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MONETARY FLEXIBILITY IN DEPENDENT ECONOMIES

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Monetary Flexibility in Dependent Economies¹

The present currency board system in East Africa will clearly give way, either by evolution or by more rapid change, to some form of central banking system. What form this system will take is an issue still in doubt. All sorts of variations on the themes of centralisation and decentralisation have been suggested and are possible. The final choice will be decided at least as much by political as by economic factors. In this paper I do not propose to comment directly on the form that central banking institutions should take. Instead I shall discuss a number of closely related issues which bear on the scope of central banking action in East Africa. I shall assume that the common currency will be maintained but this is not essential to any of my arguments which would apply, mutatis mutandis, to each territory separately should the decision be taken to break up the currency area. The questions that I shall consider are these:-

1. Credit creation and the fiduciary issue
2. Monetary flexibility and the fiduciary issue
3. Monetary flexibility and economic growth
4. Money supply and external reserves.

1. Credit Creation and the Fiduciary Issue

Walter Newlyn, reviewing the functions of a central bank gives as his first two "Currency issue" and "credit creation", and he indicates that, in the light of the territories' needs and the way these functions are performed at present, the time is ripe for a central bank in East Africa.² What does he mean by "credit creation"? At one point early in his article he appears to equate credit creation with the circulation of currency on a fiduciary basis.³ At other points, and notably in the mathematical appendix to his article, it is clear that he does not make this identification. But as it also appears in the wording of the reports of the East Africa Board⁴ it is worthwhile considering the relation between credit creation and the fiduciary issue.

¹An early version of this paper was presented at the Annual Conference of the East African Institute for Social Research, Makerere College, December 1964. In revising it I have benefited from the discussion at the Conference.

²"Monetary Systems and Intergration", The East African Economic Review, June 1964, p. 47.

³Ibid, p. 47. ⁴See, e.g. Report, 1963, p. 12.

The term 'credit creation' suggests a process of monetary expansion. The 'credit' normally referred to here is bank credit: it is created as the result of an increase in bank lending which, in turn, is usually considered as leading to an increase in the volume of net bank liabilities - whether bank-notes or deposits or both - outstanding. As banking liabilities notes and deposits, make up the money stock, the term 'credit creation' usually implies an increase in the supply of money. The first point I wish to examine is how far an increase in the fiduciary issue of East Africa, is likely to lead to an increase in the money supply under present conditions.

The East African Currency Board has the power to issue notes on a fiduciary basis either against securities of the East African governments or against crop finance paper (rediscounted by the banks). The present fiduciary limits are £35 millions against government securities and £10 millions for crop finance. At June 30, 1964, the composition of the domestic securities held by the Board was as follows:

Domestic Securities held by the E.A.C.B. 30th June, 1964.

	£ millions
Treasury bills	3.83
Crop finance advances	0.75
Short-dated (1-5 years)	1.12
Medium-dated (6-10 years)	2.17
Long-dated (over 10 years)	6.43
	<u>14.30</u>
Total assets (including external assets)	<u>75.88</u>

Source: Report of E.A.C.B., 1964. pp,42, 50,

I propose to exclude from consideration here increases in the fiduciary issue in response to such temporary needs as the seasonal requirements of government and crop finance, and to confine the analysis to the use of the fiduciary issue as a source of more permanent finance, in the interest of long-run development policy. The possible trains of events following an increase in the fiduciary issue will be illustrated in the following four examples.

(i) First, let us assume that the Currency Board agrees to make £10 millions of finance available to the East African governments, to finance part of their development plans. One way in which this operation might be carried out is for the Board to subscribe to new securities issued by the governments by the tender of sterling which the Board acquires by liquidating some of its external assets.

This might be done where the governments needed foreign exchange to cover their overseas disbursements in connection with the plan expenditures. Leaving aside, for the time being, the question of any concurrent domestic expenditures, what would be effects of this particular transaction? For the Currency Board it would amount to a straight substitution of internal for external securities. For the economy of East Africa there would have been a substitution of real assets for foreign exchange assets. The domestic monetary situation however would be exactly as it was before - except that part of the currency circulation which before was 'non-fiduciary' i.e. backed by external assets, would now be designated 'fiduciary, but the size of the money stock would be unchanged. To describe this particular expansion of the fiduciary issue as 'credit creation' is clearly misleading. 'Credit diversion' would be a more appropriate description: part of that fund of saving which is congealed in the monetary circulation has been withdrawn from one kind of externally - acquired asset, foreign exchange, and reinvested in another, imported equipment.

