

Monetary Control: Detailed Arrangements
Consequent on the Publication of the Green
Paper 1980

File FEU/2/6/09

PART 6

30/4/1980 – 8/10/1980

Pages 96-116

the authorities need to sell to maintain control, and there would come a point when so much debt had to be sold that it was just not feasible to control the case at all. Moreover, it is clearly undesirable to compel the banks to hold so much of their balance sheet in risk-free interest-bearing base assets that it dominates or encroaches on their proper business of conducting commercial transactions.

28. Where to strike the balance between these second and third points is a matter of judgement. A ratio of 5-10 per cent might be sufficient high to prevent gross distortion due to Exchequer fluctuations, especially if the base were averaged for the calculation. At the same time, such a ratio might give sufficient leverage for satisfactory power to be generated, by feasible changes in the base. The proposals of the illustrative scheme thus incorporate an 8 per cent base asset requirement. Interest would be paid on this base in view of the first consideration above.

29. One further point which needs to be borne in mind is the problem of finding income to finance the operations of the Bank of England. Currently, the clearing banks have to maintain interest-free balances with the Bank of England from which the latter is able to generate the necessary amount of income. But this issue is separate from that of monetary control and quite different considerations apply. It will be necessary to reconsider this matter after the decisions on control have been taken.

(c) What Liabilities are to be Included in the Scope of the Control?

30. To a large extent, the choice of monetary aggregate will pre-determine the range of bank liabilities which have to be subject to control. Many issues will bear on this choice and will be of a much wider macroeconomic nature than would stem from the method of control alone.

31. Nevertheless, it remains true that mandatory monetary base control would be more suited to the control of some aggregates than others. In the section above dealing with how mandatory control would work, it was suggested that control would only have achieved its aim, if the banks were unable to relieve base asset pressure entirely or predominantly by disintermediation having no genuine monetary consequence for the economy. Within the range of their deposit liabilities, it is

primarily with wholesale deposits and certificates of deposit that the banks would have most scope to react in this way. Experience of the corset has shown that there are close substitutes for those items which do not appear in banks' books at all. On the other hand, the scope for disintermediation of retail deposits is much less.

32. For this reason, the illustrative scheme proposes to exclude CDs and wholesale deposits from control. This would mean reinstating a monetary aggregate very close to that which used to be known as M2; it is certainly no coincidence that Gordon Pepper, one of the most forceful advocates of monetary base control in the UK, has also been strongly urging an M2 target.

33. For the purposes of control, it would be necessary to define wholesale deposits more strictly than the bankers' customary usage. There are three broad possibilities:

- (i) by size;
- (ii) by original maturity; and
- (iii) by residual maturity.

All these options have advantages and drawbacks, but the first seems the most promising. Wholesale deposits would thus be defined as those in blocks of greater than, say, £50,000. This limit would have to be updated from time to time, perhaps annually. Some distortion might occur from use of this criterion since banks would have incentive to encourage their customers to amalgamate retail deposits into wholesale blocks. On the other hand, the scope for this is thought to be limited. By contrast, definition of wholesale deposits by original maturity would present greater problems. Suppose, for example, a retail deposit was defined as one payable on notice of seven days or less. At times of base asset pressure, banks would merely have to induce their customers to hold deposits payable on notice of 8 days in order to have a large part of their retail deposits re-classified outside the scope of the control. Definition by residual maturity would surmount this particular problem, but in the process largely undermine the case for a monetary target at all. If retail deposits were defined as those bank deposits due to be encashed in 'n' days' time or less, there would be no logical reason for not including all financial instruments due to be encashed over the same in the target aggregate. This would have to include a substantial part of outstanding Treasury Bills and commercial paper as well as, for example, maturing gilts and life

assurance policies. For these reasons, definition of retail and wholesale deposits by size seem, at this stage, the most practical possibility. But this is an area where further work and consultation is needed.

34. It is also proposed that retail sterling deposits made by overseas residents should be included in the qualifying liabilities, to the extent that there are any. Such holdings in retail sizes are more likely to be used for transactions in goods and services which will affect the price level than for speculative purposes which will not. It is therefore correct to include them in the control. On the other hand, all foreign currency deposits would be excluded as at present, though in any case there are likely to be very few such accounts of retail size.

