13. Monetary Targets and Economic Policy

Control of Monetary Aggregates

13/2/1979

To Read

VV

Mr Middleton

cc Mrs Lomax
Mr Spencer
Mr Riley

FSWG

MONETARY POLICY AND THE ECONOMY

You have been asking me for some time for a note pointing up the remaining disagreements on the effects of monetary policy, after our meeting on 11 January. I am sorry for the delay.

2. I think that there are only three substantial areas of dispute but unfortunately they are all very important ones. Specifically, they are:

a. Can there be disequilibrium within the portfolio of financial wealth which can affect the real sector of the economy?

b. If the transmission mechanism is through interest rates and not through portfolio disequilibrium, then do we have any rationalisation for controlling any of the monetary aggregates?

c. Can £M3 be controlled by reference to the PSBR - M3 money supply identity while M1 may not?

3. These are separate issues and it will be convenient to deal with them in turn.

A How Does the Transmission Mechanism Work?

4. Mr Riley has sent me a sheet of algebra in which he summarises what he takes to be the difference between us. I append the sheet to this note. I am most grateful to him because I think it makes clear why he obtains a different result to me. In my original note of 3 January, I suggested that a key difference between the Keynesian and monetarist models was in where the gap in the asset substitutability spectrum lay. Keynesians tend to assert that the greatest gap occurs between financial assets on the one hand and real assets on the other: monetarists, by contrast, emphasize the gap between money and other financial assets as well as the financial/real gap.

5. Following on naturally from this, in my caricature of Keynesian

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models, the only wealth considered was financial wealth $\tilde{W}$ and the only assets bonds B and money M. We then had a demand for money function:

$$M^D = M^D(Y, \tilde{W}, i)$$

and noted that by Walras law:

$$B^D \equiv \tilde{W} - M^D$$

It is then easily shown that any disequilibrium in bonds is matched exactly by a disequilibrium in the opposite sense of money. Hence, if one market, the bond market, clears then the other necessarily clears.

6. But if we introduce a third asset, as real goods, K, into the system then this no longer applies. By Walras law, excess demands for all three assets must sum to zero but even if the bond market is cleared then there will still be offsetting excess demand and supply in the money and goods market.

7. Now, in fact, this last step I made of letting the bond market clear instantaneously, which was largely for purposes of illustration, was a false step giving rise to some confusion. For, in reply, Mr Riley asserted that while the bond market clears instantaneously the goods market is only cleared by the price level after a long delay. Consequently, in the intervening period, we are able to take the price level as fixed. You can see that Mr Riley has implicitly made this assumption in the appended note where he postulates that the government can control the stock of financial wealth via its control of the public sector deficit. It is true that the government can control the level of nominal financial wealth in this way but not the real value, which is what we are concerned with, unless the price level can be taken as fixed.

8. If, at the same time, output is fixed then the private sector may experience a shortage or excess of physical assets corresponding to which there will be an excess or shortage of financial wealth. Because by assumption the bond market is taken to clear instantaneously in effective terms, there can be no disequilibrium between money and bonds. The actual holdings of both money and bonds together may be different to the desired holdings because financial wealth as a whole is different to the desired level but there is no disequilibriu vis-a-vis each other. By making these assumptions, Mr Riley has effectively converted my three-asset model into a two-asset model.

Adjustment in the third asset, physical capital, is frozen out in the short run. We are then left to allocate constrained financial wealth between only two assets, the market for one of which is assumed to clear instantaneously. Hence we are back into the Keynesian paradigm where the money supply is always exactly what the private sector demands at the going interest rate.