How realistic is this example? Would the governments in fact wish to take Currency Board finance in this form? The answer is that this is indeed not the typical way in which the Board provides such finance at present. But it is always open to the governments to draw on their share of fiduciary issue finance in this form⁵ and one East African government does do so. Furthermore, as the pace of development under the published plans accelerates, foreign exchange needs will grow and this kind of direct drawing on the foreign exchange assets of the Board will probably increase.

It is the case, however, that at present the typical method by which an East African government obtains finance, within its 'fiduciary quota', runs along lines which, formally at any rate, differ from this first example. The normal procedure is for the credit, in the Board's books, to the clearing account of the government's banking agent. At one time the sale was effected by a straight transfer of notes to the government concerned; but since the institution of clearing accounts, held by the commercial banks with the Board the initial step has taken the form of a credit. This introduces our second example.

⁵It is open to them to take any of their receipts from the Board in this form - e.g. their shares of the Board's operating surplus. Also, the gold or convertible currency elements in the subscriptions of the three countries to the I.M.F., the I.B.R.D. and other international institutions are being met by the Currency Board out of its surplus reserves: see Report of the E.A.C.B. 1963, p. 9.

(ii) Here we assume that, as before, the governments wish to raise £10 millions of finance from the Currency Board; but in this case the money is required for internal expenditure. The primary effect of the transaction is that the Board's assets increase by the domestic securities acquired, while its liabilities, in the form of deposits in clearing accounts, rise by an equal amount. The bankers to the various governments will credit clients' accounts with the acquired, and their own assets will rise by the increase in their clearing balances. Now the commercial banks of East Africa, while they maintain these clearing accounts with the Board, do not normally keep large balances in them.⁶ The probability is therefore that unless the money is spent very quickly, the banks will convert their balances with the Board into sterling which they will place, at interest, in London. The Board's sterling assets will therefore decline, *pari passu*, with their deposit liabilities.

The borrowing governments now proceed to spend the funds on domestic projects. This will cause an increase in money incomes and expenditures in East Africa and the currency needs of the public will increase. The commercial banks will have to meet this need by surrendering sterling to the Board in return for notes. But this sterling will, so to speak, 'come out of' the sterling assets acquired by the governments' bankers when the Board subscribed for the securities. (With the expenditure of the funds by the governments this sterling will have been spread among all the banks in the system as balances are transferred through the clearing). The result upto this point will be a rise in the currency circulation of the Board which, for the time being, we will assume equals the original transfer of finance to the governments.

But what of the further effects of the governments' spending? These will depend very much on the propensity of East Africans to buy imported goods; on the existence or otherwise of spare capacity in the economy; and on the propensity of the public to save.⁷ If this finance is extended and spent in a situation where the supply of domestic goods is completely inelastic then (ignoring effects both on domestic prices and on the supply of exports) the propensity to import will rise to unity and an amount of exports equal to the expenditures will be fairly promptly sucked in. These imports will

⁶ Between mid-1962 and mid-1964 total balances of all banks fluctuated between £0.5 millions and £3.5 millions: See Report of the E.A.C.B., 1964, p. 17.

⁷ I am looking at these propensities in aggregative terms only. The actual values of the propensities to import and to save may vary considerably according to the detailed distribution of the initial expenditures.

be paid for, in the final analysis, with the sterling which the East African commercial banks originally acquired as the result of the Currency Board's subscription for the domestic securities. At the same time there will be an accompanying reduction in the currency circulation as the public spends its increased holdings of currency on imported goods. The final outcome will be exactly as in the first example: there will be a substitution of real assets for foreign exchange assets with no increase in the money supply. Again, an example of 'credit diversion'.

