The Techniques of Monetary Control: A Review Article

1. Introduction: The Meaning of Technique

The purpose of discretionary monetary policy is, in the usual case, to influence the level and composition of aggregate demand primarily, but not always exclusively, by influencing the expenditure decisions of the private sector (1).

To fix our ideas, let us assume that these two "target" variables (to adopt Tinbergen's terminology) (2) are known and stable functions of the money supply (conventionally defined), a known group of interest rates, and the availability of finance from a defined group of institutions. By a slight extension of Tinbergen's terminology, we may call these the "ultimate" instrument variables.

Now these "ultimate" instrument variables are not, in general, under the direct control of the monetary authority. The variables which are we shall call the "proximate" instrument variables. Naturally enough the variables falling under this head differ in differing institutional environments. In developed financial systems, however, it is now usual to find the monetary authority endowed with a measure of control (which may be complete) over bank reserves, bank reserve requirements, central bank lend-ind rates, the size and composition of the central bank's security portfolio and, in some instances, a group of "administered" interest rates charged or paid by defined financial institutions. These are the more familiar "proximate" instrument variables.

On this approach, the problem of monetary "technique" can be defined as that of making the best use (or choice) of

(1) Cf. Report of the Committee on the Working of the Monetary System (Radcliffe Report). Cmnd. 827 (H.M.S.O., 1959), para. 397. HENCEFORTH cited as *Radcliffe Report*.

(2) J. TINBERGEN, *Economic Policy: Principles and Design* (Amsterdam, 1956).

"proximate" instrument variables given some more or less definite set of objectives in terms of the "ultimate" instrument variables. This is the problem with which, as I understand it, Professor Aschheim's recent and very stimulating book is primarily concerned (3).

Clearly enough this is a much more restricted problem than, let us say, a study of monetary policy as a whole. In practice we do not know, with a sufficient degree of precision, the functions relating aggregate demand to the "ultimate" instrument variables. As a result technically "efficient" monetary control may be, from the wider economic point of view, "inefficient" either because the "wrong" "ultimate" instrument variables have been selected for manipulation (qualitatively inadequate monetary theory) or because, though the "right" "ultimate" instruments have been selected, the relevant demand functions are too insensitive or too slow to react to their manipulation for monetary policy to perform in the expected way as a stabilisation device (quantitatively inadequate monetary theory).

I have developed these rather obvious points at some length without any intention to devalue Aschheim's work. The specification of "ultimate" instruments is, in my classificatory scheme, the task of monetary theory. Discussions of technique, however, frequently imply acceptance of a particular monetary theory. That is they proceed on the implicit assumption that "technical" efficiency in monetary control, as I have defined it, is both a necessary and sufficient condition for overall "economic" efficiency: which is correct only if the implied monetary theory is quantitatively and qualitatively adequate. In the later passages of this paper I shall concern myself only with Aschheim's explicit discussion of techniques and not with what I believe to be his implied monetary theory and his implied and consequential judgment concerning the potential contribution of monetary policy to short-term economic stabilisation. Obviously differences on these latter issues might be of crucial importance in any attempt to consider Aschheim's complete position. They are not, however, strictly relevant to Aschheim's study of techniques. Accordingly I shall, for the most part, ignore them.

(3) J. ASCHHEIM, *Techniques of Monetary Control* (Baltimore, 1961), pp. IX + 164. Cited throughout as ASCHHEIM.

2. The Origin of the Technical Dilemma

Questions of monetary techniques, as I have defined them are, it is plain, intimately related to issues of monetary theory. This has an important bearing on present controversy regarding monetary policy and on Aschheim's work. Indeed his position on what seems to me to be the central issue of recent controversy influences the whole of his analysis. As a preliminary, therefore, a brief account of what I believe to be the central issue is essential.

In the immediate post-war period monetary policy, as a means of short-run economic stabilisation, was out of favour. For this there were two principal reasons. In the first place the rather simple theory of aggregate demand then in favour assigned a key role to the rate of interest which was, to many economists, the "ultimate" instrument variable on which aggregate demand principally depended. In the second place, empirical enquiry seemed to suggest that both private investment and the consumption-income relation were insensitive to changes in rates — at least over the range experienced in practice. The contribution of monetary theory was, therefore, to suggest that unusually large changes in rates were probably essential for the control of aggregate demand.

At the same time, however, it was pointed out that the great growth in the amount of public marketable debt held by financial institutions implied that the stability and development of these institutions would be seriously impaired by large changes in rates. Hence the first form of the dilemma amounted to the proposition that, for monetary policy to be useful, large changes in rates were necessary while because of the need for financial stability and the longer-run development of the money and capital markets, large changes in rates were undesirable (4), and might even provide a cure less palatable than the disease.

From this point, there have been two developments. In the first place some economists have tended to accept the view that, from a counter-cyclical point of view, the role of discretionary monetary measures is extremely limited: as a corollary they have, explicitly or implicitly, urged the need to rely primarily on fiscal

(4) Cf. for example: R. F. Musgrave in *Income, Employment and Public Policy* (New York, 1950); essentially similar arguments recur in the Radcliffe Report, paras. 487-492.

measures (5). Others have modified the accepted monetary theory of the earlier period by emphasizing not the cost or incentive effects of changes in interest rates but the dependence of aggregate demand upon the "availability" of finance from institutional sources. On this argument "availability" is the crucial "ultimate" instrument variable and the primary purpose of monetary measures under the "new" theory is not to make borrowers less willing to borrow but to make lenders less willing to lend. If this new emphasis is empirically justified, in the sense of providing a useful measure of scope for anti-cyclical monetary action, what are its "technical" implications?