9. Clearly the key assumptions in generating these results are the asserts that the bond market clears instantaneously and the goods market only slowly. A more general formulation would be to allow non-instantaneous adjustment in all 3 markets. We then have the general case of temporary disequilibrium in money, bonds and goods. This corresponds to my general equation (Biv):

$$\frac{X}{P} = X\left(\frac{W}{P}, r, Y, \frac{(M^D - M^S)}{P}, \frac{(K^D - K^S)}{P}, \frac{(B^D - B^S)}{P}\right)$$

with $X_1 > 0$; $X_2 < 0$; $X_3 > 0$; $X_4 < 0$; $X_5 > 0$; $X_6 < 0$

10. But why should we want to separate out excess demand for money from excess demand for bonds? Monetarists, I think, would suggest two reasons:

a. Excess demand for money is likely to be greater than excess demand for bonds in absolute terms if portfolio disequilibrium exists at all. This is because money has the role of acting as the temporary abode of purchasing power;

b. more importantly, the demand for money is likely to be more sharply defined than the demand for bonds or financial wealth as a whole. It can be related to a small number of easily identified macroeconomic variables whereas the demand for total financial wealth is likely to be much more complex, depending on life cycle considerations as well as uncertainty. Furthermore people's perceptions of their stock of money is likely to be sharper than their perception of their total wealth. I may have a rough idea of the state of my bank balance but probably a much less distinct knowledge of the value of my illiquid financial assets. After all, most of my bonds are likely to be held only indirectly via the medium of life assurance or pension funds.

11. Clearly these propositions are assertions which require empirical validation if they are to be held. But they are not

absurd from the outset.

12. But having established that the speed of adjustment of prices in the relevant markets is crucial, then we need to specify carefully what period of analysis we are concerned with. You may remember, at the meeting on the first papers, my criticizing both Mr Riley's analysis and my own for not doing so from the outset. In this connection, Mr Spencer's distinction between portfolio and market equilibrium is important. I think it corresponds closely to my distinction between dynamic and static disequilibrium. Static disequilibrium occurs when excess supply or demand for some quantity is permanent. Mr Spencer pours scorn on the idea that this kind of disequilibrium could possibly characterise the money market. But it is perfectly conceivable to have an economy where this would happen. First, in a country at full employment with price controls and where the government finances all of its deficit by money issue precisely this long run disequilibrium can occur. If each individual wishes to hold 1000 pesos but the government insists on giving him 1200 pesos then there is no way in which all individuals can achieve equilibrium in their money holdings. It is not that their bank managers are stopping them from using their current accounts but that as soon as one individual spends his excess balances (if he can find the goods to spend it on) someone else buys output from him and restores the excess money holding. Equilibrium will never obtain in these conditions until one of the assumptions breaks - presumably the price level will eventually be forced up by ⅙. Each individual will want to hold 1200 pesos at this price and there will be no pressure for subsequent movement.

13. Secondly, consider the same country but where the government now issues bonds to finance part of its deficit. It has a usury law to prevent interest rates rising above 10% per year which happens to be their current position. Initially, each individual has 1000 pesos, which is his preferred position, but the government insists on running a budget surplus while stubbornly refusing to redeem any bonds. Individuals therefore find themselves with only 800 pesos each. Each would like to sell bonds to restore the desired cash position but can find no buyers at the allowed interest rate. Just as in the previous case therefore we would have permanent disequilibrium until one of the assumptions of the situation is

broken. Either an effective black market in bonds would develop, driving the interest rate to its equilibrium - yielding level or the price level would fall or output would fall until each individual wanted to hold 800 pesos, that is, what he actually has.

14. But these illustrations of static disequilibrium, while useful in presenting the monetarist world-picture, are not normally strictly relevant to it. The transmission mechanism consists exactly of the way in which the economy adjusts to a new equilibrium. Consequently, the portfolio disequilibrium implicit in the monetarist case needs only to be dynamic, that is, it persists only while the .....