35. Qualifying liabilities would thus consist of all banks' sterling deposits of less than, say, £50,000. One helpful consequence of this definition is that the difference between qualifying liabilities and the banks' contribution to M2 would be small. This is in contrast to the present situation where eligible liabilities and the banks' contribution to M2 can move over short periods somewhat differently.

(d) On What Accounting Basis is the Ratio to be Measured?

36. The point of a mandatory control system is to ensure that the banks observe a minimum base to deposits ratio. Two questions arise in the calculation of this ratio:-

- (i) How often does it need to be calculated; and
- (ii) What period for the base and qualifying liabilities is to be used in calculating the ratio?

37. In principle, the answer to the first question is as often as possible since this reduces the opportunities for window-dressing by the banks on ratio calculation day. Indeed, since the base consists only of bankers' balances, the authorities do know the base asset position of each bank each day. But banks currently report their liabilities only once a month and so the ratio cannot be calculated more frequently than this. The proposals of the illustrative scheme accordingly allow for monthly calculation of the ratio.

38. Calculation of the ratio could be performed in three different ways: lagged accounting - this period's base divided by last make-up day's qualifying liabilities; current accounting - base on make-up divided by qualifying liabilities on the same day; lead accounting - last period's base divided by this make-up day's qualifying liabilities. Previous discussion has suggested the desirability of taking the base measure as the average over a period in order to smooth out unintended fluctuations. This consideration alone rules out current accounting, leaving lagged and lead accounting as contenders.

39. In the illustrative scheme, it is proposed that lagged accounting be used, in order to minimize the incentive to disintermediation. Any mandatory scheme of control must involve some such incentive but the problem would be particularly acute with lead accounting.

Given its base asset position over the previous month, an individual bank would know on make-up day precisely what amount of qualifying liabilities it had to remove from its books in order to meet the prescribed ratio. This would be a very direct incentive to disintermediation and would certainly cause marked distortions on make-up day. Under lagged accounting, banks would still have some reason to reduce their declared liabilities at any make-up day. But the incentive would be less direct and hence less powerful.

40. While accepting the need for base averaging over a period, it would not be desirable under lagged accounting to take the base position as the average over the next full banking month. Banks would find it profitable to hold no base in the first part of the period and then to borrow large amounts of base at lender of last resort rates on the last day in order to meet the requirement. This would create gross distortions. To avoid this, it is proposed in the illustrative scheme that the numerator of the required ratio^{b₂} defined as the minimum of the 4 or 5 weekly average holdings of base assets over the relevant banking month. In this way, the incentive to the banks to borrow all the base requirement at the last moment would be reduced while the benefits of averaging would be retained.

(e) What Penalties Should be Applied to the Banks for Breach of the Mandatory Ratio Requirement?

41. Penalties have no role in the illustrative scheme other than to enforce the minimal base asset ratio requirement. They are not intended to add flexibility to the scheme since this role is played by the lender of last resort facility, which acts as the safety valve. Consequently, penalties must be prohibitive in order to prevent the banks ever having advantage in breaching the requirements.

42. One possibility is to have no formal penalties but to rely on banks' fear of Bank of England displeasure to prevent breaches occurring. This is the way in which the existing 12½ per cent reserve asset ratio requirement is operated and it has been well observed. But, at the same time, little reserve asset pressure has been applied since 1973 and the Bank of England are not sure that the ratio would continue to be observed if continuous pressure were applied. It would therefore seem necessary to have a system of formal financial penalties for breaches in order to protect the base asset ratio requirement. The exact form would be for consultation with the banks but the principle of their prohibitive nature would not.

(v) Institutional Changes Consequential on Mandatory Control

43. It must be clearly recognised that any scheme of mandatory monetary base control would involve considerable upheaval amongst financial institutions. It could be some time before the ramifications of the change were complete. The proposals of the illustrative scheme would not cause any more institutional mutation than is absolutely necessary but their introduction could certainly involve some disruption. On the other hand, not all of the changes would be necessarily unwelcome.

44. It is possible to identify seven main areas where monetary base control would imply some significant changes:-

- (i) the discount market;
- (ii) the gilts market;
- (iii) central government financing arrangements;
- (iv) local authority financing arrangements;
- (v) the lending operations of the banks;
- (vi) the building societies;
- (vii) prudential control of the banks.

