

Crowding Out: the Real Issues*

1. For some years, "crowding-out" has attracted the attention of both practical men and academic economists, but the two groups have been, in the main, concerned with crowding-out under quite different circumstances. From the practical point of view, the problem has been one of competing claims on resources that are limited for valid reasons. Thus with the money supply increasing as fast as is thought to be consistent with preventing an acceleration of inflation, the demands made by government in the capital market may be such as to squeeze out some private borrowing. If industrial investment is to be protected, then government should reduce its total expenditure and thus its claim on resources. The economists, for their part, have in the main been examining a different situation — one where production is assumed to be *below* capacity so that output could be raised by raising total monetary expenditure. The question of physical crowding-out need not therefore arise. They have then considered the extent to which fiscal action alone, unaccompanied by any complementary increase in the stock of money could bring about a desired expansion in real output. Thus the question is whether some private borrowing may be crowded out by the increased shortage of finance although no physical constraints on output have yet been encountered. The academics have therefore been considering what can fairly be described as an academic question. Of course it does not follow that nothing of practical value can be learned from models that embody restrictive assumptions of this kind. Immediate and direct practicality must not be regarded as a decisive test. It is, however, proper to ask whether the academic inquiry, eagerly pursued down some intriguing by-ways of theory, may not have diverted too much attention from the more central

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problem: that of ensuring that financial crowding-out reflects as closely as may be the need for crowding-out in real terms.

The debate about financial crowding-out in an economy with slack resources will now be reviewed. Although this has been described as the academic approach to crowding-out, it has, in the event, not proved to be unprofitable. For it has helped to break the deeply engrained neo-Keynesian habit of assuming, without explanation and even without comment, that the supply of funds is always fully accommodating. The removal of this special assumption amounts in effect to an acceptance of the earlier and wrongly ousted view that saving and investment can directly affect the rate of interest, although they do not fully determine it, especially in the short run. In the latter part of the article we shall return to the more important practical task of bringing financial crowding-out into an appropriate relationship with crowding-out in real terms.

The academic debate about financial crowding-out in an economy with slack resources will be briefly reviewed in the next two sections. The section that follows is intended to serve as a reminder of what has been described as the more central issue with particular attention to the changing meaning of the term "full employment".

II. Financial Crowding-Out with Unemployment

"Supply constraints", says Stein in his review of the debate "were assumed away. There is always labour enough available to produce the output demanded." (Stein, p. 303) It will facilitate exposition if we make the same assumption initially. It will be noted that, in doing so, we shall be diverging from the monetarist practice of *starting* from a position where unemployment is at its "natural" rate. The monetarists can then show, convincingly enough, that a rise in expenditure will not bring about a permanent increase in employment. They have not, however, so much to say about situations where unemployment is well above its natural level and it is by no means clear how, in their models, this excessive unemployment is to be absorbed. It is true that even from the traditional Keynesian starting point with slack resources, it is not necessary to suppose that an increased public deficit is required if a recovery is ever to take place. After all in the theories of the trade

cycle — some quite strictly in the Keynesian tradition — various reasons were advanced for expecting that a recovery would be brought about by non-governmental factors. Thus a privately generated expansion could gather force and could sweep right up to full employment. (Hicks' *Contribution to the Theory of the Trade Cycle* with its explosive expansions is a familiar example.) If this reasoning is accepted, deficit expenditure by Government may not be regarded as essential but it might help by speeding up what might otherwise be a tediously slow recovery from depression. It is interesting to recall in passing that Pigou and Robertson, as well as Keynes himself, favoured pump-priming action of this kind in the early thirties. This is the use of fiscal policy which we shall consider under (a) below although we shall add the special assumption, made in the recent debate about crowding-out, of a constant stock of money. Pump-priming is one thing. Protracted deficit spending by Government in order to prevent long-term stagnation of the Keynes-Hansen variety is, of course, a quite different matter. It will receive some brief mention under (b) later in the paper.