.... adjustment to long run equilibrium runs itself out. I have therefore very little quarrel with the system Mr Spencer outlined in his note addressed to yourself and to me of 22 January. To illustrate my point, let me modify his system somewhat by defining it for the private sector as a whole in a closed economy, subsuming away lending within the private sector. I shall also push it forward by one period and specifically separate out physical assets from bonds and money. We then have:

$$K_{t+1} = a_1 + b_1 Y_t + d_{11}(K^*_{t+1} - K_t) + d_{12}(B^*_{t+1} - B_t) + d_{13}(M^*_{t+1} - M_t)$$

$$B_{t+1} = a_2 + b_2 Y_t + d_{21}(K^*_{t+1} - K_t) + d_{22}(B^*_{t+1} - B_t) + d_{23}(M^*_{t+1} - M_t)$$

$$M_{t+1} = a_3 + b_3 Y_t + d_{31}(K^*_{t+1} - K_t) + d_{32}(B^*_{t+1} - B_t) + d_{33}(M^*_{t+1} - Mt)$$

$$CND_{t+1} = a_4 + b_4 Y_t + d_{41}(K^*_{t+1} - Kt) + d_{42}(B^*_{t+1} - B_t) + d_{43}(M^*_{t+1} - M_t)$$

Where

K, B, M = holdings of physical assets, bonds and money respectively
CND = consumption of non-durable goods
Y = income

Asterisks denote desired levels.

We also have a set of long run desired relationships for each asset which depend on relative interest rates, income wealth etc:

$$M^*_{t+1} = f(Y, rm, rk, rb, W, \ldots) \qquad f_{rb} < 0$$

$$B^*_{t+1} = g(Y, rm, rk, rb, W, \ldots) \qquad g_{rb} > 0$$

$$K^*_{t+1} = h(Y, rm, rk, rb, W, \ldots) \qquad h_{rb} < 0$$

Where

rm, rk, rb = expected rates of return on money, physical assets and bonds, respectively
W = total wealth

Assume that the portfolio is initially in full equilibrium so that:

$$K^*_t = K_{t-1}$$

$$B^*_t = B_{t-1}$$

$$M^*_t = M_{t-1}$$

15. Since these are the only three assets, total wealth and total financial wealth are also at their long run equilibrium levels. Now suppose, however, that the government redeems a part of the National Debt equal to ΔB, in return issuing money. Total financial wealth has not changed but the composition is different. In the process, since the supply of public sector debt has been reduced, its price rises and the interest rate, rb, falls. This reduces the long run demand for bonds B^*_{t+1} but there is no reason to suppose that this reduction will be equal to the fall in bonds actually held. This would only be the case if adjustment of long run desired levels of assets to interest rate changes were immediate. As a result of the open market operation, therefore, we now have:

$$M^*_{t+1} \neq M_t$$

and $$B^*_{t+1} \neq B_t$$

16. So far as non-durable expenditure is concerned, these two asset inequalities will be of opposite sense. Consequently the effect on non-durable expenditure depends on the size of coefficients d_{42} and d_{43}. This is an empirical matter which can be tested by the data. Monetarists would assert that monetary disequilibrium is more powerful than that in other assets so that they would expect d_{42} to be bigger than d_{43}. If by contrast, it is only the disequilibrium in total financial wealth which is relevant then d_{42} and d_{43} would be equal. The composition of the disequilibrium is not then important. Similar arguments apply to expenditure on physical assets. Notice that the pure Keynesian result is not ruled out by this model. The fall in interest rates following the redemption drives up the long run desired level of physical assets K^*_{t+1} and creates physical asset disequilibrium tending to raise actual investment in these assets. The strength of this effect is given by the size of h_{rb} on the one hand and d_{11} on the other. Again, this is an empirical matter.

17. Now this representation of the world is by no means unique: indeed, it would be a misunderstanding of the nature of a theory to suggest that any theory could have such a property. But it does constitute a very useful device for testing several interesting

hypotheses. In Mr Spencer's quite dreadful expression, it provides an "insightful way" of looking at the world. Moreover, it can beeasily modified to allow for the existence of overseas assets and thus to connect easily with a model of the balance of payments and the exchange rate. In one sense, the model is very restrictive since it implies, as written, a very special kind of dynamic adjustment. This can be put right easily enough by replacing the b and d parameters by functions of the lag operator. Theoretical implications of the model are not changed.