From the "technical" point of view, however, this "new" monetary theory was compatible with two opposed views. The first was to argue that the effective control of availability, in view of the potential capacity of financial institutions to monetise government debt, required the grant, to the monetary authority, of new techniques of control not only over banks but also over non-bank financial institutions. This line of thought is to be found, in the early post-war period, in certain proposals put forward by Mr. Marriner Eccles, the then Chairman of the Board of Governors of the Federal Reserve System (6). It received careful consideration in the Radcliffe Report (7) and some examination in the Report of the Commission on Money and Credit (8). Recently the work of Gurley and Shaw has provided a formidable systematic rationale of this approach (9). Essentially it involves the proposition that the existence of a large marketable public debt has *weakened* the traditional techniques of monetary control so seriously that new administrative devices are necessary.

The second development of the "availability" theory argues precisely the reverse in the sense that it regards the existence of a large marketable public debt as a factor which *facilitates* the control of availability through the use of existing and familiar

(5) This seems to be substantially the *Radcliffe* conclusion though the Committee took full account of the "new" availability theory in reaching it.

(6) Marriner Eccles, "Methods of Restricting Monetisation of Public Debt by Banks", *Federal Reserve Bulletin* (1947). Reprint of a statement to the Banking and Currency Committee of the House of Representatives.

(7) *Radcliffe Report*, paras. 506-511.

(8) Report of the Commission on Money and Credit (New Jersey, 1961), pp. 100-102.

(9) J. G. Gurley and E. S. Shaw, *Money in a Theory of Finance* (Washington, 1960). See also the references cited in Aschheim, p. 111, footnote 1.

techniques. This group of theorists argues that precisely because debt holdings are so large, and the stability and policies of financial institutions are so closely bound up with the value of their portfolios, quite small changes in bond prices (interest rates) will exert a very significant influence on the willingness of financial institutions to lend (10). Traditional techniques can readily accomplish small changes. Hence, because of the size of the debt, traditional techniques can effectively control availability — the "new" critical variable.

The dispute between these two groups is, it should be noted, a "technical" one. The common problem is how best to control availability. The line of division is the attitude to the debt. One view is that the debt weakens traditional techniques: the other that it strengthens them. The view taken on this issue is crucial and tends to influence, if not determine, the whole of the subsequent technical analysis. Aschheim adopts a position which, in terms of this brief and somewhat oversimplified account, puts him in my second group. He thus regards the large marketable public debt existing in the U.S.A. as a factor which increases the potential efficiency of existing techniques and, in particular, of open market operations. Since this is a crucial judgment we must begin by examining his reasons for making it.

3. Aschheim's Position

According to my argument Aschheim's view of the significance of the existence of a large marketable public debt is crucial for his analysis. It is therefore a little surprising that he gives no full account of the reasons which lead him to regard the debt as technically beneficial. The following quotation is the most extensive statement of his position that I can trace. In view of the importance of the issue, I give it in full (11).

> "Another consideration, however, is of much broader significance. The large size and wide distribution of Government debt — which have given rise to the fear that restrictive monetary policy is undermined by compensating increases in velocity — augment the direct influence of the central bank on financial enterprises in general. Without growth in Government debt, conventional monetary policy is largely limited to variation of reserve requirements, rediscounting policy, and moral suasion, all of which are directly applied to commercial banks only. But with the expansion of the Government securities market to the point where it involves the great bulk of financial institutions, and with the growth of the securities portfolio of the central bank in relation to the reserve base of the money supply, open-market operations have a direct impact on the lending and investment activities of financial enterprises in general. Thus the growth in Government debt has widened the scope of direct contact between the monetary authority and the various financial institutions. It has heightened the interdependence between the various sectors of the money and capital markets, and has increased the substitutability between financial assets. In consequence, the direct effects of monetary policy on financial institutions of all types have been strengthened rather than weakened".

(10) The best-known reference is: R. V. Rosa in *Money, Trade and Economic Growth* (New York, 1951), pp. 270-295.

(11) Aschheim, p. 131. There are other passages in the work making similar or related points. Cf. for example, pp. 11-17, p. 17.

This passage can I think be summarized as asserting that because most financial institutions hold sizeable portfolios of marketable government debt, open market operations, which can be used to change the market value of debt, must exercise a pervasive influence throughout the whole financial sector. The existence of a large marketable debt thus widens the scope of monetary techniques to embrace, through the market in securities, the whole range of financial institutions and not merely commercial banks.

The difficulty in this passage lies in the ambiguity of the word "influence". It is clear that in so far as institutions hold marketable public debt, the value of which, at the market, is susceptible to official operations, then there is a sense in which the monetary authority is "in touch with" all financial institutions and able, as a result, to exert some "influence" upon them. But this is a trivial proposition in the context of monetary control and does nothing to resolve the real issue of the technical implications of a large marketable debt. Some progress can perhaps be made by distinguishing two aspects of this controversy. The first of these concerns the characteristics of a system with a large marketable public debt held extensively by financial institutions as against a system with a very small public debt held only by households.

The second, and for our purposes more important, concerns the technical means appropriate to the cyclical control of availability in a system with a large marketable public debt.

