

## Some Thoughts on the Monetary Approach to Balance of Payments Theory<sup>@</sup>

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My task is to give some observations on the body of doctrine that has come to be known as the monetary approach to balance of payments theory and policy (henceforward abbreviated to MAB). In his later years Harry Johnson devoted a number of papers to the exposition of this theory, though the origins of his own version of the theory can be seen clearly in his excellent and influential 1958 paper. This task is made difficult by some ambiguity concerning the status of the theory; whether it is to be regarded as an entirely new theory confronting some previously accepted orthodoxy, or whether it is simply an evolutionary development of orthodox theory. In his 1972 paper, Harry Johnson refers to "a new approach to the theory of the balance of payments and of balance-of-payments adjustment (including devaluation and revaluation) that has been emerging in recent years from several sources" (1972, p. 147). The impression of novelty is confirmed by his comparisons of the MAB with other approaches, the "elasticity" and "absorption" approaches, the "economic policy" approach, etc. Presented in this fashion the MAB seems to represent a challenge to accepted views and those who do not accept it seem

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liable to the charge of wrong thinking, or of support for obsolete theories. Yet when we turn to the recently published collection of papers edited by Frenkel and Johnson we are told in the Introductory Essay that the theory "has a long, solid and academically overwhelmingly reputable history. The continuity of its development, however, was reversed and the approach suppressed in international economic theory for upwards of a quarter of a century by the events of the 1930s" (1976, p. 29).

It is not at all clear from Frenkel and Johnson what exactly was "reversed" and "suppressed" after the 1930s. If the MAB is a reincarnation of the "price-specie" flow mechanism that was supposed to explain adjustment under the 19th Century gold standard then it is hardly possible to speak of suppression. The theory was simply found wanting—it could not explain the facts. If the price-specie flow mechanism was in fact a distortion and misrepresentation of the views of the ancients whose names are listed by Frenkel and Johnson, then again suppression is not the correct word. One can scarcely suppress something that had been lost. It is not clear anyway what useful purpose is served by tracing the origins of the MAB back through two or three centuries. If the theory is correct, its origins are unimportant, if it is not correct they are irrelevant.

It would hardly be surprising if the combination of the Keynesian Revolution, the events of the 1930s and the long period of wartime and post-war controlled economies resulted in some disruption of accepted ideas on balance of payments adjustment. There are long lags in the adjustment of theoretical models to the problems that they have to explain. In the 1920s macroeconomic theorists like Keynes and Robertson, whilst well aware of the problems of unemployment and business fluctuations preferred to work in terms of models which explained the general price level rather than the level of national output. In the 1950s macro theorists were obsessed with less than full employment models, which gave full scope to the new-fangled multiplier process, in a world where deviations from full employment were negligible. It may be that the role of monetary forces in balance of payments adjustment was neglected in the euphoria of post-war Keynesianism. If wisdom was despised it was not necessarily the direct wisdom of Hume, Ricardo, Mill, etc. Here is Nurkse writing on the MAB in 1944 (p. 100):

"We have already noted that under the gold standard or indeed any system of stable exchange rates, it is the balance of payments which ultimately determines the stock of domestic money in each of the countries adhering to the system. It is important to realise, however, that the balance of payments tends to affect not only the stock of money, but also the flow

of income and hence expenditure. The changes induced by the balance of payments in the flow of income and outlay affect, in turn, the demand for imported as well as home-produced goods and so react on the balance in an equilibrating manner. Such changes in income and outlay may occur even if, by offsetting operations, the quantity of money is held constant; in which case they are of course associated with corresponding changes in the turnover rate of the existing money supply."

In that same study Nurkse highlighted the role of sterilisation of gold flows in the 1920s and that of the exchange stabilisation funds in the 1930s. The 1950s saw the slow development of the IMF as an operating system as distinct from a facade, a system somewhat erroneously described by Keynes as the "exact opposite" of the gold standard [1948, p. 376]. In that decade with countries still struggling to adjust to post-war realities, with trade and payments and capital movements subject to a vast and throttling network of controls and with governments obsessed with the new goal of full employment and determined to use fiscal and monetary policies to that end, the idea of money stocks as endogenous variables in the International payments systems would have seemed rather silly. The whole ethos of the period was the attempt to insulate domestic events from external forces. In the 1960s, with a much freer trade and payments system it was natural that role of money should be re-emphasized.

The Frenkel-Johnson Essay traces the "modern revival" of the MAB in an "important but indirect sense" to Meade's famous work of 1951. In fact the concepts of internal and external balance which Meade developed had been anticipated by Nurkse in 1948 (pp. 272,-276-7). One might have supposed that Meade, as interpreted and developed by Johnson and others, represented the "orthodox" approach to balance of payments adjustment in the post-war period. Frenkel and Johnson see Meade's analysis as a take-off point for the development of the MAB by Mundell, Johnson and other members of the Chicago School. It is true that they recognise contributions from a range of distinguished names such as Prais, Harberger, Hahn, Pearce, Kemp, McKinnon etc., but the impression is created that some of these contributions had relatively little impact on mainstream thinking. This may well be true-how does one decide the state of mainstream thought on balance of payments problems? Surely Johnson and Mundell were read widely and with respect throughout the 1960s? There are plenty of references in leading texts to suggest that this was the case. Or was there a stable orthodox theory that rejected their work? If so, where is it to be found? I find the whole thing rather mysterious and would prefer to interpret the MAB theory as a development and completion of orthodox theory rather than

something in opposition to it. Such a view might make the theory less controversial and more acceptable.