18. But the transmission mechanism implicit in this model is very close to my expression (biv), actually a special case of it. The only two differences are that my expression is taken as homogeneous in prices while Mr Spencer's system does not commit itself on this and that Mr Spencer has been much more careful in referring to the period to which his variable refers. I fully accept this second point as a criticism of my original exposition but I do not really think that there is any serious disagreement here.

19. All in all, therefore, I think Mr Spencer and I are in much closer agreement than appeared likely from the meeting of 11 January. Whether Mr Riley would be happy with this analysis I am not sure. But perhaps we can discuss this further.

B <u>If the Transmission Mechanism is Through Interest Rates, is There Ever a Case for Controlling the Money Supply Rather Than Interest Rates Direct?</u>

20. My original assertion - which I still believe to be largely correct - was that if the transmission mechanism is found to be purely through interest rates then we should act to control interest rates themselves, not the money supply, since we would then be operating in an unnecessarily inefficient manner. A number of arguments were raised against this position. Two which were most fully developed were:

a. Mr Riley's application of Poole's analysis;

b. Mr Spencer's argument that controlling the money supply activities is an automatic stabilised on the economy.

(i) <u>The Poole Model</u>

21. Poole's model starts by considering the IS and LM curves given,

respectively, by:

$$Y = a_o + a_1 r \qquad \text{(i)}$$

$$M = b_o + b_1 Y + b_2 r \qquad \text{(ii)}$$

Where

Y = output

r = the interest rate

M = the money supply

All variables are in real terms. He correctly observes that if (i) and (ii) were known with complete certainty, then it would not matter whether we chose M or r as the policy instrument since Y could be controlled exactly in either case. Suppose, however, they are known only with stochastic errors u and υ, with variance σ^2_u and σ^2_υ respectively. Then we have:

$$Y = a_o + a_1 r + u \qquad \text{(iii)}$$

$$M = b_o + b_1 Y = b_2 r + \upsilon \qquad \text{(iv)}$$

22. If we chose to operate on output by varying interest rates then (iii) would give us a direct relationship for so doing subject to variance σ^2_u. If we choose to operate by controlling the money supply, we need to work out the reduced form of (iii) and (iv) to obtain the money-income relationship. In fact, we have:

$$Y = \frac{a_o b_2 - a_1 b_o}{b_1 + b_2} + \left(\frac{a_1}{b_1 + b_2}\right) M - \left(\frac{a_1}{b_1 + b_2}\right) \upsilon + \left(\frac{b_2}{b_1 + b_2}\right) u \qquad \text{(v)}$$

Assuming that u and υ are uncorrelated*, then the variance associated with this relationship will be Ω where:

$$\Omega = \left(\frac{a_1}{b_1 + b_2}\right)^2 \sigma^2_\upsilon + \left(\frac{b_2}{b_1 + b_2}\right)^2 \sigma^2_u \qquad \text{(vi)}$$

23. This variance could therefore be less or greater than that

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* I could not think of any obvious reason why they should be correlated. If, however, they were, then offsetting errors in u and υ, would strengthen the case for controlling M while reinforcing errors would argue for controlling r. This will be indicated as cov $(u, \upsilon) < 0$ or cov $(u, \upsilon) > 0$ in the respective two cases.

associated with (iii) simpliciter, depending on the exact values taken by a_1, b_1, b_2, σ^2_u, σ^2_r. But why does this rather counterintuitive result come about? It is not, as I think Mr Spencer suggested, anything to do with the law of large numbers. It arises because (iv) specifically postulates a direct relation between M and Y in addition to the indirect effect of M on Y acting through interest rates. Consider two extreme examples. First if interest rates did not appear in (iv) at all, it would still be possible to control output by controlling M. We would have:

$$Y = a_o + a_1 r + u \qquad \text{(vii)}$$

$$M = b_o + b_1 Y + r \qquad \text{(viii)}$$

Clearly the Poole result still applies and the relative merits of controlling output using r or M as the instrument turns on whether $\sigma^2_u < \sigma^2_r / b^2_1$. But this now resembles a St Louis model. In our case, we have ruled out, ex hypothesi, this kind of direct money - output relationship. Money affects output <u>only</u> insofar as it affects interest rates. The model then becomes:

$$Y = a_o + a_1 r + u \qquad \text{(ix)}$$

$$M = b_o + b_2 r + r \qquad \text{(x)}$$

24. The reduced form between Y and M is now:

$$Y = \frac{a_o b_2 - a_1 b_o}{b_2} + \left(\frac{a_1}{b_2}\right) M - \left(\frac{a_1}{b_2}\right) r + u \qquad \text{(xi)}$$