Consider now a system of the latter type (i.e. small public debt) and assume that, in some period in which economic activity is expanding, the monetary authority initiates a policy of open market sales. As a result bank reserves are reduced and, since by assumption the banks have no bonds to sell, there is a direct impact upon availability and the rates charged to the private sector. Borrowers who are denied bank funds now seek other sources of finance but since non-bank financial institutions, *ex hypothesis*, have no bonds, they cannot " switch " out of public debt into private debt (12). It follows that borrowers can obtain funds only by selling new private debt instruments to households through the new issue market (13). In such a system it seems plausible to argue that the " cyclical " variability in the supply of funds to the business sector is likely to be rather low. Moreover all financial institutions react rapidly to official policy even though they themselves hold no government securities. The efficacy of open market operations in these circumstances seems clear although its impact on availability is restricted to the banking system.

Now consider a system in which on the contrary there is a large marketable public debt extensively held by banks and financial institutions. In such a system financial institutions, including banks, may " switch " out of bonds into private debt. It is therefore the case that such a system will behave in the same way as the " small debt " system only if the effect of the open market sales is to prevent all " switching ". Equally efficient technical control of a " large debt " system by open market sales thus seems to require the complete freezing of all the bond holdings of financial institutions: greater technical " efficiency " would require institutional " switching " from private debt into bonds.

If we look at the matter along these lines it seems that the single proper conclusion is that the existence of a large marketable debt must increase the *potential* cyclical variability of finance to the business sector. Institutions which hold debt, as Aschheim himself

(12) If they hold marketable private debt " switching " is still possible.

(13) Directly or through intermediaries. If the latter course is followed it is households who " switch " out of idle balances into near moneys created by financial intermediaries.

points out, *may* " switch " (14). One cannot, legitimately, proceed from the size of the debt, and the market characteristics which tend to be associated with it, to the efficiency of open market operations. For the efficiency — or otherwise — of open market operations is something which makes sense only in relation to the choice of the technical means best adapted to the " cyclical " control of availability in a system of given debt characteristics. And this is a matter which can only be decided by empirical enquiry into the patterns of institutional behaviour. On merely *a priori* grounds a large marketable debt seems " technically " neutral: it is a stick which " points " in either of two diametrically opposed directions.

This, of course, is not to deny that patterns of institutional behaviour could exist which would ensure that cyclical variations in the supply of funds to the business sector were readily controllable by open market operations. But Aschheim offers little evidence to suggest that these are, in practice, the patterns to be found in the U.S.A. Conceptually two sorts of evidence would bear on this issue. In the first place it might be possible to accumulate statistical information, by econometric and other enquiries, relating to the reactions of the principal institutional lenders to officially induced changes in bond rates and bank reserves. In the second place it should be possible to find out to what extent, because of the response of financial institutions, borrowers are compelled to seek out finance from unusual and unfamiliar sources which, as we have seen, is a symptom of the " successful " control of availability. This, of course, was the approach of the Radcliffe Committee (15).

As I interpret his position Aschheim then would agree that the existence of a large marketable debt increases the potential cyclical fluctuations in availability. At the same time, however, he seems also to argue that, because of some mechanism, never to my mind convincingly specified, the very existence of a large marketable debt ensures that open market operations can nevertheless always provide an adequate degree of control over availability. This it seems is equivalent to arguing that the existence of a large public debt ensures an institutional pattern of behaviour favourable to control via open market operations. For this conclusion there is

(14) ASCHHEIM, pp. 129-130.

(15) The Radcliffe Committee did not, of course, confine itself to examining the experience of borrowers but also enquired closely into the behaviour of lenders.

little warrant to be found in Aschheim's discussion. It is, to my mind, not without significance that the passage quoted at the beginning of this section is put forward by Aschheim precisely as an answer to the contention that the cyclical control of availability requires the extension of quantitative control to financial institutions other than banks. It can scarcely be said to specify a mechanism adequate to sustain his conclusion.

The purpose of this rather extended discussion is not to suggest that Aschheim is obviously wrong on this issue but merely to argue that (a) the issue of the debt is a crucial one and (b) Aschheim's treatment of it is not convincing. Fortunately much of his detailed discussion of particular technical devices has an interest and value largely independent of his stand on the debt issue. His final position, however, can be no stronger than its foundation and this, in my judgment, is not very strong. With those qualifications in mind we can now consider, in somewhat greater detail, Aschheim's discussion of particular central banking techniques.

4. Aschheim on Open Market Operations

Aschheim's work, as his preface plainly states (16), is concerned with central banking techniques in the present U.S. monetary and financial system. His policy recommendations can, therefore, be usefully examined only in this specific institutional context. In many cases, however, his analysis is potentially of general application. In this, and the remaining sections of this paper, it is with his general analysis, rather than his specifically U.S. policy conclusions, that I shall mainly concern myself for it is this aspect of his study which has the greatest interest for non-American readers.

Aschheim's view concerning open market operations is uncompromising. They are the most effective of all central banking instruments. He writes (17) "No other techniques of central banking — indeed not even all the other techniques of central banking taken together — can approximate the instrument of open market operations in terms of the efficacy imparted to the monetary authority". Later he reaffirms this judgment by writing (18), "As concluded in this study, the technique of varying cash reserve requirements for contra-cyclical purposes, the technique of non-penal discretionary discounting, and the technique of moral suasion can all be dispensed with if full use is made of open market operations".