I propose therefore to set out what seem to be the main principles of the MAB theory, as expounded by Harry Johnson, and to try to put them into critical perspective. In general the result is sympathetic to the theory, though not necessarily to every particular statement associated with it. It should be emphasized that what follows is a purely personal view. No attempt is made to give a synthetic account of critical discussions of the theory such as those in the excellent review of the Frenkel-Johnson volume by Frank Hahn (1977).

### ESSENTIAL FEATURES OF THE MONETARY APPROACH

The essential features of the MAB as expounded by Johnson seem to be as follows:

- (i) The theory concerns the balance of payments as a whole and looks at the "official settlements" balance rather than the balance of trade, the current account or the basic balance. The official settlements balance is essentially the counterpart of an aggregate of real and financial flows and only the monetary value is important. In the simplest case it would represent an inflow or outflow of reserves (1976, p. 262, Frenkel and Johnson (F-J), 1976, pp. 21-2).
- (ii) Monetary inflows and outflows associated with the official settlements balance cannot be sterilised in the longer run. Therefore the balance of payments position must affect domestic money supplies with consequential implications for the balance of payments (1972, pp. 152-3, 1977a, p. 227).
- (iii) The demand for money is a stock not a flow relation. Variations in the supply of money relative to the demand for it which are associated with balance of payments surpluses and deficits must work towards a stock equilibrium and the process will yield a balance of payments equilibrium (1972, p. 153).
- (iv) "... the balance of payments is a monetary phenomenon, representing a disequilibrium in the market for money. Such disequilibria carry with them their own corrective mechanisms summarisable in the theory of real balance effects ..... " So balance of payments policies should be analysed "in terms of their impacts on money flows within this self-corrective frame work" (1976, p. 262).

- (v) Much of the theory is concerned with longer run problems so that it is appropriate to assume wage-price flexibility and equalisation of prices of traded goods in all countries subject to the usual qualifications about tariffs, transport costs, etc. (1972, pp. 153-5).
- (vi) Exchange rate changes are only a substitute for domestic credit expansion or contraction and operate on the balance of payments through real balance effects. Any relative price effects that result from exchange rate changes are transitory (1976, p. 275, 1977a, p. 227, 1977b, p. 260).
- (vii) There is a stable demand for money that is a function of a relatively small number of macroeconomic variables, whilst the supply of money, or more accurately; the domestic credit component "is determined independently of demand and is subject to policy control" (1977a, p. 225, F-J, 1976 p. 24).

These seven propositions derive essentially from an approach to balance of payments problems in the context of a fixed exchange rate system but may be applied with suitable modification to a flexible rate regime. The equilibrium exchange rate will be that which is consistent with stock equilibrium in the money market when official intervention in the market is zero. Changes in the demand for or supply of money will lead *ceteris paribus* to changes in the exchange rate, if official intervention is to be avoided. In practice the distinction between fixed and flexible exchange rates is a fine one. Rates are usually flexible within official intervention limits as in the pre-1971 IMF system. Under present flexible rates "all" that happens is that the monetary authorities are no longer tied to definite intervention limits and intervention levels are continuously adjustable in either direction at the discretion of the authorities. In the following discussion it will be convenient to begin in the context of a fixed rate system but the later part will apply indifferently to either type of regime. I begin with some criticisms of the basic propositions of the MAB as set out above.

### WHICH BALANCE OF PAYMENTS?

My first criticism of the MAB concerns proposition (i) that the proper subject of theory is overall balance. In view of the emphasis of the MAB on longer run situations and problems this concern with official settlements is rather curious. No-one with the slightest knowledge of the history of the international monetary system in the twentieth century would wish to deny the importance of short-term capital flows for monetary authorities concerned to manage

the balance of payments or the exchange rate. But in longer-run analysis, particularly with the sort of assumptions favoured by the MAB school such as full employment, common prices and interest rates it is difficult to see these short-term movements as anything but superficial elements in the system. Taking a simple classification of balance of payments items into *current account*, *long-term capital*, *short-term capital*, *balancing item* and *official financing*, which collectively and *ex post* must sum to zero, the third and fourth of these categories should vanish in the longer run. The *balancing item* (or errors and omissions) is simply a reflection of ignorance and is, in principle, a blend of items that belong to the first three categories. In the longer-run short-term capital flows either balance out to zero or become recognised and redefined as long-term items. In the longer-run official settlements would be necessary only to take account of necessary trend accumulation of reserves in a growing world economy. The relevant long-run balance of payments concept would become the *basic balance* and the long-run equilibrium exchange rate (or trend rate) would be that which gave a zero basic balance.

Again if we are to think in long-run terms and in the context of wage-price flexibility and full employment the appropriate background macro model would be some sort of "classical" model in which desired national expenditure was equal to total national income. In this model long-term capital flows would represent effectively the acquisition of real assets and would be difficult to distinguish, in principle, and for balance of payments reasons, from trade and service flows. In simple models it ought to be possible aggregate demand for imported goods, services and securities into demand for some composite good, with the same procedure for exports. A decision to invest abroad, out of income, would necessarily imply some foregone expenditure on goods and services, whether these be exportables or importables.<sup>1</sup> The proper balance of payments target would be a zero basic (or pseudo-current) account balance. Alternatively the long-term capital flows might be thought of in terms of the classical transfer analysis. Any desired level of net transfer to or from the rest of the world would need to be matched by a current account surplus or deficit. Following Johnson, if the marginal propensities to spend out of the transfer do not sum to unity following a change in the level of transfer, then some adjustment of the exchange rate would be necessary to just effect the transfer change. The current account balance would become the proper target of balance of payments policy. With flexible wages and prices changes in the exchange rate are unnecessary, though some redistribution of money stocks would be necessary.