While the variance of the Y - r relationship remains σ^2_u, the variance of the Y-M relationship is now Ω^1 where

$$\Omega^1 = \sigma^2_u + (a_1/b_2)^2 \sigma^2_r \qquad \text{(xi)}$$

Ω^1 is necessarily greater than σ^2_u if there is any error in the LM curve at all. To reiterate, therefore, if the transmission mechanism between money and output is purely through interest rates, the case I considered in my earlier note, then it is always better to operate directly on interest rates. This result accords with Poole's analysis and with common sense at the same time.

(ii) <u>The Automatic Stabiliser</u>

25. If I have understood Mr Spencer correctly, his automatic stabiliser is incorporated in a model with a demand for money

function and a real income generating function. Real income Y is taken to depend on the nominal interest rate r and inflation π (so that in a special case it could depend on the real rate $(r - \pi)$), on wealth W and on "shift variables" Z. These last represent exogenous effects such as changes in the terms of trade, in export demand or in the state of the arts and are written such that they are positively correlated with real income.

$$Y = f(r, \pi, W, Z) \quad f_r < 0, f_2 > 0$$

The demand for M1 is conventional:

$$M1 = g(Y, P, r) \quad g_y > 0, g_r < 0$$

26. If there is now a positive disturbance to Z with Y initially at its full employment value, then Y will tend to increase to an undesired extent. But this will raise the demand for M1. However, if M1 is fixed or, more generally, growing at some predetermined rate, the nominal rate of interest r will increase. This will feed back into the income generation equation and reduce Y towards it desired level. A negative movement in the shift variable would similarly lead to self-correction mechanisms in the system.

27. My first reaction to this is to suggest that Treasury economists would do very well not to recommend too many automatic stabilisers in the economy -especially in an era of high unemployment amongst our profession. More seriously, my problem with this proposition is that we have very little knowledge of the parameters of the system. On the one hand, the implicit correction mechanisms may be very weak or take a long time to work out. We may not be prepared to wait so long for the correction to complete itself. Indeed, I think it is the case that, as specified, there is no guarantee that Y will ever tend to its initial level. On the other hand, if the response is very fast, the correction process may be divergent with the changes in Y and r leading to ever bigger alternating changes in Y and r in the next round. Empirical evidence suggests that the former is more likely to be a problem in practice - the slow convergence case. But the divergent case is not ruled out by Mr Spencer's theoretical analysis. All in all, unless we are

very lucky, it is highly unlikely that the parameters of the system, even if we knew them, would enable us to leave the automatic stabiliser to its own devices without manual intervention.

28. My other problem is concerned with why we cannot obtain the same result by controlling one of the other aggregates. I believe Mr Spencer's response would be that M1 is the only aggregate which does not have a variant own rate of interest*. For example in the case of M3 we would have to include its own rate, rm in the demand for money function. Thus:

$$Y = f(r, \Pi, W, Z) \qquad f_r < 0,\ f_2 > 0$$

$$M3 = h(Y, P, r, rm) \qquad h_r > 0,\ h_r < 0, h_{rm} > 0$$

29. As before, a positive disturbance to Z raises Y from its preferred position. Demand for M3 increases but with fixed supply the disequilibrium is now resolved either by a rise in r or a fall in the own rate rm, or, in general some combination of these two. The correction mechanism is thus weakened and, indeed, will be more difficult to predict. Similarly, and a fortiori, for the wider aggregates.