(i) The discount market: It is in this market that base control would imply the most significant changes. Currently, discount houses play two key roles in the interaction of the banking system and the Bank of England. First, in consortium the 13 houses undertake to tender for all available Treasury Bill at some price, at the weekly auction. In this sense, they guarantee that the residual financing needs of the Government can always be met. As an overt quid pro quo, the discount

market always has access to lending from the Bank of England at MLR. By use of this facility and on-lending this borrowed to banks, the discount market always ensures that the banking system has the cash available that it needs in order to meet its requirements to the Bank of England and for its own commercial needs. Both the authorities and the banks have found this arrangement convenient.

Monetary base control would entail that this arrangement had to cease. The Bank of England would not lend to the market except in exceptional circumstances when it was acting as genuine lender of last resort. It could not act as day-to-day lender as at present because the banks could always borrow in order to increase their balances at the Bank of England and thus their base assets. Consequently, the discount houses have no daily role under base control. Since it is their daily operations which make their profits while their weekly Treasury Bill tender is an offsetting obligation, the historic nature of their business would no longer be viable.

On the other hand, it is difficult to believe that the personnel of the discount houses would become unemployed. Discount market operators are almost the most experienced and versatile of money market operators. There would have, in any case, to be further changes in central government financing arrangements following monetary base control (see (iii) below). This would generate new business and the discount houses would certainly capture a large share of this. Moreover, the scheme allows for a transitional period while the lender of last resort function was evolving from its present to its new role. By announcing this transitional period in advance, the discount houses would be put on notice that the nature of their business would have to change.

- (ii) Gilts Sales: It was noted in the main paper (paragraph 72) that the Bank's technique for selling gilts involves manipulating short-term interest rates in order to offset expectations about long-term rates.

Under monetary base control, this method would no longer be viable. Adoption of base control would imply that the authorities lost control of short rates of interest. The essence of the system is that the authorities gain control of quantities (the base and hence the target aggregate) but lose direct control of the price (short-run interest rates). These would therefore no longer be available to the Bank for the purpose of influencing expectations. Other methods of selling gilts would thus clearly be necessary.

At the same time, adoption of the new system would partially ease the authorities' problem. Under current control techniques, precision is required in selling gilts to the non-bank private sector. While the authorities might hope to control the total of gilt sales, they cannot tell who is going to buy them. Base control requires control only of total sales: it does not matter who buys them.

(iii) Central Government Finance: At least three changes would be entailed by monetary base control. First, denial of the discount houses of their access to borrowing from the Bank of England means that they would not be prepared to cover the weekly Treasury Bill tender. Since, however, the Government is always able to borrow its residual finance from some source at some price, the cost would be greater variability of interest rates, not a loss of control. Secondly, base control would be expected to work better if fluctuations in the path of the CGBR can be reduced below their current amplitude. Fluctuations already present some problems for monetary control but these would be much accentuated under base control since the fluctuations would feed directly onto the base, itself the key control instrument. Work is already in hand to see if this nuisance can be reduced to smaller proportions.

Thirdly, control of the base requires precise sales of public sector debt - to a greater extent than seems to be possible currently. It is hard to believe that, with any techniques gilts could be sold with sufficient short-term quantitative accuracy to meet the requirement. For this reason, a greater proportion of Government financing would have to be carried

out by means of short-term paper which could be sold more flexibly than gilts. This could be either by way of traditional 91-day Treasury Bills or perhaps by somewhat longer instruments. Markets would have to be created for this new financing, but the City should be sufficiently adaptable to do this. In particular, it is probable that the discount houses, displaced from their traditional functions, would play a key role in making and widening the markets in these new instruments.

- (iv) Local Authority Finance: Currently, about a third of total local authority market borrowing is in the form of temporary debt of less than one year maturity. About a quarter is of less than 3 months maturity. Under monetary base control, it is difficult to see that local authorities could raise substantial finance in this form. First, the greater fluctuations in short rates expected from control of the base would make this an uncertain segment of the maturity spectrum in which to operate. Second, the local authorities would have to compete with the increased volume of central government debt which would have to be sold to control the base, making such borrowing expensive. Both factors would tend to shift the local authorities into longer-term borrowing or to borrowing from the National Investment and Loans Office, rather than the market. Neither development would be unwelcome.
- (v) Banks' Lending Operations: Banks' operations in general would undergo major changes on implementation of base control. The changes have been described at length in earlier sections. But it is worth drawing attention to the changes which would probably occur in the terms on which they made advances to the private sector. First, banks would need greater control over their lending than they have at present. They might therefore reduce advances made on overdraft arrangements, replacing these by term loans or, alternatively charge overdraft commitment fees. This would be particularly true for existing large industrial customers where banks already feel that overdraft facilities are provided too

cheaply. Personal overdrafts would be less affected since these are highly profitable for the banks. The main effect would thus be the loss of some flexibility in the provision of industrial finance. Second, banks' base rates would certainly become more volatile. Some bankers have suggested that there might be a move to a system close to that currently practised by the finance houses. Base rates would then be announced anew each week and probably related by formula to market conditions.