<sup>1</sup> Assuming, in the context of this model, that the market for non-traded goods and services is cleared by an appropriate relative price change.

I said earlier that short-term movements disappear in the long-run analysis. This does not mean that they cease to exist as practical problems. Monetary authorities are condemned to live in an eternity of short-periods. But this does not justify the analysis of short-run problems in terms of the full MAB theory. The MAB school acknowledge that sterilisation of the monetary effects of balance of payments flows is possible in the short-run, so short-run theory had better be organized on that basis. Different models are needed for different problems. There is much to be said for the view that it is the short-run problems that are really interesting. The long-run analysis of the MAB school can seem rather sterile as an exercise in balance of payments theory. Harry's long-run model in his 1972 paper, with its apparently startling comparisons with "various Keynesian theories about the relation between economic growth and the balance of payments" (p. 158), is an example.

The idea that reserve growth should increase with the growth rate of output is surprising, but reflection quickly demonstrates that the surprise is unnecessary. Once the idea of exogenous growth of output at constant interest rates and prices is accepted the whole outcome is predetermined. The money stock must grow at some definite rate because it has been defined to do so by the demand for money equation and the assumption of zero excess demand. Given the growth rate of money it has to be some combination of domestic credit expansion or reserve accumulation since there is no other possibility in the model. The real problem is how the assumed growth of output would be achieved in the first place. Harry defends his models with the argument that: "it may be very misleading to rely on the Keynesian model as a guide to policy-making over a succession of short periods within each of which the Keynesian model may appear to be a reasonable approximation to reality" (1972, p. 166). One wonders what guidance the theory provides on the method of escaping the short period constraints. Would it have been helpful to the U.K. authorities in the 1920s? Is it helpful in the 1970s?

The idea that the overall balance is the important concept for adjustment theory seems to imply that a basic deficit offset by a short-term capital inflow would be acceptable situation. Official settlements would be zero and is consistent with equilibrium. I wonder how many exchange authorities would be prepared to accept this proposition? The history of international monetary system is largely the history of crises generated, or aggravated, by short-term capital flows. Used with discretion the power to manipulate short-term flows through interest rate policy or forward market intervention is a useful instrument of official policy. But policy-induced short-term flows which are an alternative to official settlements should surely be recog-

nised as a sign of disequilibrium in the balance of payments, since by their nature such flows cannot be regarded as other than temporary. Once this is recognised the diagnosis of disequilibrium becomes more complicated as various kinds of short-term flows need to be identified, and their magnitudes assessed, and the fuzzy distinction between short-term and long-term capital flows becomes an important practical issue. The identification of disequilibrium becomes a matter of judgement rather than of the application of a simple criterion. This is not to deny that monetary disequilibrium may underlie any actual or potential overall deficit but merely to point out that such monetary disequilibrium will not necessarily reveal itself in any simple way.

### THE TRANSIENCE FACTOR

An implication of propositions (iii) and (iv) is that a continuous flow situation with  $B \neq 0$  where  $B$  is the official settlements balance is impossible, since the associated and non-sterilised monetary transfers will alter supply and demand conditions in such a way as to remove the net monetary flow. This point is stressed by Harry Johnson in a number of places. Thus: "Balance of payments disequilibria must inevitably be transitory" (1977a, p. 227). The impression is created that other analysts, especially those favouring the "elasticity approach" were disposed to assume perpetual states of  $B \neq 0$  and to ignore monetary repercussions (1977b, p. 255). It is hard to take this seriously; one wonders how the argument would be disproved—would anyone who didn't argue this way be classed automatically as a monetarist?

It is perfectly true that numerous expositions of the "elasticity approach" to devaluation, in textbooks, and presumably in classrooms, have begun with  $B = 0$  and have shown that devaluation would lead to  $B > 0$ . The real criticism of these models is that they show nothing more than that the balance of payments will improve if it improves, i. e. if the appropriate elasticity condition is satisfied. I pass over this point since the objection to it is obvious. I suspect that most practitioners of the art were well that the correct approach was to assume a deficit to begin with and to allow the devaluation to eliminate the deficit. Done this way the algebra is a little harder and there are other minor complications best avoided in elementary discussions. Those practitioners, including myself, who were concerned with real world devaluation problems were only too well aware that the forces which produced the initial problem requiring devaluation would be likely to erode and surplus produced. Also that the primary aim of devaluation was to restore a situation where the basic balance was zero, or some trend level in a growing world economy possibly allowing for some recovery of international reserves lost in the previous crisis as a result of the sterilisation operations of the authorities.

