of interest, the level of effective demand and the level of money wages react upon each other like the balls in Marshall's bowl, and no one is determined unless all the rest are given [114, p. 103].

Criticisms of Meade's "The Balance of Payments"

A variety of criticisms have been made of Meade's approach and model. It will be useful to examine these in some detail in the light of subsequent contributions to the literature. The first criticism, made rather forcefully by Johnson [46], is that *The Balance of Payments* contains explicit or implicit value judgments. The fundamental value judgment governing the whole book is that internal and external balance are desirable policy objectives. Most people would justify this on the ground that they are in fact policy objectives of most governments. But the book does also display a predilection in favour of the use of general price adjustments, notably variable exchange rates, in preference to other devices, such as quantitative controls. There are two aspects to this latter criticism. Firstly, "equilibrium" is defined as a situation where controls for balance-of-payments reasons are absent; thus, by definition, it is impossible to attain external balance through quantitative controls. A preferable approach is to generalise Meade's model by recognising that from the point of view of internal and external balance, the latter more widely defined, there are a number of policies which all have a similar effect: general price adjustments, such as exchange devaluation; selective price adjustments, such as tariffs and export subsidies; and quantitative controls. All these policies, given certain conditions, *switch* expenditure away from foreign goods on to home goods (or vice versa). These are *switching* policies, as distinct from expenditure-reducing or increasing policies. This generalisation of Meade's model we owe to Johnson [47, Ch. 6]. For example, for a country with an external deficit and internal balance, Meade would have recommended a general price adjustment (devaluation), combined with some reduction in expenditure, to absorb the excess demand which the devaluation would otherwise cause. Now we would say that some switching policy designed to shift expenditure from foreign to home goods, combined with expenditure reduction, is required. The choice between switching policies depends on a variety of considerations. They have different welfare effects, notably on the

internal distribution of income and on the terms of trade. Some carry an automatic expenditure reduction with them, and may be preferred for that reason.

The other criticism of Meade's general preference for price adjustments disputes his view that with given money incomes a reasonable devaluation will succeed in improving the balance of payments, i.e., will succeed in switching expenditure away from foreign goods. This is the old assumption that the foreign-exchange market is stable and does not require excessive price adjustments to cope with normal disequilibria; it implies certain assumptions about the values of the four elasticities concerned. He gives a number of plausible reasons why the relevant demand elasticities may normally be expected to be high enough, but these reasons are not in themselves convincing; only empirical evidence will convince. Subsequently another *a priori* reason for expecting exchange stability has been advanced by Morgan [96], namely that exchange instability implies that the market for at least one commodity must be unstable, apparently an improbable situation—though I must confess that the precise significance of this argument eludes me. More relevant seem to be the attempts at statistical verification of demand elasticities in foreign trade. Here a whole literature has grown up and many issues, basically of statistical methodology, have been debated. The early measurements, based on interwar data, yielded very low elasticities and gave rise to what has been called "elasticity pessimism." Subsequently it has become clear that the measurement techniques have been biased in favour of low elasticities and that for a variety of reasons long-run elasticities are likely to be higher. Harberger [39] and Cheng [21] have surveyed the evidence and the literature. It seems to be the general view now that, provided appropriate expenditure reduction is associated with it, a devaluation is likely in time to improve the balance of payments. Two observations may be made about the significance of a stable exchange market, i.e., one where a devaluation improves the balance of payments. First, a necessary (though not sufficient) condition for an unstable market is that the elasticity of the foreign demand for a country's exports is less than unity for movements down the demand curve. If the demand elasticity is on the same side of unity on both sides of the initial equilibrium point (i.e., elasticities are symmetrical), this means that the degree of trade restriction is initially below the optimum from the particular country's point of view; an export tax or quantitative control on exports would raise export income. One wonders how many

countries have failed to exploit such an obvious opportunity for national betterment. But Balogh and Streeten [8] have stressed the possibility of asymmetrical elasticities—above unity for movements up the curve and below unity for movements downwards; where this situation exists an unstable market is much more likely. Secondly, the whole discussion of exchange stability assumes an appropriate internal-balance policy, one which maintains constant money incomes. If a devaluation is permitted to give rise to internal inflation, it may not improve the balance of payments, even though the elasticities (defined for a constant money income) are high enough to satisfy the requirements of the stability formula. This aspect will be discussed again below. Furthermore, it assumes of course that foreign countries do not retaliate, that the foreign demand and supply curves are given.

A second criticism of Meade's approach is aimed at the implication that each policy variable is tied to a specific policy objective. Thus, in his main model financial policy is used to maintain internal balance and exchange-rate variations to maintain external balance. Nurkse [108] pointed out that, while it is possible to associate one policy with one aim and the other policy with the other aim, each policy does affect both the internal and the external situation, so that it is purely arbitrary to link one aim with one particular policy. For example, beginning in internal and external balance, a reduction in expenditure will create both unemployment and an external surplus. Furthermore, in certain circumstances—to be discussed below—a failure to maintain internal balance makes impossible the attainment of external balance.