(16) Aschheim, p. vii.
(17) Aschheim, p. 12.

As we shall see, this judgment assumes that open market operations are conducted quite generally throughout the maturity pattern and not restricted to the short-term end of the market (19). Even so, in view of Aschheim's uncompromising position, it seems worthwhile to examine his analysis rather carefully. In doing this we need, of course, to remember that the superiority (for defined purposes in terms of some "ultimate" instrument variables) of a particular type of control tells us nothing, and should imply nothing, about the influence of changes in these variables on the ultimate targets of policy — that is about the overall effectiveness of contra-cyclical monetary management.

We begin by examining Aschheim's discussion of the relative merits of open market operations and variations in reserve requirements and since, at any rate in the United Kingdom, the problem of monetary management has usually, in recent years, been that of restraining demand, we shall confine ourselves to the case in which "in the face of a boom in the demand for private credit the proximate objective of a restrictive monetary policy is to curb the switching by banks from government securities into commercial loans" (20). I interpret this to imply a situation in which the banks do not possess excess reserves and in which the advances portfolio is supply determined (21).

Aschheim's argument is to the effect that, in such a situation, variations in reserve requirement which entail a given contraction in bank deposits, carry with them "income" and "liquidity" effects which tend, relatively to open market operations, to encourage the banks to switch out of bonds into advances. Variation in reserve requirements in thus a less efficient method of checking "switching" — our assumed objective of central banking action.

(18) Aschheim, *loc. cit.*
(19) Aschheim presents an excellent and to my mind persuasive criticism of the "bills only" doctrine in Chapter 4 of his work, pp. 53-82.
(20) Aschheim, p. 23.
(21) That is the excess demand for bank advances is either positive or zero.

Aschheim's analysis may be illustrated by the following simple example (22). Suppose the banking system is initially in Position 1 — by assumption a preferred portfolio position. Now let open market sales reduce reserves by one unit. As a result the banks move to a new portfolio — by assumption the preferred portfolio — which is shown as Position 2. Now assume that, from Position 1, an identical reduction in total deposits is enforced by an increase in the reserve requirement. *If* the banks reduce advances to the same extent as is shown in Position 2, the new portfolio will be Portfolio 3. Aschheim's argument now proceeds by demonstrating that, because of the differential "income" and "liquidity" effects of the two techniques, if Portfolio 2 is, in fact, a preferred position then Portfolio 3 cannot be. He also demonstrates that the preferred position reached by the banks after the increase in reserve requirement will, qualitatively, correspond with Portfolio 4: that is it will contain a higher advances portfolio and correspondingly smaller bond holding.

BANKING PORTFOLIO ADJUSTMENTS

	Initial position	Position after:		Possible final position after variation in reserve requirements
		Open market operations	Variation in reserve requirements	
	Portfolio 1	Portfolio 2	Portfolio 3	Portfolio 4
Deposits	100	90	90	90
Reserves	10	9	10	10
Bonds } earning assets	40	35	34	33
Advances } earning assets	50	46	46	47
Reserve ratio, %	10	10	11	11.1

His argument, stated very briefly, is as follows: Any variation in reserve requirements reduces earning assets by more than does an "equivalent" open market operation. Hence it reduces bank income by more. It thus brings about a greater increase in the marginal utility of bank income and encourages substitution of

(22) The analysis which follows is derived from: D. C. Rowan, "A note on Open Market Operations *versus* Variations in Reserve Requirements", *Economic Journal* (June, 1962), pp. 471-477.

low yielding earning assets (bonds) for the higher yielding advances. This is the "income" effect.

Aschheim further argues that Portfolio 3 provides the banks with greater "liquidity" than Portfolio 2. "To illustrate, if required reserves are 10% and bank deposits drop from 100 to 80, only 2 units of the 20 cash are available for paying off deposits. On the other hand, if required reserves are 20%, and deposits drop from 100 to 80, 4 units of the 20 cash are available for paying off the deposits. Thus the higher reserve requirements reduce the marginal utility of the 'moneyness' of bank assets, also inducing commercial banks to sacrifice liquidity in order to obtain additional earnings" (23). This is the "liquidity" effect.

Aschheim concludes "The 'income' effect and 'liquidity' effect of imposition of (higher reserve) requirements jointly induce banks to switch out of government securities into loans on a larger scale than in response to open market sales on the part of the monetary authority" (24). By the same arguments variations in reserve requirements involve a greater strain on the bond market than open market operations (25). Hence the two methods are not perfect

(23) Aschheim, p. 24.

(24) Aschheim, *loc. cit.*

(25) This point has been disputed. A simple proof is as follows.

Let E be the total Earning Assets of the banks so that

E≡B+A when

B≡bond holdings A≡Advances.

Let C≡Cash. D≡Deposits.

Then D=C+B+A and $\Delta (B+A)=\Delta D-\Delta C$.

Let the change in Deposits due to reserve variation be ΔD_1

Let the change in Deposits due to open market operations be ΔD_2

Then:

$$\Delta D_1=\Delta(B_1+A_1)=\Delta D_2=\Delta(B_2+A_2)+C_2$$

for with the reserve variation technique ΔC=zero.

Now ΔC_2 — the change in cash reserves is equal in value to the total bond sales by the central bank while ΔB_2 are the induced sales by the banking system resulting from the open market operations.