Another objection to the transience argument is based on judgement of how the



world works and how monetary authorities react, given that sterilisation is possible in the short period. It is sometimes said that sterilisation is a self-defeating policy because it will result in interest rate changes that regenerate or intensify the initial problem. In the case of a deficit on current account an attempt to prevent the reduction in the money supply by returning the excess supply of home currency into circulation through, say, open market purchases will drive interest rates down and generate a short-term capital outflow. But this involves a partial view of the macro-economic situation. If the authorities are pursuing a policy of employment stabilisation then sterilisation is essential in the face of a current account deficit, since the counterpart of that deficit is an excess of government and investment spending over savings plus taxes. If sterilisation is not pursued then interest rates must rise to pull in short-term capital, subject to the usual qualifications about events in the forward market. It is easy to set up conditions in which sterilisation can proceed without any difference between home and foreign interest rates leading to arbitrage capital movements. This was demonstrated by Mundell (1968, Chapter 15) who called it the "disequilibrium system". The real problem with this situation is that it implies continuous depletion or acquisition of foreign exchange reserves or the equivalent in official borrowing or lending. The conclusion is not altered in any fundamental way if a deficit or surplus on basic balance is substituted for the deficit or surplus on current account, since any basic deficit or surplus must have a counterpart excess demand or supply of loanable funds internally which can be accommodated by recycling the net home currency flow to or from the foreign exchange market.<sup>2</sup> Whether this sort of situation is transitory or not depends on the definition of transitory and the relationship between the country concerned and its associates in the international monetary system. We know that certain countries have been notorious for prolonged periods of "excessive" reserve accumulation. Others have managed to run prolonged overall deficits. The U.K. did pretty well out of a transitory situation between 1960 and 1967 because the other industrial nations wished to postpone the inevitable devaluation of sterling. A cumulative overall balance of payments deficit of some £ 2,500m did not preclude domestic credit expansion of some £ 7,100m and an increase in the money supply of £ 4,600m. The proportionate increase in the money supply almost matched the proportionate increase in GNP at market prices. Many under-developed countries seem to manage a semi-permanent transient situation through various measures including "rescheduling" of debt repayments and continuous amendments to the lending procedures of the IMF. So when I read Harry on transient effects, I'm reminded of Viner's definition of the "post-war transitional period".

<sup>2</sup> The necessary requirement is that the capital flows represent a disposition of current incomes and do not result from dishoarding or new monetary creation.

Not that I seek to deny the formal logic of the MAB analysis. It is just that I see the history of the international monetary system in the last five or six decades as a history of successive transitory situations with the pattern of exchange rates adjusting discontinuously through time to keep the whole system tottering along from crisis to crisis.

## THE UNIMPORTANCE OF ELASTICITIES AND RELATIVE PRICE CHANGES

My third criticism of the MAB as set out by Harry Johnson in his later writings is his cavalier treatment of the role of elasticities in balance of payments adjustment. Thus:

"It should be emphasised that the analysis of the effects of a devaluation is completely independent of any critical-magnitude condition applying to the elasticities of international demand. The relevant stability condition is the monetary-theoretic one that a reduction in real balances produces a reduction in real expenditure from a given real income, and vice versa." (1976, p. 275).

"[The elasticities approach] is hopelessly defective as an approach to devaluation." (1977b, p. 254).

"The monetary approach rejects this emphasis given to the role of relative prices in the analysis of devaluation." (F-J, 1976, p. 42).

These are strong words and one cannot avoid the conclusion that Harry sets up straw men (or women) when he discusses the elasticity approach, choosing to focus on primitive models whose deficiencies were well recognised and corrected in the 1950s, not least by Harry himself, with his fruitful concepts of expenditure-changing and expenditure-switching policies. Thus his second objection to the "elasticities approach" is that "income is implicitly held constant; [it] therefore ignores a fundamental point of Keynesian theory, the income-expenditure-income circuit, and the interdependency of income and expenditure" (1977b, p. 254). This is a rather odd comment in view of the extensive post-war literature dealing with combined price and income analyses of devaluation which followed Meade's influential book (1951) and Alexander's propagation of the "absorption theory" (1952). It is true that Harry differentiates between the "elasticity approach" and what he calls the "economic policy" approach attributed to Tinbergen and Meade (1977b, p. 257, 1977a, p. 223). Yet this is essentially a synthesis of elasticity and absorption theories which is capable of analysing devaluation in various situations of full and less than full employment. If there is an orthodox approach to devaluation to be contrasted

with the monetary theory it is surely this one; there must have been precious few souls around by the late '60s who believed that devaluation could be handled by price changes in isolation. Harry concedes that the "economic policy" approach was a substantial improvement on previous thinking (1977b, p. 257), but suggests that it shares two errors of previous approaches, first of not recognising the "transience factor" and secondly, "by identifying demands for additional money with a demand for accretions of international reserves, it disregards the role of domestic monetary policy in determining both whether a devaluation is "necessary" to correct a balance-of-payments deficit, and whether it will be successful in so doing" (p. 259). There may be some cogency in his first point—let each plead his own case—but Harry makes the important concession (1977a, p. 225) that the objection does not apply to those who argued that devaluation was necessary to convert a disequilibrium situation into one with a final overall balance of zero. It is true that the final state of "exact balance" cannot hold as long as there is any residual excess demand or supply in the money market. I would guess that most practitioners of the "exact balance" approach would not have denied this, rather they took it for granted as a purely technical matter for the monetary authorities.