30. But it is also not true to suggest that the own rate of interest on M1 is invariant, for two reasons. First, the implicit rate of interest on current accounts, in reduced bank charges linked to average balances, has changed significantly from time to time. Secondly, current accounts are not the whole of M1 and even if the current account own rate were constant, the rate on M1 would be a weighted average of this constant positive rate and the genuinely zero own rate paid by notes and coins. Since the proportion of notes and coin in M1 has fallen secularly, as well as showing short term fluctuation, it is not true that the own rate on M1 shows little variation. Indeed, in one respect, policy-making would be seriously hampered in choosing M1 for the automatic stabiliser. At least with M3 or M5, it is relatively easy to observe what the most important own rates are: with M1, the own rate is difficult even

*Pedantically, one could note that Irving Fisher's preferred aggregate notes and coin, shares this property. Why do we never consider controlling notes and coin, if we consider controlling M1? There is no doubt we can control the supply and the demand function is well determined.

to calcualte, let alone forecast.

31. Overall, I am therefore not persuaded by these arguments for controlling M1. Richard Musgrave's view is that automatic stabilisers are likely to prove a hindrance to public finance rather than an aid and certainly in this case I am inclined to agree. Even if the case for an automatic control mechanism were made, the arguments for preferring M1 to the higher aggregates do not seem very compelling.

C Can the Ex Post PSBR - M3 Identity be Used to Control M3?

32. I have argued previously that the PSBR - M3 relationship may be converted from an ex post identity to a behavioural supply function for M3 if the government gives it behavioural content by controlling each of the arguments on the right hand side. Thus the identity is

$$\Delta M3 \equiv PSBR - \Delta G + BL + XA \qquad (i)$$

Where

M3 = the M3 money supply

PSBR = the public sector borrowing requirement

G = the nominal stock of gilts held by non-bank private sector

BL = new bank lending to the private sector

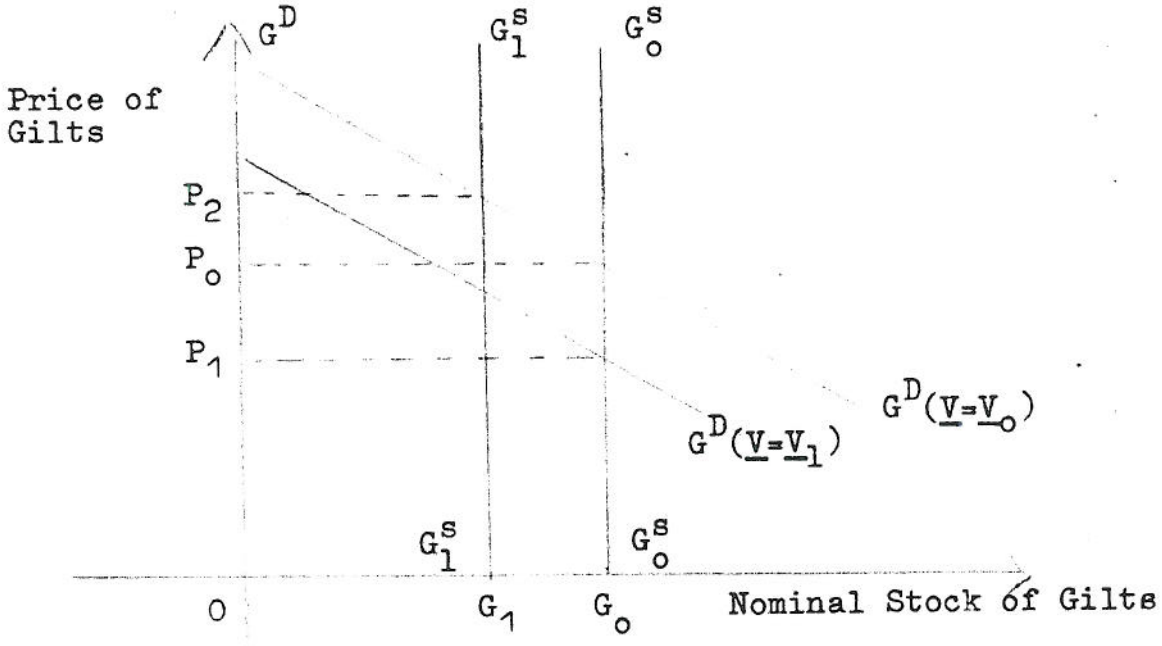
XA = external adjustments to the money supply