Since:

$$\Delta (B_1+A_1)=\Delta (B_2+A_2)+\Delta C_2$$

if both systems are equally efficient in restraining advances so that

$$\Delta A_1=\Delta A_2$$

Then:

$$\Delta B_1=\Delta B_2+\Delta C_2$$

that is the bond sales induced by variation in reserve requirements are precisely equal to the sum of the bond sales induced by the open market operations (ΔB_2) and the initial sales themselves.

substitutes as has sometimes been suggested, and the reserve variation technique does not provide any greater protection for the bond market (26).

There are a number of objections which can be made to this analysis (27). In the first place Aschheim's argument, specifically relating as it does to the short-run, seems to assume that the rate of interest is unaffected by operations in the bond market. If this assumption is relaxed, and the banks who reduce their bond holdings have to *sell* bonds (as opposed to allowing them to run off through redemption) then bond sales may involve a capital loss. For example suppose both methods reduce advances by the same amount (Portfolios 2 and 3) then, although the total sales of bonds in the market are identical under both systems, *the sales by the banks themselves* are greater when contraction is enforced by a variation in reserve requirements. Hence capital losses are greater under this system. If, as is sometimes argued, banks are peculiarly sensitive to realised capital losses (28), then since a given contraction in advances entails a greater capital loss under the variation in reserve requirements, the banks *may* be *less* willing to sell bonds. If this is so they may contract advances *further* under this system than under that of open market operations. If there is anything in this argument, the relative merits of the two techniques must depend upon the relative importance, at the margin, of the "income", "liquidity" and "capital loss" effects. A qualitative analysis no longer suffices to establish Aschheim's result. To rank the two techniques requires quantitative evidence of bank behaviour which Ascheim does not provide.

In the second place it is possible to argue that the two techniques may exert differential effects upon bankers' confidence in the sense of their assessment of the credit risk attaching to advances. There are some reasons to suppose that this may be so

Clearly if $\Delta A_1 < \Delta A_2$ i.e. reserve variation is less efficient in reducing advances then $\Delta B_1 > \Delta B_2 + \Delta C_2$ and reserve variation involves the greater total of bond sales.

Hence, for any given change in deposits, the more efficient a technique in reducing advances the greater the protection it offers to the security market.

(26) Unless, of course, it is more efficient at restraining advances.

(27) For a more extensive discussion see my note in fn. 22 above.

(28) This sensitivity is doubted by some authorities since banks can charge capital losses against tax. P. A. SAMUELSON, "Reflections on Monetary Policy", *Review of Economics and Statistics* (August 1960). I am indebted to Mr. H. N. Goldstein for reminding me of the importance of this point. It should be noted, however, that some evidence suggesting sensitivity to capital losses was given to the Radcliffe Committee.

and that variations in reserve requirements entail "shock" effects not associated with open market operations.

Suppose, for example, we think of banks as seeking to maximize, subject to a portfolio constraint, a utility function of the form:

$$U = f(y, s, l)$$

where y is money income, s is an index of credit risk, l an index of liquidity and $\frac{\delta u}{\delta y}, \frac{\delta u}{\delta l} > 0$ while $\frac{\delta u}{\delta s} < 0$.

In these circumstances we may, for any given degree of "general" uncertainty, regard s as a function of the advances ratio. Our "shock" effect hypothesis now merely envisages that this function is *differentially* shifted by the two techniques and that the greater shift results from variations in reserve requirements. Clearly if this hypothesis is well grounded variation in reserve requirements will make advances less attractive in relation to bond holding at any given set of relative yields.

This argument rests, it should be noted, upon the implied assumption that variations in reserve requirements are unusual (non-routine) occurrences which call forth unusual (non-routine) reactions from the banking system. This is an important point because Aschheim's argument can be interpreted as being concerned with the (implicit) question of which of the two techniques is superior if the central bank is required to make a once for all choice between them. Putting the issue in this form implies a comparison between "open market" operations and frequent (routine) and rather small variations in reserve requirements. Where variations are frequent the "shock" effect of any change will tend to be small and can probably be ignored (29). It seems to me, however, dubious whether it is wise to contrast the two techniques in this way — at least in the U.S. context.

In comparing technical devices on theoretical grounds one can be preferred to another in all circumstances if, and only if, whatever the economic situation rather "weak" assumptions about institutional behaviour (in this case banking behaviour) make it clear that the preferred technique is always of equal or greater

(29) ASCHHEIM, p. 27, identifies the "shock effect" with the impact on commercial bank earnings.

technical efficiency than the rejected technique. Aschheim's analysis, though stimulating and suggestive, does not convince me that this is the case. If this conclusion is reasonable, both techniques may have something to contribute and the real question may be what, in any given circumstances, is the " optimal mix " between them.