The second point against the "economic policy" approach is somewhat cryptic. I take it to mean that, if the demand functions are homogeneous of order zero in the nominal prices and nominal money stock, then it makes no difference whether we have an  $x\%$  price rise with a constant money stock or an  $x\%$  fall in the money stock for constant prices. So "Devaluation is only a substitute for domestic credit contraction" (1977a, p. 227). To the monetarist any deficit must be associated with, if not caused by, an excess supply of money so the deficit may be removed by chopping the money supply. Devaluation is therefore not "necessary" If factor prices are fully flexible this is a legitimate viewpoint.<sup>3</sup> But in the real world factor prices are not fully flexible except in some remote long period and the technical task of reducing real balances through devaluation rather than through a reduction in nominal money stocks must be incomparably simpler. The typical necessary devaluation in the post-war period has been one where prices of non-traded goods and costs of production of traded goods have risen relative to inter-

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3 Strictly it is legitimate if the only assets in the system are money and real capital or if special and peculiar assumptions are made about government bonds, e. g., that the asset value of the bonds is totally offset by the capitalised value of the tax payments due to service the interest payments on them. In spite of their professed concern with the total balance of payments the MAB school do not appear to have produced any reasonably simple discussion of this problem.

national prices and costs and the whole point of devaluation was to restore price and cost ratios to some equilibrium pattern. The alternative policy of domestic deflation was just not on. The need to choose devaluation in such cases is conceded by Harry (1977b, p. 265) as if it were a special case. In an imperfect world it is the general case and the MAB idea of flexible prices is the special case. I would guess that this conclusion carries over to continuous inflation models. It is true that relative declines in wage and price levels are consistent with continued absolute increases if the rest of the world is inflating. But if, as seems likely, the original problem arose from substantial relative inflation in the home country the necessary retardation of nominal growth rates may not be so easy to secure.

To return to the role of elasticities and the question whether critical magnitude conditions have any relevance, it seems necessary to make a distinction between the "elasticity approach" viewed as a cock-shy and the role of elasticity conditions in adjustment theory. The second problem is dealt with in detail in a supplement to this paper.<sup>4</sup> For the present it is only necessary to state some conclusions. The first is that the size and direction of a real balance change that follows from a given proportionate change in the exchange rate is essentially determined by the pattern of demand elasticities; critical magnitude elasticity conditions do exist. It cannot be assumed without question that a devaluation or depreciation must reduce real balances—they may increase under certain conditions. Secondly, relative price changes whether between non-traded goods, or within the traded goods sector, are an essential part of the adjustment mechanism when equilibrium is disturbed by changes in tastes and/or production conditions and the size of these price changes depends essentially on elasticity values. It is true that exactly the same can be said of changes in nominal money stocks where these are used to restore equilibrium in flexible price models. The stability conditions may be "monetary-theoretic" but it may be argued that elasticity values are an essential ingredient of the monetary-theoretic process and therefore of the monetary approach to the balance of payments.

## CAUSES OF DISEQUILIBRIUM

Are all balance of payments disequilibria caused by monetary disequilibrium? This might appear to be the message of proposition (iv) cited above. It would be quite wrong to construct the argument in this way. Thus in Frenkel-Johnson we are told that :

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<sup>4</sup> To be published in a later issue of this Journal. This sets out a more rigorous justification of propositions made in the present paper in the context of a monetary model where production levels are fixed. In a wider model supply elasticities would be relevant also.

“The monetary approach to the balance of payments asserts neither that monetary mismanagement is the only cause, nor that monetary policy change is the only possible cure, for balance of payments problems.....” (1976, p. 24).

In his earlier study Harry Johnson had made the point even more forcefully :

“To conclude that balance of payments problems are essentially monetary is not, of course, to assert that they are attributable to monetary mismanagement—they may be, or they may be the result of ‘real’ forces in the face of which the monetary authorities play a passive role.” (1858, p. 51).

This neutrality of the theory on the causation of disequilibrium is important and might easily be overlooked as a result of some incautious statements in the literature, which appear to reflect a less neutral view, possibly because of an implicit judgement monetary disorders dominate real disturbances as a source of actual balance of payments disequilibria. The emphasis on the “new” theory could also carry with it the implication that disequilibrium should be analysed in terms of “new” concepts whereas it may be preferable to analyse them in more familiar terms provided one does not overlook the monetary implications.

Take first a simple IS/LM model extended to include international trade transactions with a fixed exchange rate but with zero capital mobility. Beginning with internal and external equilibrium at less than full employment an increase in the desire to invest or an increase in government spending will push out the IS schedule and create a deficit on the current account of the balance of payments. With an endogenous money supply the deficit is transitory since the LM schedule must shift inwards until the deficit is eliminated. But how is the deficit to be explained? According to the MAB the deficit should reflect an excess supply of money. The initial shift of the investment schedule might be described, following Keynes, as an increase in the “finance demand” for money which might be expected according to MAB theory to lead to a balance of payments surplus.<sup>5</sup> A further tease is provided by the fact that short-run equilibrium involves the intersection of the IS and LM schedules and the LM schedule is supposed to be the locus of points in interest rate/income space that equate the demand for and the supply of money. Then why the deficit? as Tsiang points out, the entrepreneurs demand money in the first place in order to spend it. So have they an excess demand for money or an excess supply? One thing is perfectly clear, however one looks at the situation there is a state where total absorption exceeds total

<sup>5</sup> This point is made by Tsiang (1977, p. 331). The point is discussed further in the supplement to this paper.

income, and if absorption exceeds income the additional expenditure must involve a decumulation of money balances. Somewhere there is an excess demand for foreign exchange which is being matched by an excess supply as the monetary authorities seek to maintain the fixed exchange rate. If the authorities allow their excess supply of foreign exchange to reduce the domestic money supply we get the transitory sequence. If the monetary effects are sterilised we can hold the level of income until reserves and/or borrowing facilities run out. Doubtless there are experts who will tell me how all this can be explained simply in terms of Walras' Law. I prefer the more commonsense explanation of events. Evidently monetary equilibrium is not simply a matter of equality of stock demand and supply at a point in time, but also of the time-rate at which stock demand and supply are changing, we are back in the world of flows.