(iii) For our third case let us assume that initially everything happens as in the last example, but that the supply of domestic goods and services is capable of expansion. In this example we will assume that no part of any increase in income is saved, but that part of income is spent on imported goods. In this situation expenditure of their acquired funds by the governments will lead to some increase in real output in East Africa. Just how far this will go will depend on the size of the propensity to import. If people normally spend a high proportion of their incomes on imported goods then the expansive effects of the governments' expenditures, on real output, will be heavily damped. If the propensity to import is low the effect on domestic output will be correspondingly greater. But low or high the fact that a proportion of expenditure out of income is on imports will cause a loss of foreign exchange and a concomitant drop in money supply. Furthermore, provided no new saving is being performed, the induced imports will in the end equal the initial governmental expenditures, foreign exchange assets will decrease by this amount, and the money supply will subside to its original level. The monetary outcome, in this case, is exactly as before: the currency circulation will be the same as it was at the outset, but a larger amount of it will be fiduciary. In real terms there will have been a substitution of real assets (the induced imports) for foreign exchange assets, but there will also have been something else. The expenditures by the governments will have induced some rise in domestic output, so that the total increase in the real assets available to the economy will have exceeded the decline in foreign exchange assets. In this case, while there has been no permanent increase in the money supply there has been a temporary 'creation of credit' which has produced an addition to real assets.

⁸ See J. J. Polak, "Monetary Analysis of Income Formation and Payments Problems," I.M.F. Staff Papers, Vol. VI (1957-1958) pp. 1-50

(iv) Finally let us assume not only that domestic supply can increase **in the face of higher expenditure**, but also that some part of incomes is spent on imported goods, and this results in a decline in the money stock and a drain on foreign exchange assets. But the incidence of saving may prevent this going as far as in the previous example. The outcome depends on the form in which the saved income is held. If the income on being saved is lent through the capital market or through financial institutions, other than the commercial banks, so that it re-enters the expenditure stream, then the final outcome is the same as in example (iii)⁹. If however, the saved income is held either in currency or in commercial bank balances there will be a somewhat different outcome.

To the extent that the process of expenditure and income generation, set off by the initial governmental expenditures, results in a higher holding of currency by the East African public, the volume of currency in circulation will remain above its original figure, and the sterling assets of the Currency Board will decline by something less than the original increase in the fiduciary issue. If the size of this original increase in the fiduciary issue was decided in the expectation, and with the intention, that it would eventually produce an equal reduction in external assets then clearly a further extension of fiduciary finance will now be possible. In this case there has been a creation of credit with more permanent effects in the shape of a higher fund of saving permanently available.

If now we assume that part of the saving out of the higher income is placed in deposits with the commercial banks, yet another possibility is introduced. The effect of this (ignoring many intermediate details will be ^{to} increase the liquid assets of the commercial banks: in the practical context of East African banking short-term assets in London will increase. There has been no evidence in recent years that the banks aim at any constant ratio between their liquid assets and their local deposit liabilities, but we will assume that an increase in their liquid assets does in fact make them willing to expand their lending in East Africa and that suitable borrowers present themselves.

The expansion of bank credit which will result from this increase in lending will finance a further series of expenditure and generate more income; and as before, if the supply of domestic goods and services can accommodate this further increase in effective demand, there will be a rise in domestic real output. But the increased expenditures from this source will have the effect of inducing a

⁹ This analysis leans on A.N. Macleod, "Credit Expansion in an open Economy", Economic Journal, September 1962, pp. 661-40.

further increment of imports and this will cause a drain of foreign exchange assets both from the banks and from the Currency Board.¹⁰ (There will also be some transfer of sterling assets from the banks to the Board since the currency holdings of the public will probably rise following the expansion of bank credit). If the banks adjust their lending correctly they will be able to reach a new position of equilibrium in which their loans, liquid assets and deposits are all at a higher level than before.¹¹

This final variant of case (iv) points to another qualification of the identification of 'credit creation' with an increase in the fiduciary note issue. In this case there is credit creation leading to an expansion of real output. But part of the credit created is commercial bank credit and this is not normally made available to the governments for financing their own expenditures, except to a minor extent. If the governments wish to secure the financial benefit of all the credit created as a result of the extension of the fiduciary issue they must take steps to ensure that the increased lending power of the commercial banks, consequent on the increase in their liquid assets, is used to acquire public securities.

2. Monetary Flexibility and the Fiduciary Issue

In recent discussion of the central bank question in East Africa there is a tendency to equate flexibility in the money supply with an enlarged fiduciary element within the currency issue. This is a technical question, but it is worth examining it before we go on, in the next section, to consider the larger questions of monetary elasticity.