A little surprisingly, Aschheim does not develop his comparison of the two techniques by considering their impact, through the security market, on financial institutions other than banks. This impact, presumably, comes about through variation in bond rates since the direct quantitative effects on non-bank financial institutions may be ignored. This suggests that the maximum short-run impact on " switching " by non-bank financial institutions will occur if the greatest change in interest rates takes place among those rates to which important institutions are particularly sensitive. Which these are is a question of fact — not theory. In so far, however, as a selective impact upon the maturity pattern is desirable, this somewhat strengthens the case for " open market " operations. The reason for this is simply that, with variation in reserve requirements all the bond sales are made by the banks who presumably sell rather short bonds. Under open market operations, by contrast, a part of the total bond sales is made by the central bank. If this part, as Aschheim strongly recommends, is not inhibited by a " bills only " doctrine, the initiating official sales could be directed deliberately towards the attainment of an appropriately selective set of rate changes — which might well be an advantage. As against this it is always possible to argue that variations in reserve requirements of a " non-routine " nature have a significant effect on the " confidence " of non-bank financial institutions (and thus on their readiness to " switch ") which is, in practice, likely to be of greater importance for controlling the availability of funds from non-bank financial institutions. This, of course, is simply a slight extension of the argument used earlier in relation to banks.

5. Aschheim on Supplementary Reserve Requirements

In accordance with his thesis that open market operations, if freed from the constraint imposed by the doctrine of " bills only ", are more effective than all other central banking techniques, it is necessary for Ascheim to deny the need for supplementary security

reserve requirements as a means of controlling cyclical variations in the availability of institutional finance. This he does in Chapter III of his book. In this context, it should be noted, Aschheim's arguments relate, in large measure, specifically to the U.S. position.

Supplementary reserve requirements have, as Aschheim points out (30), been proposed for a variety of reasons: to protect depositors; to insulate a part of the government debt from the impact of restrictive monetary policy; to promote the development of a bond market; to control institutional " switching ". In what follows I shall discuss only the last of these.

At the theoretical level, Aschheim makes two substantial points. The first is that, if the imposition of such requirements is to assist in the control of " switching ", the requirements must be large enough to compel the bank to hold securities they would otherwise have sold. To use his terminology they must cover some " extra-marginal " bond holdings (31). With this view there can be no disagreement.

Aschheim's second argument is that where the requirements do not cover all such holdings, they will have the " perverse " result of stimulating " switching ". This, he asserts, is because they exert unfavourable (from this point of view) " liquidity " and " income " effects which raise the relative attraction, at the margin, of private debt (32). The " liquidity " effect in this context is substantially identical with that already discussed. The " income effect " is not. It may, therefore, be worth some examination.

According to Aschheim the " income effect " occurs because the imposition of supplementary reserve requirements " insulates " a part of the debt from the effects of a restrictive monetary policy. Hence the market rates on some bank-held securities do not rise as much as they otherwise would have done. Thus, in his view, imposition of the requirements " limits the rate of return on a certain proportion of banks earning assets... implying a smaller bank income than otherwise " (33). This raises the marginal utility of additional income with the usual results in terms of substitution via " switching ".

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(30) Aschheim, pp. 36-39.
(31) Aschheim, pp. 41-45.
(32) Aschheim, *loc. cit.*
(33) Aschheim, p. 42.

Now in the short period a rise in rates can increase bank incomes only in so far as banks are purchasing debt out of conversion repayments. Aschheim's income effect thus depends upon two factors. The extent to which "insulation" checks the rise in interest rates and the extent to which banks hold short term bonds repayable within the relevant period. In the U.S. about one-quarter to one-fifth of bank securities have less than a year to run to maturity. The "notional" loss in earnings thus affects about a quarter of the security portfolio in a 12 month period.

Moreover, security prices will fall only if bank selling is extensive. The individual bank will thus only experience an income effect if:

(a) it believes that other banks would have *sold* securities thus raising rates;

while (b) it could have *converted* securities (through redemptions) at no significant capital loss.

Whatever the plausibility of such an "income effect" in a system such as that of the U.S.A. composed of a large number of individually rather small banks, it is difficult to see its application, in the short period, in a system in which there is a small number of very large banks. Moreover just as security requirements, by inhibiting bond sales, keep bond rates down, so, presumably, by restraining advances expansion they keep advances rates up. If all banks were freed from the reserve requirements, and "switched" accordingly, it is not theoretically necessary that, *ex post*, their incomes would be higher. The gain on the retained and converted bond portfolio might not, *ex post*, offset the net costs of "switching" in terms of loss of bond income and possibly, if the aggregate demand for advances was inelastic, of advances income also.

This argument, though perhaps of some slight theoretical interest, is however of little practical importance for in this context it is Aschheim's "liquidity effect" which is of the greater significance. The attitude, in some periods, of the Australian trading banks to their Special Account deposits does seem to suggest that the "liquidity effect" of enforced holdings of "liquid" assets is real (34). Where the enforced holdings are large, banks do seem

(34) Cf. H. W. Arndt, "The Special Account Procedure as a Technique of Central Bank Control", *Review of Banca Nazionale del Lavoro* (December, 1956), p. 249, and

to feel more liquid and thus become more ready to let their liquidity decline.

Aschheim's second line of attack is to point out the severe practical difficulties of imposing supplementary requirements — even on banks — where, as in the U.S.A., the banks are very numerous and do not maintain homogeneous asset portfolios. He concludes that, in practice, either requirements would have to be set rather low (with "perverse" consequences for banks with large security portfolios), or so high as to impose severe hardship on some banks, or to differ between banks (which would raise the inevitable cry of discrimination). For all these reasons he argues that a simpler way to achieve control of bank lending would be to specify a loan ratio on lines previously proposed by Kahn and Bronfenbrenner and suggested, for use in emergency situations, by the Radcliffe Committee (35). This, so far as banks are concerned, is probably correct.