Take now the case of a spontaneous disturbance caused by a change in tastes. Suppose first that we have a model economy closed to international trade. Two goods X and Y are produced with outputs related by a production frontier of normal shape and some system of indifference curves, again of normal shape, to reflect demand conditions. This is a quantity theory world where money is used as a unit of account and medium of exchange and where the required money stock is equal to the value of output for some arbitrary time period. All income is spent and wages and prices are flexible so that the production point must be located on the frontier. In the initial equilibrium consumption of each good is equal to quantity produced, relative prices are determined by the appropriate tangency condition, whilst absolute prices reflect the ratio of the money stock to output. Suppose now a change of tastes in favour of good X so that a new equilibrium is possible only if there is an increase in the relative price of X. Real income must fall when measured in terms of the X good and if the nominal price of X is unchanged, and if the change in production does not alter the payments system, then national income in nominal units must fall, so that part of the money stock becomes redundant. If both prices are now allowed to adjust to eliminate the redundant money then nominal incomes and prices will rise in the same proportion at the new terms of trade. Exactly the same conclusions would follow for a switch of tastes to the Y good with its price held constant initially. If the price of X is always held fixed then part of the money stock becomes redundant for a switch of tastes to X, whilst the money stock is deficient if there is a switch to the Y good. Any excess supply or demand for money is simply the technical consequence of the assumed shape of the production frontier; it is a consequence of the change in tastes and not a cause. Consuming units would not see themselves as having any excess supply of or demand for money in the impact situation after the change in tastes, they would see themselves wishing to change the composition of their

expenditures at fixed nominal prices within their budget constraint. With a linear production frontier there would be no problem of redundant or excessive money stock and production levels would adjust passively at unchanged nominal prices. So the basic cause of any redundant money must lie in the assumed shape of the production frontier.

Now suppose that the simple model represents an open economy where X is the traded (composite) good and Y the non-traded (composite) good. A change in tastes towards X with the price of X fixed will once again result in redundant money stocks. To the MAB school the redundant money is an excess supply of money with a counterpart excess demand for traded goods. With a fixed exchange rate there is a redistribution of world money stocks with some increase in world prices in the general case, or, under a flexible rate regime, there is a simultaneous increase in the price level of the home country combined with a depreciation of its exchange rate. If X happens to be the non-traded good the change in tastes may lead to a trade surplus or an appreciation. Whatever happens the excess or deficient money stock is again a technical implication of the assumed shape of the production frontier and complications enter only if one or other of the prices or the exchange rate is fixed by the imposition of some policy constant. Any disturbance to the balance of payments may be described in terms of disequilibrium in the market for money, though this is a symptom rather than a cause. The essential or necessary condition for the restoration of equilibrium is a change in relative prices, the size of which depends on elasticities of supply and demand. The money stock may rise, fall or remain constant according to policy taste.<sup>6</sup>

Nothing in the above is intended to dispute the point that there is a monetary disequilibrium implicit in the change in tastes. But "orthodox" theory would have no difficulty in prescribing a policy to deal with such a change, viz, devaluation. The emphasis in the MAB literature on the transitory effects of devaluation may well cloud the essential issue, which is that no policy will succeed unless it produces the necessary change in relative prices.

### CONCESSIONS

In spite of the Frenkel-Johnson complaint of "suppression" the MAB has always been implicit in orthodox international economics. Consider first the concept of the exchange

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<sup>6</sup> Notice that if the monetary authority were prepared to hold stocks of traded and non-traded goods and to alter these passively in response to private excess demands or supplies there would be no balance of payment problem in the short-run, nor any excess demand or supply for money.

rate, which is patently a monetary magnitude by virtue of its dimensional role as the ratio of two national currency units. For decades now we have instructed students in certain general equilibrium models of trade, and no-one played a greater part than Harry Johnson in maximising the complexity of these models. Whether we work with pseudo-Ricardian or Heckscher-Ohlin models we usually arrive at the conclusion that, neglecting transport costs, etc., the equilibrium price ratio of the traded goods must be identical in the two countries. Some of us even astound students by referring to more than two goods or countries. It is never necessary in these exercises to dwell at length on the nominal prices of the traded goods, yet clearly some quantity theory of money is always lurking in the background. If the home currency prices of exportables and importables ( $P_x$  and  $P_m$ ) are equal to the foreign currency prices ( $P_x^*$ ,  $P_m^*$ ) multiplied by the exchange rate and the two price ratios are locked into some relationship in equilibrium it is pretty obvious that doubling both nominal prices in one country is going to halve the exchange rate if foreign prices are fixed, etc., etc. The exchange rate is implicitly defined as a relationship between the purchasing powers of the two national currencies. Whether this results from a simple quantity theory or some more complex version of the same thing is not important; the role of money is tacitly accepted.<sup>7</sup>

Then again it is clear from the simple traded goods model of a small country that money disturbances must be of great importance for the balance of payments. If capital account problems are neglected, such a country cannot have a balance of payments deficit or surplus as long as total expenditure on goods is equal to total income generated in production. A devaluation will raise both expenditure and income in the same proportion and a change in the level of absorption relative to that of income can only result from fiscal intervention or from a real balance effect. Changes in tastes or production may have implication for the volume of trade flows, as is indicated by conventional offer curve analysis, but they cannot unbalance the balance of payments as long as the budget constraint holds.