There are two preliminary points to make. Flexibility in the currency is indeed a precondition of elasticity in the total money supply. Even where currency is a subsidiary medium of exchange it is normally demanded in a stable ratio to the dominant medium, bank deposits; thus an appreciable rise in money supply is only possible if the currency component can increase. Secondly, it may be remarked that the present system of currency issue in East Africa does possess flexibility of a kind. The currency can increase. Such an increase requires an accretion of sterling assets by East Africa as a whole and this depends on a favourable balance of payments. But in an export-based economy such a favourable external balance tends to occur naturally as people accumulate currency balances. However, the

¹⁰ c.f. J.W.O. Olakanpo, "Monetary Management in Dependent Economies," *Economica*, November 1961, p. 397.

¹¹ I am assuming in both variants of case (iv) that the increased holdings of currency and bank deposits are treated as 'true savings' by the public, and do not induce any rise in expenditures. To the extent that increased holdings of monetary assets induce the public to spend more, there will be a further drain of external assets, and a concomitant decline in money supply. The situation will then approximate to the end result of example (iii) above.

point to note here is that when people argue, as they do, for greater flexibility in the currency issue they are arguing for a loosening of the link between money and supply and the external balance. Just how far a dependent economy can loosen this link is a question to which we return later.

Turning now to the mechanism of fiduciary issue it needs to be said that in itself this system of issue is not necessarily a source of flexibility. The original pattern of all fiduciary issues, that given to the Bank of England in 1844, formed part of a system which was specifically designed to exclude flexibility in the currency, other than that permitted by the external balance. The system then established embodied a fixed fiduciary limit, with power to issue currency in excess of the limit, one-for-one, against gold. In principle this is exactly the system now in force in East Africa: the Currency Board may issue currency up to £35 million against domestic securities (plus £10 millions of cfof finance); but beyond that its notes must be backed, one-for-one, by external assets.

When such a system is altered to the extent of allowing a once-for-all increase in the fiduciary limit, there is an access of flexibility, but it may be no more than temporary. Should the needs of public finance drive the Board upto its limit - the position would revert to what it was before: increases in the currency would accompany an accretion of external assets. What is required, of course, is an arrangement whereby the fiduciary limit itself may be reviewed or exceeded in particular circumstances. Such arrangements are possible and do indeed exist. But once scope for flexibility is admitted other problems arise. There is a conflict between flexibility and the maintenance of statutory restraints on the monetary authority. The point of any limitation on the fiduciary issue is to circumscribe the power of the monetary authorities in some degree: by allowing them to vary the issue, the strength of the restraint is inevitably diminished. It is comparatively easy to legislate for semi-automatic increases in the fiduciary issue - say, a rise of so much per year - but this is not the only kind of flexibility that is required. A true central bank needs some measure of short-run elasticity and this is more difficult to combine with statutory restraints.¹² The question may well, of course, be asked: why link the currency to the external reserve at all? This is a pertinent issue to which we return later; but however it is answered it does not dispose of the problem of statutory restraints on the monetary authority.

¹²The East African Currency Board does function as a lender of last resort' in that it stands ready at all times to rediscount East African Treasury Bills. It has been able to do this without running into any problems over its fiduciary limit since it has hitherto operated well within this limit.

5. Monetary Flexibility and Economic Growth

A monetary system serving an economy of any degree of commercial development requires some elasticity in the total supply of money, as well as in its various components. In a dependent economy the simplest type of elasticity is that needed to meet seasonality in the inflow of income. Where hard currency is the major means of payment the need is for a currency that can expand as the crop season reaches its climax in the harvesting and movement of produce. The currency board system would appear to be well adapted to provide this kind of flexibility since the exportation of the crop automatically provides the foreign exchange against which of the currency is issued. As incomes are spent the 100 per cent backing of external assets ensures that the high expenditure on imported goods is automatically covered by foreign exchange.

But the adaptation is only partial. The fact is that crops must be paid for, and the circulation expanded, in advance of actual exportation and therefore in advance of foreign exchange receipts. The system has depended therefore, in the past, on a seasonal importation of funds by expatriate trading companies and banks. These funds have provided both the short-period finance needed for the moving the crops and the sterling assets required to expand the currency in advance of export receipts. Furthermore where bank deposits are a significant element in the monetary systems a currency board which possess no more than the traditional powers of such a body contributes nothing to their flexibility; this again must depend on expatriate banks with reserves held outside the country. However, following the recent extension of its powers and functions the East African Currency Board is in a position to meet these needs: its £10 millions of fiduciary issue for crop finance may be employed either to increase the currency circulation or to reinforce the liquid assets of the commercial banks, at the time of crop movement.