Aschheim does not extend his discussion of supplementary reserve requirements beyond banks. This is consistent with his denial of the Gurley-Shaw thesis and his belief in the ability of appropriately selective open market operations, because of the large government debt, to control these institutions effectively. This is in marked contrast to the attitude of the Radcliffe Committee who gave this matter rather detailed consideration and were, for the short-run at least, sceptical of the capacity of interest rates to control bank advances — let alone the lending policies of non-bank financial institutions (36).

6. Aschheim on Financial Intermediaries

Aschheim devotes a chapter in his book to a critical discussion of the new "theory of finance which encompasses the theory of money": that is to the theories usually associated particularly with the writings of Gurley and Shaw (37). A considerable part of his

Dr. H. C. Coombs, "The Development of Monetary Policy in Australia", E. S. & A. Bank Research Lecture (Queensland, 1955), p. 16. Also quoted by Arndt.

(35) M. Bronfenbrenner, "A Loan Ratio for Inflation Control", *Journal of Political Economy* (October 1951), pp. 420-433. R. F. Kahn, *Radcliffe Committee Minutes of Evidence*, Q. 10993-10994. *Radcliffe Report*, para. 527.

(36) *Radcliffe Report*, paras. 508-509.

(37) For references see fn. 9 to Section 2 above.

discussion is concerned with theoretical and definitional issues. But in the later sections of his chapter he turns to the implications of these theories for anti-cyclical monetary policy.

Aschheim formulates the short-run policy argument derived from the Gurley-Shaw analysis as follows: "The central bank controls the quantity of money by regulating the volume of reserves available to commercial banks. When aggregate monetary demand threatens to become excessive, the central bank can restrict the supply of reserves. In response to their tightened reserve position commercial banks raise credit standards for borrowers and increase rates on loans. Now if commercial banks were the only source of credit available to borrowers, the restrictive monetary policy would be quite effective. However, since credit can also be obtained from other financial institutions, whose operations are not subject to quantitative control by the central bank, the efficacy of restrictive monetary policy is seriously reduced" (38).

This implies that "switching", by financial institutions, can, by activating balances hitherto held idle, increase the observed income velocity of money. As Aschheim puts it;

> "This, ... is regarded as a large scale sabotage by means of an increased velocity of circulation of the unexpanded supply of money. The remedy for this state of affairs is held to be direct control of velocity through quantitative regulation of other financial institutions as well as of commercial banks" (39).

In rebuttal of these arguments Aschheim puts forward two propositions. The first, contained in a passage quoted *in extenso* in an earlier section (40), asserts that, because of the existence of a large government debt, all financial institutions are sensitive to the consequences of open market operations. This, it seems to me, is not a satisfactory answer for it assumes precisely what Aschheim should be concerned to show, namely, that in practice, open market operations do have in sufficient measure the result he claims for them.

His second argument is that "Any inflationary rise in velocity can be offset by a further reduction in the quantity of money" (41).

(38) Aschheim, p. 130.
(39) Aschheim, *loc. cit.*
(40) Aschheim, p. 131, quoted on p. 5-6 of this paper.
(41) Aschheim, p. 132.

This again is hardly convincing since it is not, in any useful sense, concerned with economics but with algebra.

The first issue, the efficacy of open market operations, turns upon a number of points regarding which Aschheim does not present any evidence. A rough list of these would be as follows:

(a) How much does the availability of funds from non-bank financial institutions fluctuate over the cycle?

(b) Which institutions or groups of institutions contribute most to any observed fluctuations?

(c) How far do such fluctuations seriously impair the contra-cyclical capacity of monetary policy?

(d) if the answer to (c) is "significantly", what reasons are there to suppose that even selective open market operations would sufficiently reduce them?

Favourable (to open market operations) answers to these questions cannot safely be inferred merely from the existence of a large marketable government debt.

The second proposition, the feasibility of velocity "offsetting", equally requires investigation. As Aschheim points out (citing Smith) "offsetting" increases in velocity may, in the short-run, require changes in the money supply so drastic as to bring about a collapse in business confidence (42). Equally in the longer-run, if often utilised, they may encourage a secular decline in the importance of banks (43). It therefore becomes important to know just how much "offsetting" is likely to be required? We do not know and Aschheim does not enlighten us.

Quite correctly Aschheim argues that rejection of the policy of offsetting "would be warranted if it were shown that measures for the direct regulation of velocity were not only feasible but also free of the menace to business expectations which the policy of 'offsetting' may entail" (44). But this argument is reversible. There is no *presumption* in favour of "offsetting". Nor is there any *presumption* in favour of extended controls over availability. The decision must turn on the evidence and, as Aschheim would

(42) W. L. Smith, "On the Effectiveness of Monetary Policy", *American Economic Review* (September 1956).
(43) On this point Australian experience is again relevant.
(44) Aschheim, p. 132.

agree, the evidence may warrant different conclusions in different institutional environments.

It is my view that these controversies regarding anti-cyclical monetary policy have now reached the stage at which rather general and mainly qualitative discussions show small and rapidly diminishing marginal returns. What is needed, to quote the Radcliffe Committee, is "greater effort to quantify the effects of monetary and other economic measures and to overcome the formidable theoretical and practical obstacles that stand in the way of precise assessment" (45).