(vi) Building Societies: To a greater extent than for the local authorities, the greater interest rate fluctuations possible under base control would present a major problem for the building societies. These institutions have engaged traditionally in quite the most remarkable maturity transformation in the British financial system. While the bulk of their liabilities are encashable on demand, the average initial maturity of their assets approaches 20 years. While a large proportion of their stock of liabilities comes from small personal savings which are unlikely to be very interest-sensitive, nevertheless rate fluctuations can cause severe variations in their net inflows. Three possibilities are:

(a) that share and mortgage rates would be charged more frequently and by greater amounts than at present, in order to maintain stable inflows. New borrowers would be most affected; although they could be partially protected by arrangements to fix repayments in the critical mortgage period, or to limit the number of rate changes in each period passed on to existing mortgagors.

(b) that societies would maintain greater liquidity on average to insulate mortgage lending from greater variation in inflows.

(c) that societies would increasingly borrow at longer maturity. They already issue variable rate term shares of up to five years' maturity, and they could develop further this method of attracting funds from persons. They could also borrow from institutions, but probably on fixed rate terms which would necessitate introducing matching fixed rate mortgages.

Development (b) would restrict the supply of mortgage funds while societies built up their liquidity. Development (c) could avoid extra mortgage rationing, but it would imply dearer mortgages at the margin. Development (a) would create most problems and hardship for existing mortgage holders, because it would raise the cost of borrowing on all building society deposits.

(vii) Prudential Control of the Banks: Earlier in the year the Bank of England published a consultative document outlining new proposals for prudential control of the banking system. Essentially, the proposals were that banks should hold certain amounts of (primary and secondary) liquidity; and of total liquidity cover, a fixed proportion should be in primary liquidity. Primary liquidity consists of assets held by the banks which the banking system as a whole could always turn into cash if required, because the Bank of England is prepared to rediscount them. Secondary liquidity comprises assets which individual banks could always regard as liquid but which the banking system as a whole could not rely on encasing. Requirements for the total liquidity holding would be determined by the size and maturity of each bank's net liabilities and the nature of its business.

Under monetary base control, a prudential system in terms of primary liquidity would not be possible. Currently, because of the Bank of England's everyday readiness to act as lender of last resort, assets against which they will lend, such as Treasury Bills, local authority bills or fine commercial paper, count as primary liquidity, as well as base assets. With base control, the Bank would only act as lender of last resort in exceptional circumstances and only the base could count as primary liquidity. Under a mandatory base control system, the prescribed base assets/qualifying liabilities ratio already determines required holdings of base and thus primary liquidity. There is no place for any further prudential relationship based on primary liquidity since this would over-determine the system.

These considerations do not mean that no prudential control is possible. In particular controls in terms of either secondary liquidity or total liquidity (ie. primary plus secondary) would still be possible. But it does mean that the Bank's current proposals would all have to be re-examined.

(vi) Potential for Transition to a Non-Mandatory System

45. The illustrative scheme outlined in this Appendix is designed to function as a permanent mandatory scheme of control. If desired, however at a later stage, the system could be transformed to one of non-mandatory base control. It should be recognised immediately, however, that just as imposition of mandatory base control will necessarily involve some financial upheaval, so the transition to a non-mandatory system would be fraught with uncertainty.

46. Non-mandatory base control relies upon the base asset ratio the banks would want to hold voluntarily for their own commercial reasons, to act as the fulcrum for monetary control. Basically, the problem of the transition is that before operation of the scheme no one - including the banks - can know what the ratio would be. Current experience is no guide because the ready provision of lender of last resort finance means the banks have no real need for base at all.