(a) *Pump-priming*. With the amount of money unchanged, deficit expenditure can bring about a net rise in total expenditure only to the extent that the velocity of circulation can be increased. If velocity does not increase, then there is complete crowding-out and, as has been observed from time to time in the course of the debate, complete crowding-out is what was thought to be normal by the proponents in Britain of the old Treasury View of the twenties and early thirties.¹ As Keynes rightly observed, the same barrier would be

¹ The Treasury View was expressed firmly enough on p. 53 of the White Paper of 1929 (Cmd. 3331): "The large loans involved, if they are not to involve inflation, must draw on existing capital resources. These resources are on the whole utilized at present in varying degrees of active employment, and the great bulk is utilized for home industrial and commercial purposes. The extent to which any additional employment could be given by altering the direction of investment is therefore at the best strictly limited."

In his evidence before the Macmillan Committee Sir Richard Hopkins, Controller of the Finance and Supply Services Department of the Treasury, held that the Treasury View about the diversion of funds from private to public expenditure was not "a rigid dogma." After a prolonged attempt by himself and other members of the Committee to pin Hopkins down and to prevent him from diverting attention to side issues, Keynes complained that: "It (the Treasury View) bends so much that I have difficulty in getting hold of it." (*Minutes of Evidence of the Committee on Finance and Industry*, HMSO, 1931, Thirtieth Day, vol. 2, p. 21.) It would be hard not to sympathise with Keynes after reading what Hopkins had to say.

It is fair to add that, as Professor T.W. Hutchison has reminded us, the

encountered by a rise in private expenditure (Keynes, 1952, p. 121). Expansion could take place, in such circumstances, only if the amount of money were to be increased.

If velocity can rise, then there may be some crowding-out; but it will not be complete and a net rise in expenditure can occur. (In the usual Hicksian terminology which has been much employed in this debate — though not by Hicks himself — the LM curve is rising but is not vertical; in Robertsonian terms the supply of loanable funds will consist of both savings and of money drawn from hoards by higher interest rates.) It might have been expected that, although empirical assessment might be difficult, the model of partial crowding-out would present little difficulty at the analytical level; but analytical difficulties lie behind the strange view that crowding-out may be *negative*. "Negative crowding-out" has been said to arise because the increased borrowing by Government will lead to an increase in interest payments not only in order to service the new debt but also because any refunding of existing debt will have to be done at higher interest rates. Presumably it is implied that this additional interest cost is itself met by borrowing. This is the so called "coupon effect" (cf., e.g. Artis, 1978). It may seem rather surprising that this effect caused by higher interest payments should be found to be so important. (Artis himself concedes that there is "something a little bizarre about the dominance of the effect.") But apart from any doubt one may feel about the econometrics, the use of the term is confusing, and the concentration on those transfer payments that constitute the coupon effect is out of place. After all there is no need to suppose that the increased deficit has been caused by increased government expenditure on goods and services. For it could be brought about entirely by a rise in social security transfer payments. There would not then be any decline in final expenditure by private agents, but we should be using terms in a confusing way if we were to infer that, for this reason, there was then no crowding-out — or that crowding-out would be negative! For the increased competition by Government for loanable funds in order to pay for this rise in transfers would involve a contraction in the funds available for other private purposes.

Treasury View was attacked by Robertson in 1915 in *A Study in Industrial Fluctuations* and by Pigou in his inaugural lecture at Cambridge in 1928. In 1931 it evoked a strong joint protest from Pigou, Keynes and Robertson. (HUTCHISON, 1968, p. 20.) Thus opposition to it did not come only from Keynes.

Private borrowing will then be reduced — but reduced relatively to what? The answer is that private expenditure will be less than would be the case if the additional public expenditure had been accompanied by an increase in the money supply sufficient to avoid any pressure on interest rates. With no such increase in the supply of money, there will be some crowding-out unless there is a fully elastic supply of active money to be drawn from idle balances, or unless the private demand for funds is completely inelastic with regard to the rate of interest. Given extreme and scarcely plausible assumptions, it is indeed conceivable that no crowding-out will occur, even with a fixed money supply; but it cannot in any meaningful sense be said to be "negative".