In the small country non-traded goods model and in the large country models generally, changes in tastes or production conditions will disturb equilibrium in the current account because such changes will generate monetary disequilibrium. In all models monetary distur-

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<sup>7</sup> Similar points could be made about proposition (v) above, that the prices of traded goods are equalised in all countries. This 'law of one price' is often regarded as fundamental to the MAB. Yet the same 'law' is a basic feature of accepted 'real' international trade theory and is a common feature of most mathematical treatments of adjustment theory.



balances, whether from the side of demand or of supply, will generate disequilibrium because they imply a breakdown of the budget constraint and lead to a state where absorption is not equal to income. But this is only to say that absorption theory is a fundamental part of the MAB though the concept and its application are more general than in the original Alexander article.

If one disaggregates both absorption and income into components relating to consumption and production of traded and non-traded goods and services, and if one recognises that production and consumption of non-traded goods must be equal since national income accounting practice defines stock changes as part of absorption, then the basic proposition of absorption theory, that income less absorption equals the balance of payments, reduces to the statement that production less consumption of traded goods and services is equal to the production less consumption of traded goods and services, since the current account must represent an excess demand or supply in the market for traded goods and services. Production and consumption of non-traded goods and services wash out of national income equation when income and absorption are differenced.

If now we add to national income the sum of private capital inflows, and add to absorption the sum of private capital outflows, and add and subtract the same flow variables to the current account, we have the statement that Total Absorption power less Total Absorption of goods, services and foreign securities equals the official settlements balance. Defined in this way any excess of gross absorption over gross absorptive power must represent a loss of official reserves (net of official borrowing) and must represent a flow of domestic money into the foreign exchange authority. It must also represent dishoarding and/or net domestic monetary creation.

What I have done is to paraphrase Harry's 1958 model except that he expressed it in terms of flows of payments and receipts. More recent formulations of the MAB take the argument a stage further by relating the excess of gross absorption to the excess supply of money and by developing the transitory adjustment process as an explicit consequence of the existence of a demand for money function.

It is instructive to look at Harry's criticisms of the "absorption approach" as set out in two later papers (1977a, 1977b). These are:—

- (i) It confuses the *trade* balance with the *total* balance. Actually Alexander referred to the current account balance and deliberately abstracted from capital flows in the interest of simplicity. But Harry's 1958 paper extended the argument to capital flows.

- (ii) It assumes that any improvement in the balance of payments from devaluation will be non-transitory. But Alexander recognised explicitly that many of what he called "direct absorption effects" might be transitory (1952, p. 274).
- (iii) It treats devaluation as a single policy. This is valid point though one might argue that, with flexible wages and prices, the MAB treats devaluation as a single (monetary) policy.
- (iv) It fails to elucidate the monetary policy role of devaluation under non-Keynesian conditions. But Alexander refers to the possibility that the cash balance effect may be removed by any domestic credit creation that comes in response to devaluation (1952, p. 274). Although his references to the point are brief, there is a clear recognition of the central MAB proposition that domestic credit expansion and balance of payments surpluses are alternative ways of satisfying any excess demand for cash balances. The argument was underlined by Machlup (1955, pp. 273-5) in terms that permit no misunderstanding and the monetary implications of the "general absorption" approach were clearly set out in Harry's 1958 paper (pp. 49-51) together with the general inference that balance of payments problems were essentially a monetary phenomenon, implying dishoarding by residents and/ or credit creation by the authorities. The theoretical linkage between devaluation, the real balance effect and monetary policy was set out in 1960 in a brief but perceptive Note by Michaely.

I hope that these remarks make it clear that I am not seeking to argue that the MAB theory is wrong. Nor do I seek to devalue the skill and imagination involved in generalising earlier intuitions into a fully articulated theory. I wish only to call attention to the clear line of development from the Alexander of 1952 to the Johnson of 1958 and the Johnson of the 1970s, and to emphasize that the MAB is at worst a clarification and completion of absorption theory. At best it is a simplification of balance of payments theory which can integrate various partial approaches in an elegant fashion. It expresses much that was implicit in earlier orthodox thinking and our understanding of problems should be greater as a result of the explicit emphasis that the theory gives to the role of the demand for money in expenditure functions and the longer-run endogeneity of money stocks in certain models. In a world where money plays a fundamental role as medium of exchange, a unit of account and store of value and where national currencies are linked together through a network of exchange rates, it would be literally astonishing if monetary factors did not enter crucially into a general equilibrium theory of balance of payments.

adjustment and policy. In a full equilibrium every unit of money in existence must be held willingly, but the same may be said of every asset and *mutatis mutandis* of every flow of goods and services. If the MAB purports to be something different from absorption theory or elasticity theory then it *is* wrong. But I do not believe that this proposition would be argued seriously by anyone. My view is that absorption theory, elasticity theory and monetary theory integrate to give a general theory of the balance of payments. Support for this view may be drawn from Mundell (1968, p. 150) and Dornbusch (1975a, p. 286, 1975b), two leading figures in the MAB school.<sup>8</sup> It is also, I believe, the clear message of Harry's 1958 paper, which recognised the integration of elasticity and absorption theory and went on to generalise the latter. This makes it rather puzzling that he should seem to emphasize the product differentiation in his later work.