Moreover, while this facility would be withdrawn under mandatory base control, there would still be no evidence as to the banks' autonomous demand for the base since the mandatory ratio itself would determine the observed amount. There would indeed be excess reserve holdings under such a scheme, but again these would be no guide to non-mandatory behaviour since they would stem entirely from fear of the prohibitive penalties protecting the mandatory ratio.

47. There is no clear way round these problems. Only experience of the operation of a pure non-mandatory scheme can give true guidance as to the banks' voluntary base asset ratio. Nevertheless, it may be possible to do better than jumping abruptly to a non-mandatory regime.

48. In the illustrative scheme, it is proposed that banks hold a compulsory base asset ratio of 8 per cent. Over time the size of this ratio could be reduced step by step towards zero. At the same time, the severity of the penalties protecting the requirement could be reduced. Eventually, the requirement would disappear and the system would then become a non-mandatory one. Over time the observed base assets ratio would become more influenced by the banks' own demand and increasingly less by the effects of the mandatory ratio. In this way, the authorities would acquire an increasing stock of evidence as to the banks' voluntary base behaviour, before the regime became entirely non-mandatory, and thus learn to operate accordingly.

49. There is no denying that this transitional phase would be one of great uncertainty for the authorities. They would not know, over a prolonged period, whether they were operating on the base correctly and what the effects of policy would be. But, having established a mandatory system of control, there is only one alternative to this transitional phase. That would be to switch directly to a non-mandatory scheme and the uncertainty created by such an abrupt step could be many times greater.

MONETARY CONTROL IN THE UNITED STATES

The American experience with monetary control offers a number of interesting analogies for the United Kingdom. The Americans have long imposed mandatory reserve ratios on banks, and have recently increased the emphasis which they put on movements of reserves as a guide to the movements of their target aggregates. Unlike the Swiss, they have never had public targets for bank reserves, on the monetary base, as such, but the authorities use movements in reserves as an internal determinant of their open market operations.

2. This annex outlines:-

- i. The regulatory background in the United States;
- ii. The Americans' experiment with reserve targeting between 1972 and 1976;
- iii. The targeting procedures introduced in October 1979;
- iv. The record since then;
- v. The value of reserves as an indicator over the 1970s as a whole; and
- vi. Some examples of the distortions introduced by mandatory reserve requirements.

Finally, it offers some tentative conclusions on the implications for the UK.

Background

3. Banks in the United States are required to observe reserve ratios which differ from those in the UK in two main respects. Firstly, different ratios apply to deposits of different size and maturity. More importantly, reserves are defined only as bankers' balances and till money ^{holdings} :/of assets

such as Treasury bills do not count towards the required ratios.

4. For the principal US banks, bankers' balances mean balances with their district Federal Reserve Banks. These balances earn no interest. Banks with excess reserves lend to banks with deficient reserves through an inter-bank market in "federal funds" - that is, in bankers' balances with the district Feds. The interest rate on federal funds is a key short-term rate.

5. The discount rate at which banks may borrow from the Fed is administered, like MLR, and is not closely tied to the federal funds rate. Use of the discount window is rationed less by price than by stinginess : it offers only short-term credit, and often has strings attached.

6. Throughout the 1970s, the Fed has described itself as pursuing more of a money supply than an interest rate policy. It has defined its objectives in terms of targets for a number of monetary aggregates, and this has remained unchanged through several variations in tactical control techniques, and several redefinitions of the aggregates. The Fed has used the growth of reserves and the federal funds rate as early indicators of changes in the aggregates. It has also relied on these indicators to determine its open market operations from week to week. The practical question has been whether the growth of reserves or the change in the federal funds rate provides the better indicator of monetary conditions, and the better determinant of open market interventions. The Fed would be the first to admit that neither is reliable. The changes there have been in operating tactics have essentially been changes in the weights put on the two in the directions given to the Fed's open market manager.

Reserve targeting between 1972 and 1976

7. The manager was first given targets for the growth of bank reserves, as an experiment, in early 1972. The Fed's Open Market Committee specified a tolerance range for a two month period. If growth exceeded the top of the range, the manager was to reduce the provision of reserves, which tended to push up the Fed funds rate or to force banks to make more use of the discount window. The manager was also asked to keep the Fed funds rate within a

certain range. If the objectives for reserves and for interest rates proved incompatible, he was to return to the Committee for further instructions.