It would, of course, be unfair to criticize Aschheim for failing to provide the "precise assessment" asked for by the Radcliffe Committee. It does, however, seem a legitimate criticism of this part of his work that he does not specify the type of evidence from which he himself, or other investigators, might hope to reach useful conclusions about the short-run problem. Certainly in the absence of such evidence it cannot be maintained that Aschheim has by his critique in any way weakened the force of the Gurley-Shaw analysis. What he has done is to put forward an opposed view. The crucial issue remains open.

7. Conclusions

Within his chosen terms of reference, Professor Aschheim has written a stimulating and interesting book which both deserves and repays careful study.

Structurally the book consists of a number of separate essays designed to give an account of the relative efficiencies of different central banking techniques. Not all of these essays have been mentioned in this review (46). Only two or three have received any extensive attention. This paper therefore in no sense offers a full appreciation of Aschheim's work. This was not its purpose. Rather in it I have sought to place emphasis on Aschheim's fundamental position on technical issues and, in particular, to draw attention to what I believe to be those foundations of that position which need further examination.

(45) *Radcliffe Report*, para. 474.

(46) This review has largely ignored chapters 4, 5, 6 and 8 in Aschheim's study. These discuss such issues as the "Bills Only" Doctrine (Chapter 4); Bank Rate, Rediscount Rate and other Interest Rates (Chapter 5); Moral Suasion (Chapter 6); and the Control of Time Deposits (Chapter 8).

The first of these, as I see it, arises because Aschheim's attitude to the basic problem of the existence of a large and marketable debt contains a latent contradiction. At many points in his work he admits, indeed emphasizes, that the existence of such a debt and the market development which accompanies it, facilitates "switching". This, as we have noted, increases the potential cyclical elasticity of the availability of institutional funds to the private sector. Nevertheless in some way, never to my mind sufficiently clearly explained, his judgment is that the very size — and marketability — of the debt facilitates central banking control. It is from this that his uncompromising assessment of the efficacy of open market operations is derived. This latent contradiction is never resolved at the theoretical level.

The second weakness is that it is not resolved at the empirical level. Though Aschheim presents a good deal of empirical evidence he presents very little which is relevant to this crucial issue. It should be possible to provide evidence regarding the extent to which the availability of finance from institutional sources fluctuates over the cycle. It should also be possible to identify the cyclical contribution of the main groups of financial institutions. Such evidence would provide a rough measure of the problem. The next step would be to provide some estimate of the capacity of open market operations to control cyclical fluctuations. Admittedly to ask for this is to ask for a great deal. But without it, it is not possible to accept with confidence Aschheim's judgment on open market operations particularly since so many authorities show the scepticism of the Radcliffe Committee on precisely this issue. We need to know, in quantitative terms, a great deal more about the behaviour of financial institutions before we can form reliable judgments. Aschheim does not provide this. Nor does he provide any evidence relating to the impact upon borrowers of restrictive open market operations which would be an alternative approach. His high valuation of open market techniques is therefore open to dispute.

Moreover, as a general proposition rather than a proposition relating specifically to the U.S. economy, Aschheim's high valuation

of open market operations is essentially relative (47). He gives, for example, interesting but in my view inconclusive arguments for judging them to be superior to variations in reserve requirements. It is, however, entirely possible that neither of these techniques is much use. Cars may run better on paraffin than water. But they do not run efficiently for most purposes on either. Paraffin is better placed than water on the scale of inefficiency but we do not, for that reason, recommend it. Sensibly enough we prefer petrol and in many institutional environments, though possibly not in the U.S.A., effective anti-cyclical monetary control may require the petrol of unorthodoxy. Whether in these circumstances we would be better advised to abandon high expectations for anti-cyclical monetary policy is a separate issue. But it is surely significant that the Radcliffe Committee took a cautious view and accepted that monetary measures would not in ordinary times play other than a subordinate part in guiding the development of the economy.

In addition it seems to me something of a pity that Aschheim, in accordance with his chosen terms of reference, confines his analysis so strictly to technical issues. As a result he nowhere makes clear the size of the contribution to cyclical stabilisation he expects monetary policy to make. Moreover, since the tone of his book, technically, is optimistic, there is a suspicion (perhaps unjustified) that he may identify technical efficiency with economic efficiency. At one point, for example, he writes that " It is widely acknowledged that with respect to flexibility in adjustment to changing circumstances, monetary policy is superior to fiscal policy " (48). This is a familiar proposition for which evidence is rarely presented and might in fact be rather hard to find. If what is asserted is that the impact of monetary measures on *aggregate demand* is more readily reversible than the impact of fiscal measures, the proposition is probably not correct and is at best dubious. If on the other hand all that is asserted is that the direction of open market operations is more readily reversible than (say) the direction of tax changes, the proposition, though probably correct, is of doubtful economic importance. That Aschheim should repeat this statement without either defining " flexibility " or providing some empirical evidence is disquieting (49). A more explicit statement of his view of the

(47) Aschheim, of course, restricts his arguments to the U.S.A.
(48) Aschheim, p. 48.
(49) I plead guilty to use of the " flexibility " dogma myself.

role of monetary policy might have made it clear that technical and economic efficiencies were distinguished.

Finally, let me say that though, in this article, I have spent much time on criticism, this is because of the stimulating qualities of Aschheim's study. Only works which bring important issues into sharper focus demand extensive criticism. Sadly few do this. Professor Aschheim's study does: and does it in a clear, informative and thoughtful way. It is a book which deserves to be read. But it does not, at least in my judgment, constitute a convincing defence of monetary " orthodoxy ".

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