But if the government acts to control the right hand side variable and denoting controlled variables by circumflexes:

$$\Delta M3^{s} = \widehat{PSBR} - \widehat{\Delta G} + \widehat{BL} + \widehat{XA} \qquad (ii)$$

33. Before turning to the criticisms of this proposition, let me clear out of the way one point which is strictly irrelevant. It has been argued that there is not a one-for-one relationship between the PSBR and the money supply or indeed gilt sales and the money supply. These arguments are plausible and, indeed, the monetary model has these properties. But that the variables on the right-hand side of (ii) are mutually independent is not a necessary condition for (ii) to have the character of a supply function. Since in observed terms (ii) must hold by the law of mathematics the only remaining issue is whether the right hand side variables are under the control of the authorities, recognising that some policies may affect more than one variable, possibly in an offsetting fashion.

34. At the meeting of 11 January, most discussion centred on the government's ability to control the flow of gilts to the non-banks. Perhaps the first confusion that arose was as to whether the supply of gilts could be distinguished at all since, in instantaneous terms, the gilts market always clears. The answer to this is obviously yes. If the government desires to control the money supply, then it must be prepared to supply a given stock of gilts to the market to meet its target. It must do so regardless of the consequences for interest rates: the fact that governments sometimes fail to meet targets because they find the interest rate consequences unpalatable is not to the point. Consequently, the supply of gilts is independent of the interest rate. By contrast, the stock demand for gilts for the whole of the private sector, ceteris paribus, expectations included, may be drawn as a decreasing function of gilts prices and hence an increasing function of interest rates. Thus, diagrammatically



35. As drawn, G_o^s represents the government's initial supply of stock to the market. G^D is drawn with all variables except the price of gilts taken as constant. The variables $\underline{v}$ may be manifold since expectations are included amongst them. It is perfectly clear that the stock of gilts in the hands of the public is G_o regardless of the location of the demand curve. For example, if there is an unfavourable shift in circumstances for gilt sales the demand curve

shifts from $G^D(\underline{V}=\underline{V}_o)$ to $G^D(\underline{V}=\underline{V}_1)$. But while the price worsens, there is no change in the stock of gilts held. By contrast, if the government decides to buy in, then negative sales of gilts occur accompanied by an improvement in the price. Consequently, net sales of gilts per period are always within the authorities' control only provided they are prepared to accept the necessary price.

36. But a more pertinent issue, raised at the meeting, was whether the government could control the stock of gilts held by the <u>non-banks</u> rather than just the private sector as a whole. Since it is sales of gilts to the non-banks which are important to the money supply relationship, sales between the banks and non-banks could upset the government's money supply target independently of any action the government itself takes. Yet while this makes control more complicated, the main conclusions are essentially unchanged. By varying the supply of stock to the market as a whole the government broker can influence the price of gilts overall. Provided only that the stock demand for gilts by the non-bank private sector is an increasing function of interest rates, he can therefore also control the stock of gilts held by the non-banks. Increasing the supply of gilts in total will eventually increase sales to the non-banks by raising the interest rate. Decreasing supplies in total will eventually decrease sales to the non-banks.