Another type of flexibility is that involved in a central bank's function as lender of last resort. In the more extreme cases in which the need for this arises - situations of financial crisis and panic - what is needed is the ability indefinitely to substitute acceptable claims on the monetary authority for temporary ~~unaccept-~~able claims on other transactors. This clearly demands some kind of emergency arrangements to expand the money supply, arrangements which pose technical problem and which raise issues of statutory control, but which we defer to the next section.

¹³c.f. P.T. Bauer, "West African Trade", (London, 1954), p. 203.

Thirdly in a growing economy there is a need for secular or long-term, elasticity in the money supply. As income rise and the volume of money transactions increases there is a rising demand for money. If this is not met, there will be a deflationary drag on the economy. Mr. G. Lomoro¹⁴ and Professor Paul Clark¹⁵ propose to turn this phenomenon into a positive advantage, as a source of finance, to the governments of East Africa. Their thesis, which I shall call Lomoro-Clark thesis, is that by a given date, 1970, a certain possible expansion of the national income may be postulated, on the assumption of particular rates of growth of the East African economy. They then argue that, on the basis of past ratios between the growth of income and various components of the money stock, we can credit how much growth in the money stock will be required, by 1970, in order to avoid deflationary effects. Finally, it is claimed, economic expansion will be positively assisted if the money stock is actually caused to grow by the predicted amount. This final step in the argument is linked to a further thesis of Professor Clark that the main block to expansion in East Africa lies not in a shortage of saving, or foreign exchange, or trained manpower, but of public finance.¹⁶ The expansion of the money supply is thus seen as necessary to avoid a deflationary drag on development and also as a vital source of funds for government.

At the outset may I say that I do not dispute the point of departure of this argument: demand for money does grow with the national income, and this provides a fund of saving which may and indeed should be tapped. However, there are two aspects of the Lomoro-Clarke model on which I wish to comment. The first concerns factors making for variability in the equilibrium relationship between the money stock and the national income. Professor Clark notes¹⁷ that the rate of turnover the money stock is an important variable in the monetary situation: a given volume of monetary transactions may be carried on either by a larger amount of money or a higher rate of turnover of money. But one gains the impression that Clark regards the velocity of circulation as a more or less dependent variable which, given the money stock, adapts itself - perhaps incompletely - to the needs of the economy. Personally I am rather doubtful of the existence of an adaptive mechanism involving a more rapid movement of money in the transactions circuit, but this is not the point that I wish to stress here. What I would maintain is that the velocity of circulation can behave as an independent variable and that, as an economy develops, changes in the financial structure tend naturally to produce changes in it. The relevant changes are the growth of non-bank financial intermediaries and

14 "Monetary Expansion in East African Development", E.D.R.P. No. 48,

15 "The Role of an East African Central Bank in Accelerating Development", E.D.R.P. No. 46.

16 Paul G. Clark, "Foreign Aid, Domestic Finance and the Development plan", paper prepared for the University of East African Conference on Foreign Aid, Dar-es-Salaam, September 1964. This paper

is in the Makerere series as E.D.R.P. N. 45.
17 "The Role of an East African Central Bank in Accelerating

the development of the capital market. These developments by increasing the quantity and variety of financial assets, and the ease with which they may be bought and sold, tend to decrease the asset demand for money. The effect of this in a closed economy would be to increase the velocity of circulation and, assuming the money stock was independently determined, to cause the price level to be higher than it otherwise would be. In an open economy the results are more complex and may include some diminution of the stock of money, or at any rate a diminution of its rate of growth.

But in a developing economy there is an important factor working in the opposite direction to all this. The extension of the money economy creates a rising demand for money balances, and by itself this would permit a larger expansion of the money stock than would otherwise be consistent with stable prices. This trend may indeed counterbalance the effects of changing financial structure, but it is impossible to predict in advance what the relative strengths of these two developments will be. This uncertainty about major variables in the system points to the need for extreme caution and care in embarking on monetary expansion and this need is underlined by another characteristic of monetary systems. In my view the possibilities of wide short-term variations in the velocity of circulation develop at quite an early stage in the growth of a monetary system. In a system of any maturity - and the East African system is mature enough - transactions balances are rarely near the minimum necessary for comfort, while there always exist considerable 'savings' balances of money which can be fed into the transactions circuit. This variability presents a danger of instability which would pose a problem of management in the context of a reformed monetary system in East Africa. The total effect of all these qualifications is, in my opinion, to preclude any automatic programme of monetary expansion. Expansion will be possible but the monetary authority will have to proceed empirically, with its eye on the immediately visible landscape rather than the distant horizon. This conclusion (to which, it must be said, Professor Clark himself gives support) is reinforced by the consideration that the increases in real income, on which the stability of the expansion process depends, are never a foregone conclusion.