8. Difficulties soon became apparent. The lag between open market action to regulate reserves and the effect on bank deposits was measured in months - beyond the horizon of the tolerance ranges. Moreover, the relationship between reserves and the main monetary aggregates proved extremely hard to predict. Movements in reserves were difficult to interpret, even as approximate indicators. Reserve targets were dropped in 1976.

Reserve targeting since October 1979

9. They were reintroduced (in slightly different technical form) as part of the package of monetary measures on 6 October 1979. The Fed announced that it would place "greater emphasis in day-to-day operations on the supply of bank reserves and less emphasis on confining short-term fluctuations in the federal funds rate". The change has consistently been presented as one of emphasis, but not, this time, as an experiment. Targets for the main monetary aggregates are again translated into weekly targets for reserves, and open market operations then aim to add or drain reserves as necessary.

10. The Fed funds rate is allowed to fluctuate freely within a wide band. This was initially set at four percentage points, then widened, and then narrowed again. At its maximum, in March, it reached seven percentage points. Only if the Fed funds rate comes up against the limit of the band does the open market manager have to ask for supplementary instructions. Moreover, the interest rate constraint applies only to a week's average : on individual days, rates may go beyond the band. The current policy thus allows more strain to be borne by interest rates than was the case between 1972 and 1976, when the permitted variation in the Fed funds rate was only $1-1\frac{1}{2}\%$.

11. The Fed has been at pains to acknowledge that the link between reserves and the target monetary aggregates is "complicated and variable", changing "with shifts in the currency and deposit mix, with changes in bank demands for excess reserves and borrowing, and with timing problems related to lagged reserve accounting". Indeed, the Fed's evidence to the Treasury and Civil Service Committee, from which these quotations are taken, makes it clear that ^{umpteenth} / assumptions have to be made to derive the reserve target. Each is a matter of judgement, and subject to a large margin of error. ^{practice,} the reserve target has been only the most In/short term of intermediate objectives, adjusted almost on a weekly basis in the light of outturns for the monetary aggregates.

The Fed's record since October 1979

12. Since October, the growth of the monetary aggregates has not, on average, been too far out of line with the Fed's intentions. But the picture has been very confused for at least three reasons.

13. First, the Americans have four different monetary targets - for M1A, M1B, M2 and M3. At different times over the past year, they have been hitting one or two but missing the others - and it is never easy to know what weight to attach to which target.

14. Second, their use of reserve targeting has been clouded by the imposition and then the removal of supplementary credit controls. The package which introduced reserve targeting in October was supplemented by another to impose direct credit controls in March. Only then did interest rates go to their peaks - the prime business loan rate hitting 20% in April. By coincidence, this was also when the recession began to take effect, causing the demand for money and credit to fall, and interest rates to come down rapidly. Credit controls were withdrawn in July.

15. Third, monetary policy in American, as here, has been beset with vast numbers of uncertainties. Quite apart from the real shocks to the system, the institutional structure has been changing rapidly. There has, for example, been a fast expansion of interest-bearing chequing accounts in banks and savings and loans, an explosion and then a contraction of "money market funds" outside the established financial intermediaries, and a growth of innumerable

other devices to get round Regulation Q (which limited the interest rate which banks and savings and loans could pay on savings accounts). The monetary aggregates have had to be redefined more than once on this account. The public's preferences seem also to have been extraordinarily volatile, with the demand for transactions balances falling more sharply in mid-year than previous relationships would have suggested. (This may have been partly the result of credit controls, as people ran down their cash balances instead of using credit). The outlook is now so uncertain that the Fed has been reluctant to roll forward its quantitative targets into 1981, and has only done so under considerable pressure from Congress.

16. It would be wrong to blame all these uncertainties on the Fed's change in operating techniques. But whatever its other merits may have been, it is clear that the increased emphasis on reserve targeting has by no means yielded a smooth path for the target monetary aggregates. The attached table shows that M1A and M1B actually fell in the second quarter of the year. That has been sharply reversed in the third quarter, in which M1A has been expanding at about **twice** the upper target rate of 6% a year.

17. Moreover, the month-to-month changes have been still more volatile. The table also shows that, at the "annual rate" in which American statistics are usually given, the growth of M1A has bounced around from -17.7% in April to +11.4% in June. The estimate for August is +18%. M1B varied between -14.1% in April and +14.9% in June. Nor is the relation between the monetary aggregates (lines 5-9) and the various measures of reserves (lines 1-4) immediately apparent to the naked eye.