37. To illustrate, suppose the government broker is instructed to sell £900 m gilts to the non-banks in the next 6 months. He can proceed in 3 ways:

a. He can resort to an explicit model of the gilts market, Mr Spencer's monetary model, for example. For a given state of the economy, it will tell him what price of gilts is required to make the sales to the non-banks and further how many gilts to the market as a whole have to be supplied to obtain this;

b. If he spurns such models, he can use his own implicit knowledge of the market to estimate the required overall sales, correcting perceived mistakes as necessary;

c. Finally, he can engage in a pure tatonnement process. In the first 2 months while aiming to sell £m300 to the non-banks

he actually sells £m500 to the market as a whole. But he finds all of these have in fact been sold to the banks. In the next 2 months, aiming to make cumulative non-bank sales of £m600, he corrects by selling £1500m to the market in general. But this is an over-reaction and the banks only buy £m500 of the stock, leaving cumulative non-bank sales of £m1000, in excess of the target for the 6 months. Chastened by this experience, the government broker stays out of the market altogether in the final 2 months and is gratified to find the banks buying a small amount of stock from the non-banks, leaving net sales to the non-banks very close to the target for the period.

38. From this discussion, there seem to be 2 conclusions. First, the government can control the sales of gilts to the non-banks and, furthermore, can do so purely by changing the quantity of gilts sold to the market as a whole. But secondly, this control may not be very exact especially over short periods of time. Mr.Spencer's model may give false predictions of the relevant demand for gilts, or the government broker may misinterpret the sentiment of the market, or the tatonnement may not converge very rapidly. The moral from this, however, is not that control of this kind cannot, or should not, be practised but rather that monetary targets should not be used for fine tuning or set for unrealistically short periods of time.

39. One final point, following naturally, relates to the availability of relevant statistics. In practice, a major obstacle in ensuring control in the belatedness with which sales of gilts to the non-banks appear in the statistics. Normally, these are available only some months after the period to which they refer. Clearly, in a system of monetary control where control of gilts sales to the non-banks is crucial, this situation is less than ideal. This would seem to be a priority area for improvement in statistical timeliness.

D Summary

40. Given that we will need to produce our major contribution on monetary control fairly soon, I would suggest that we should meet as soon as possible:

a. to review to what extent we have established a consensus on the major issues;

b. to decide what strategy to adopt for the remainder of the exercise.

41. On the first point, I think that Mr Spencer and I are probably largely agreed on the transmission mechanism and this is encouraging in that this is probably the most important of the issues. But I am afraid that, even on long reflection, I have not changed my views very much on the other two issues discussed above. It remains to be seen whether you and copy recipients will agree.

42. On the second point, our strategy will doubtless be governed partly on how far we feel we are all agreed. However, there does seem a lot to be said for making our final paper more balanced than the papers we have discussed so far. Most papers, my own included, have tended to argue one side of the issue only and this is not necessarily unhelpful in that this procedure helps to highlight points on both sides of the debate. But it is also true that over 20 years of debate amongst professional economists has failed to resolve conclusively the issues we have discussed, the transmission mechanism in particular. It would be the height of intellectual arrogance for us to ignore this and, while I do not suggest that we will not want to come down eventually on one side of the fence or the other, we should perhaps therefore state carefully both the Keynesian and monetarist positions without describing either as absurd from the outset.

J. W. Grice

J W GRICE
13 February 1979

Appendix

MR RILEY'S CHARACTERIZATION OF THE DEBATE

Common

Notional Demand for Financial Wealth: $F^* = f(Y, r, \overline{K}, \dot{P})$

Supply of Financial Wealth via PSBR: $F = \overline{F}$

Notional Demand for Money : $M^* = G(Y, r, F^*)$

Notional Demand for Bonds : $B^* = H(Y, r, F^*)$

Asset Identities: Notional : $F^* = M^* + B^*$

Effective : $F = M + B$

Riley	Grice
$M = g(Y, r, \overline{F})$	$M = M^* + (\overline{F} - F^*)$
$B = h(Y, r, \overline{F})$	$B + B^*$
$= \overline{F} - g(.)$	$M - M^* = \overline{F} - F^*$
Thus:	$B - B^* = 0$
$M - M^* = \theta(Y, r, (\overline{F} - F^*), K, \dot{P}$	

In either case, if Y, $\overline{K}$, $\dot{P}$, $\overline{F}$ are predetermined, fixing M or B determines r. Hence an observation on M is equivalent to an observation on r.