Another limitation of Meade's book is its static character, even though the exposition may sometimes suggest a time element. An obvious development would be to study the problem of maintaining internal and external balance in a context of growth. No systematic theory has so far emerged here, though there has been no shortage of hints and references in the context of particular situations. The main development, to be referred to further below, is Johnson's model [47, Ch. 4] analysing the effects of productivity changes on the balance of payments. Another complication, recently introduced by Mundell [99], is to allow for varying time lags in the operation of different policy variables or adjustment processes. One can then obtain cyclical, cobweb, and similar models, all with the flavour of reality about them.

The final limitation of Meade's approach is a most important one. In his analysis of devaluation and of controls (in fact, what we would

call *switching* devices), Meade assumes that internal balance is always maintained by appropriate financial policy. Starting in internal balance, a devaluation, he points out, will be inflationary. But he assumes that expenditure is always appropriately reduced by means of financial policy. Now what is the effect of devaluation when internal balance is not deliberately maintained by expenditure adjustment? In other words, what is the effect of a switching policy alone, as distinct from a switching policy combined with an appropriate expenditure adjustment? This he does not pursue; as a result, in his analysis of devaluation he assumes that constant money incomes are maintained. He improves on his predecessors by showing clearly what is required to maintain constant money incomes, but like them does not show what happens to the balance of payments when constant money incomes are not maintained.

The Absorption Approach

It is this omission which is remedied by the *absorption* approach. Alexander, in an article published in 1952 [3], asked the old question of the effect of a devaluation on the balance of payments. But, unlike Meade, he did not assume that internal balance was automatically maintained by financial policy, and indeed neglected internal balance as a policy issue. He put all the emphasis on income effects by starting with the accounting identity that the foreign balance (deficit or surplus) is equal to the difference between the total production of goods and services and the total *absorption* of goods and services, absorption simply being the sum of consumption and investment expenditures in real terms. Therefore, if a devaluation is to improve the trade balance, irrespective of the elasticities, absorption has to fall in relation to production. The traditional elasticities seemed to have no place in this way of thought.

For the Keynesian situation of initial unemployment the absorption approach was not really new. A devaluation which succeeds initially in switching demand away from foreign to domestic goods sets up a multiplier process leading to a rise in imports and perhaps a rise in "hoarding" (savings minus investment). The absorption approach tells us that the trade balance can improve only if finally there is a rise in hoarding; otherwise the initial balance-of-payments improvement will be reversed by the rise in imports resulting from the multiplier. This mechanism is referred to in the classical articles on exchange stability—notably Brown's article of 1942 [18], but also in Joan Robinson's article

[114]—though the income effects were something of an afterthought and in the classical literature it was always assumed that the rise in real incomes associated with the multiplier process would in fact yield a rise in hoarding.

The absorption analysis is more significant when there is initially internal balance, not least because this was actually the situation in most countries in the 1950s. Consider the extreme case where no increase in domestic output is possible. A country has a balance-of-payments deficit and devalues, so that demand is switched from foreign goods to domestic goods. As this extra demand for home-produced goods cannot be satisfied, it may directly spill over on to imports, it may cause prices to rise until the excess demand has been diverted to imports, or it may be hoarded. Only insofar as any extra hoarding takes place can the balance of payments improve. But is there any reason why a devaluation should cause a rise in hoarding? Alexander explored various possible ways in which devaluation might raise hoarding—for example, through changes in income distribution and through the cash-balance effect—and he concluded, I think correctly, that “in many cases, in which the question of devaluation is likely to become a live issue under conditions of full employment, the favorable direct absorption effects are likely to be weak” [3, p. 274]. On the assumption that we start in internal balance and that a devaluation leads to no significant hoarding (or “disabsorption”), it follows that a devaluation alone cannot improve the balance of payments. Therefore, it is wrong to associate exchange-rate variations with external balance and financial policy with internal balance, as Meade has done. An improvement in the balance of payments due to devaluation is possible only if, simultaneously with the devaluation, expenditure (absorption) is reduced by deliberate policy. This is the amendment to Meade’s model or exposition required by the absorption approach, and is needed because Meade never considered the particular situation referred to here.

Alexander appeared to relegate the elasticities to the wastepaper basket. This gave rise to some debate from Machlup [77] and others. In an article in 1959 [4], Alexander presented a “simplified synthesis of elasticities and absorption approaches,” which represented a strategic withdrawal but was also a valuable clarification of the issue. He pointed out that the four traditional elasticities and the exchange-stability formula based on them can be defined as referring to a situation of constant money income, of constant domestic prices, or in fact any specified situation or pattern of responses. But (as Balogh and