18. The swings in the monetary aggregates have not come about because interest rates have been sticky. On the contrary, the bottom lines of the table show that, even in terms of monthly averages, the Fed funds rate has varied between 9% and over 17 $\frac{1}{2}$ % in the space of only four months. At the moment, it is again climbing sharply, and the President and his Treasury Secretary are publicly criticising the Fed on that account.

19. In short, the American experience since last October has been characterized by quite remarkable volatility in both the price and the quantity of money. This is ^{illustrated} in charts 1 and 2. It would be wrong to conclude that reserve targeting has caused this bumpiness - but it has certainly not been able to prevent it. The American record at meeting money supply targets averaged over time may, at present, be slightly better than the British one. But their record at meeting targets smoothly, or even predictably, month by month has certainly been no better than ours. Nor are the Americans better able than we are to interpret the statistics with any confidence.

The value of reserves as an indicator

20. Taking a slightly longer perspective, chart 3 illustrates the point that the movement of reserves has not, in any case, been a terribly reliable guide to the movement of the target monetary aggregates. Chart 4 suggests that it has been an indicator, of sorts, of the change in the price level - but no better an indicator than, say, the movement of M1.

Mandatory requirements as a distortion

21. In a similar perspective, the mandatory basis of the Americans' control has helped to bring about the sorts of financial distortion which we think a mandatory system of monetary base control would produce in this country. Because the authorities have imposed requirements which the banks would not observe of their own accord, the banks have had a continuing incentive to get round them; because the required reserves have not borne interest, that incentive has been intensified; and because the requirements have applied more to banks than to other financial institutions, other institutions have been helped to compete business away from the banks.

22. One way in which the banks have responded has been to push business offshore. The Carribbean branches of US banks have liabilities of over \$ 20 billion to US residents, and their business is often run directly from New York. (\$20 billion is equivalent to about 6% of M1, 1-2% of M2). Banks have also been adept at moving funds to and from their overseas

branches as a way of reducing the average liabilities against which they have to hold reserves. Indeed the "weekend eurodollar game" has become a huge merry-go-round. In mid-1979, weekend avoidance transactions totalled \$20 billion each Friday, and seven banks were using them to such an extent that they were reducing their net deposits subject to reserve requirements by over 20%. These eurodollar transactions have drawn the Fed into a long and complicated series of regulatory moves, trying to balance a number of different objectives. They have also led the Fed to include certain eurodollar deposits in M2 and the wider monetary aggregates.

23. A second form of response has been the substantial growth in the commercial paper market, which has been broadly comparable in effect to the UK Bill leak. Again, the Fed has felt it necessary to intervene by asking companies to report transactions in this market.

24. A third has been the boom in intermediaries which were not subject to the existing reserve requirements: money market funds have been the most conspicuous example. Money market funds have both given people easy access to money market interest rates for their savings, and enabled them to write cheques on those savings. Congress has now decided that reserve requirements should be applied equally to all deposits which have essentially the same characteristics, regardless of the institutions in which they are held. The requirements will therefore apply to savings and loans as well as to banks, and also to newer kinds of intermediaries such as the money market funds. The imposition of mandatory requirements has thus had to be backed up by successive extensions of those requirements.

Conclusions

25. To sum up, the use of reserve targeting as an internal guide to the Fed's open market operations has not solved the problem of smoothing the growth of the money supply, or making it more predictable. Nor has it put clear rules in place of discretion, if only because the many assumptions needed to derive the weekly reserve targets are all a matter of judgement. The existing control techniques have had to be supplemented temporarily by credit controls, and permanently by an extension of reserve requirements.

In principle, reserve targeting has had the advantage that it has given more scope for short rates to be determined in the Fed funds market; and the authorities were lucky earlier this year in seeing the recession bring rates down rapidly from their 20% peak. But rates are now rising again, and the Fed has by no means been able to distance itself from this result, which is a matter of hot political contention.

26. Finally, in considering this from a UK perspective, it must be remembered not only that there is nothing quite like the Fed funds market here, but also that the gyrations there have been in interest rates have not had the same effects on mortgagors in the United States as they would have had in this country. When rates rose sharply in the spring, the supply of mortgages dried up, and savings and loans were put under considerable strain. But existing borrowers were protected (in the main) because American mortgages have traditionally been at fixed rates. In this country, variable rate mortgages are of course the norm, and something like a quarter of all households hold them.