My second comment on the Lomoro-Clark thesis refers to the external factor. It is the eternal lot of dependent economies that the scope for independent action is narrowly circumscribed by the balance of payments.¹⁸ A high marginal propensity to import ensures that any expansion of money income leads quickly to a rise in imports which, unless there is a concomitant rise in exports, or an inflow of capital, puts pressure on the external balance. Now the Lomoro-Clark model strikes me as essentially a closed economy model: it makes no explicit reference to the external relations of the system¹⁹. Its equilibrium criterion is the maintenance of stable prices. But in an open economy, under conditions of dynamic growth, a

¹⁸ The constricting effect of the external balance is by no means confined to dependent economies, as the British example shows.

stable price level is no guarantee of external equilibrium. Unless, therefore, one expects East African growth to be of the export-led variety, and this seems an unlikely prospect, the dependence of continued growth on an unpredictable balance of payments must be recognised.

Of course it may be said that this throws a pessimistic light on any policy for growth, and this is true. Also it has been assumed so far that the economy of East Africa will remain substantially 'open' and this is not necessarily the policy that will be followed. Failing a satisfactory development of exports, or of other foreign exchange receipts, it may be decided in the interests of faster growth to apply a policy of exchange control. Alternatively devaluation of the East African shilling might be considered. There would be advantages and disadvantages to both these policies and they would have to be weighed in the balance with the domestic objectives. But whatever policy is followed this problem of the external limitation must be faced in some way. It may be that currently the balance of payments is fairly healthy, but once an expansion rate of (say) 5 per cent per annum is established the position could change very rapidly.

4. Money Supply and External Reserves

My final question is to ask what if any, is the desirable relation between external reserves and the internal monetary system in a dependent economy. The present currency board system is characterized by a very close tie-up between the two. The practical object of the system is to obviate the possibility of a balance of payments problem; or, more precisely, to prevent economic disturbances and maladjustments from taking the form of a payments problem. In fact, the development of the East African system to the point where bank deposits are a significant form of money, has meant that a device for guaranteeing 100 per cent convertibility to the currency cannot do that for the total money stock.²⁰ However, no independent monetary system requires a level of external reserves which absolutely guarantees the convertibility of its total money stock, or of anything like it. The present system of linking the currency and the external reserves

¹⁹ Professor Clark does give attention to certain aspects of the foreign exchange situation in E.D.R.P. 46, but not the ones emphasized here. I must make it clear however that in the discussion of my original paper at Makerere, Professor Clark fully endorsed the importance of the external payments factor: **the difference** between us was one of emphasis rather than **principle**.

²⁰ Under the present system a very considerable measure of convertibility is accorded to bank deposits by the fact that the banks concerned are branches of international institutions, the head offices of which are able (and so far willing) to support their branches in any one territory with resources drawn from elsewhere (c.f. G.Y. Thomas, "The Balance of Payments and Money Supplies of a Colonial Monetary Economy", Social and Economic Studies, March 1963, p.34). This willingness however may not survive the setting up of a central bank with effective control of all external reserves and the more definite demarcation of the boundaries of the East African monetary system.

must be judged on its appropriateness, both technically and in terms of the reserves which it produces.

First, the question of the level of reserves. No one, I think, would argue that the present system produces an inadequate external reserve. Indeed, both Professor Clark and Mr. Newlyn have argued the view, which most people would accept, that the level of foreign exchange assets imposed by the present arrangements is excessive. But this defect could be adjusted relative easily by an increase in the fiduciary element of the currency on lines which were explored in the first section of this paper. With a larger, but still fixed, fiduciary issue the external reserve would be smaller, but it would still be linked at the margin to changes in the currency circulation. Provided we admitted the need for some periodical revision of the fiduciary limit to combat the tendency for reserves to become excessive again with the passage of time, as the currency grows, this is a perfectly feasible system of linkage between money and supply reserves. There is however, one apparent technical objection to it that requires comment.