Any conclusion regarding the theory of adjustment must carry over to questions of payments policy. As Frenkel and Johnson put it:

“The basic claim that is made by the proponents of the monetary approach is that the balance of payments effects of any policy measure cannot be properly analysed without specifying the monetary consequences of the policy itself.” (1976, p. 42).

This is surely a valid statement which is simply the common-sense recognition of the existence of money as an essential element in a general equilibrium system. To deny it would be as silly as to deny the existence of gravity. It would equally capture the essence of the theory if the word “disturbance” were substituted for “policy measure”. This concession does not carry with it the obligation to analyse every disturbance, or policy act, in terms of a simple world of perfect competition and quantity theory relationships though such analysis might serve as a useful first approximation. Some of the policy propositions of the MAB school are open to the charge of over-simplification. Take for example the case of the imposition of a tariff. According to Frenkel and Johnson, the imposition of a tariff “will improve the balance of payments only, if it induces an excess demand for money” (1976, p. 42). They refer to this “simple condition” as being different from the typical textbook analysis with its concern for relative prices. Now Mussa (1976), on which the argument appears to be based, admits that it is possible for the tariff to reduce the demand for money whilst Hahn has mentioned some of the complexities that arise when a tariff is imposed (1977, p. 245). The “simple condition” is in fact very far from simple.

<sup>8</sup> See also G. W. McKenzie (1977) for a discussion of the role of elasticities and absorption in an explicit monetary model of devaluation.

unless we accept the simplistic view that anything that raises one price must raise the general level of prices. We don't know *a priori* which way the real balance effect will go and, in any case, the search for an answer would probably be pointless unless we were concerned with a general, across the board, tariff change of significant size. It is probably futile to argue about the precise concern of the "typical text-book" analysis and whether such analyses emphasize relative price effects or effects on the excess demand for money. My own impression is that the typical text does not regard the effects of the tariff on the balance of payments as a centrally important issue. The general equilibrium analysis of tariffs implicitly accepts a monetary theory of the equilibrium exchange rate and, by implication, regards the monetary effects of tariff changes as a secondary, unimportant and technical matter. A proper structural analysis of a tariff change in a fully employed economy would postulate a simultaneous exchange rate change to remove any balance of payments effects. The MAB theory warns us, quite correctly, that this might also require some change in the money stock, a point of importance to the analyst conditioned to regard such a matter as a purely technical problem for the monetary authorities. From time to time tariff increases (or the equivalent in terms of trade controls) are proposed as a means of expansion in a less than fully employed economy, but the usual argument is that the tariff is imposed as an alternative to devaluation to maintain equilibrium in the balance of payments in the presence of some fiscal/monetary induced expansion. Money market equilibrium is implicit in such proposals. One may concede the propriety of making it explicit without implying that masses of text-book material needs to be rewritten.

Similar points could be made about devaluation analysis. What matters for a successful devaluation is whether "general" absorption can be reduced relative to post-devaluation national income, and for how long. It seems to me a matter of taste whether one regards the limitation on spending that produces the results as being caused by desire to rebuild real balances or imposed by fiscal policy.<sup>9</sup> Real-balance effects have the merit that they are automatic, but

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<sup>9</sup> The reference to fiscal policy does not mean that real balance effects are by-passed. If fiscal policy is used to reduce disposable income the demand for real balances by consumers will be less than it would otherwise be, but their spending, and therefore absorption, will be constrained by the level of their incomes rather than by the desire to restore real balances. But the exchange authority will be gaining real (reserve) balance if the overall balance of payments is in surplus. If and when reserve balances prove excessive some easing of fiscal policy will enable private absorption to increase and so remove the balance of payments surplus. Any increase in real balances desired by consumers could, at this stage, be satisfied by domestic credit expansion. A full analysis would need to distinguish between the demands for real balances by producers and consumers.

the time-lags involved may be so great in practice that they cannot be relied on to do the job unaided. Certainly the policy makers will need to know whether they are hindering a natural process, or merely speeding it up, if their policy is to be successful and their policy will not be successful if it ignores the necessary conditions for the existence of monetary equilibrium. It may be that the best lesson of the MAB for policy makers is to teach them how not to get into this sort of situation in the first place.

## VALEDICTION

This concludes my general observations on the MAB. If some of my comments seem unduly critical rather than eulogistic, as would be fitting on this occasion, I can only express my regret and my wish that it could have been otherwise. A professional of Harry Johnson's calibre would, I am sure, have preferred sincere even if misguided, criticism to insincere praise. If my criticism is misguided I shall doubtless be taken to task, but, if this serves to make the issues clearer, a useful purpose will have been served. It may be that the later expositions of the MAB by Harry were too polemical in seeming to confront an orthodoxy that was not clearly identified. Perhaps he felt the need to punch home a message to those who are convinced that money does not matter. Still it is disturbing when a great economist appears to be contradicting generally accepted views which he himself had played a great part in making understood. Careful reading of the texts, and reflection on the argument, will show that, in most cases, the iconoclastic statements, have a rationale, though I doubt if the new language is invariably helpful. Thus one can see what Harry was getting at in his comments on the "elasticity approach" and critical magnitude conditions, whilst still believing that the emphasis was wrong. But the general effect of labouring to understand the MAB is wholly beneficial and I would like to end this piece by affirming, with gratitude, the massive intellectual debt that I owe to Harry Johnson.

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