It may be objected that the linking of reserves to marginal changes in the currency implicitly recognises the claims to convertibility only of currency and not of the other component of the money stock, bank deposits. This is valid objection but it can be met by modifying the system to include the deposit liabilities of the central bank with the currency in the quantity which is linked to the foreign exchange reserve. Then, so long as the commercial banks hold balances with the central banks - and one assumes that in a reformed system such balances would replace their present external assets - there would be, as it were, a formal avenue along which convertibility of bank deposits may proceed. This would introduce a certain minor difference into the system; in that it would mean that the linkage between the external reserves and the bank deposit component of the money stock would rest on a basis of proportionality (through the cash reserve ratios of the commercial Banks) and not on the one-for-one basis governing the currency - reserve linkage.

But there is a more serious objection to linking external reserve to the money stock. It is that the desirable level of external reserves is by no means a function of the domestic money supply. Basically it is the variability of the flows of external payments which determines the need for reserves, and although the internal monetary situation is one factor affecting these flows, there are other important determinants. Ideally the need for reserves should be determined empirically by observation of the past behaviour of, and present trends in, trade, prices and international money flows. However, if some simple index

of need is sought the absolute level of a country's trade is a more suitable quantity to fix on than its domestic money stock.²¹

An issue which came up earlier, and which is closely tied up with this problem, is that of furnishing suitable restraints on the monetary authority. The fact is that the linking of the money supply to external reserves does provide a convenient political limitation on the actions of the monetary authorities. Furthermore this linkage is by no means irrelevant to the purposes in view. There is, as I have said, no simple relation between the absolute size of the money stock and the level of reserves; but there is nevertheless some functional connection between changes in these two quantities. A rising quantity of money can be a cause of a weakening balance of payments; and, while opinions may differ as to its degree of effectiveness, a compression of the money stock is not an irrelevant response to a declining reserve. However, these two situations themselves point to a distinction in the significance of a restraint on the money stock. A statutory limitation of this kind may aim at preventing inflationary increases in the money supply; or it may have the object of enforcing a particular response - a tight money policy - in the face of declining reserves. In any given context a rule of this kind may of course have both objectives in view, but opinion on the effectiveness of the rule may distinguish between the two. It is a perfectly consistent position to hold that a statutory link between money stock and reserves is an effective and reasonable means of checking inflationary increases in the quantity of money, but that monetary restriction is not an invariably appropriate policy in the face of declining reserves.

At this point we should recall a dilemma which we noticed earlier. The requirements of domestic monetary policy may call for elasticity in the money stock, even in the more limiting context of a dependent economy. But it is difficult to meet the need for flexibility and retain the discipline of statutory limitations on money supply. However, the very conditions under which a dependent economy operates may offer a way out of this difficulty. The speed with which an inflationary internal policy produces an impact on the foreign exchange reserve of this type of economy may be such that a statutory check, which ideally operates as an advance warning, loses some of its point.

²¹ Scitovsky has proposed a measure of desirable reserves based on the expendability of cash balances: see "Economic Theory and Western European Integration" (London, 1958) pp. 101-9. As I interpret it his formula yields a measure of the maximum demand for foreign exchange which could arise from a given money stock. The objection to this is that reserves of any kind are normally based on probable needs and not on maximum potential needs. Estimates of probability in this connection can only be based on past observations.

Also it is arguable that the existence of such a powerful 'natural' check moderates the need for statutory measure. Possibly the best arrangement is to set a low legal minimum ratio of reserves to money stock, to act as a 'distant' warning and to point the danger into which internal policies can lead, but to expect the authorities to operate well above it. This would give the necessary elbow room for domestic monetary policy, while the general level of the reserve could be attuned to the expected variability of the foreign balance. If this appeared to demand an implausible degree of self discipline on the part of the monetary authorities then perhaps a more complicated system could be devised: for example, one that combined a minimum legal ratio of reserves to money supply with, above this, a range of ratios within which no increases in the money supply would be permitted. This would place some constraints on action but it would avoid imposing inappropriately restrictive policies in some situations of external deficit. However, any system other than one that completely severed the link between money supply and external reserves would require to provide loopholes to meet crisis conditions.

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