There is a further question. Will private expenditure be less than would have been the case if no change had occurred in public expenditure and in the public deficit? Private investment may be reduced. (That is to say, the IS curve is elastic.) Even, however, if private investment falls to some extent, the combined total of the public deficit and private investment will rise (apart from the extreme case where velocity is fixed.) In the circumstances we have envisaged, this rise will in turn stimulate a multiplier expansion. But successive increases in the production of consumers' goods — as implied by the dynamic multiplier — will also mean a call upon financial resources. Little attention has been paid to this fact in much of the neo-Keynesian literature because the multiplier analysis is normally based on the implicit assumption of a fully elastic supply of funds. When this condition does not hold, then the pressure on a limited supply of funds may reduce the multiplier. As Phillip Cagan has observed: "Those earlier robust wings of fiscal policy have been clipped quite a bit, because the multiplier is considerably smaller when it is based on the interest elasticity of money demand." (Comment, Stein, 1976, p. 319)

It now seems to be conceded that some pressure on interest rates is normally to be expected if the money stock is given. (That is to say, the economy, during an expansion, will normally be on the rising part of the LM curve.) As we observed in the opening remarks, this represents the abandonment of what has for so long been a crucial part of neo-Keynesian conventional wisdom — the assumption of a fully accommodating supply of funds. In the neo-classical model, decisions to save and to invest, though taken by different people, were linked through the capital market and

harmonised by changes in the rate of interest. With the supply of funds assumed to be augmented by dishoarding but not perfectly elastic, this neo-classical mechanism is accorded at least a partial equilibrating role.

The link between saving and investment may, however, be direct and may not run through the capital market at all. For a large part of investment is financed from internal funds. Consider now a situation where a multiplier expansion has begun. The consumer goods industries will be more profitable and will thus be in a position to meet part of their requirement for working capital from their own funds. This source will also help to finance additions to fixed capital if these are now thought to be desirable. Their desirability will, in fact, reflect not only the rise in sales relatively to existing capacity but also the enhanced possibility of relying upon internal funds which is preferable to external financing. One of the implicit assumptions of the multiplier analysis is to the effect that the rise in saving with rising income has no effect on investment decisions. This, of course, is not so, and it would appear therefore that the multiplier may not be reduced so much after all by the limit on the total supply of money.

The abandonment of the Keynesian assumption that decisions to invest are unaffected by the flow of savings has, *inter alia*, a bearing on the theory of the balanced-budget multiplier and this in turn affects the assessment of crowding-out. In the balanced-budget multiplier, as in the ordinary Keynesian multiplier, savings are simply a leak and are thus fully deflationary. It is surprising, perhaps, that this dubious assumption should have survived for so long with so little criticism notwithstanding all that has been said in other contexts about the importance of self-financing for industrial investment. In so far as the saving is company saving there will be some stimulus to increase investment and this may be appropriately termed "crowding-in". (Cf. Sargent, 1977, p. 45.) As Neild has observed: "... profits which go unspent because they are unexpected soon give rise to increases in expenditure" (Neild, 1974). The same can be said of part of personal savings: the savings of small firms and farmers. We are thus left with the acquisition of financial assets by the personal sector and even here we must allow for some effect on investment through bond prices and equity prices. It cannot, therefore, be assumed that in so far as taxation reduces saving it will cause no reduction in expenditure — the assumption so long

embedded in the various forms of multiplier theory. In the case of the balanced-budget multiplier, the effect of correcting for this distortion may, of course, be to reduce the size of that multiplier quite substantially. The greater expansionary effect of a deficit financed by borrowing with an elastic supply of funds is thus further increased as compared with the same public expenditure financed by taxation.

The financing of a public deficit and of any secondary expansion built upon it requires, as we have seen, a more active use of the fixed stock of money.² Even monetarists are prepared to concede that income velocity can vary in the short run but are inclined to stress the discouraging effect of higher interest rates on investment demand (i.e. a fairly elastic IS curve). The Keynesian participants in this controversy have been more optimistic about raising velocity and less inclined, in any case, to suppose that investment decisions will be adversely affected by any given rise in interest rates. This contrast of views is what one would expect; yet there does appear to be some ambiguity in the Keynesian attitude. For if so much can be done by means of changing velocity, is their opposition to monetary targets based simply on the belief that these will be ineffective or, as is sometimes suggested, that they will be too restrictive?

The ease with which income velocity can be raised will depend partly upon the relationship between the money stock and velocity at the starting point. There is no reason to confine attention to situations where this initial relationship was one of equilibrium. In the recent past the supply of money may have gone up sharply relatively to income (as in the U.K. in 1972-3) and monetarists would not deny that it takes time for a surplus to work its way into circulation. In such circumstances, an increased deficit might be financed with little pressure on real interest rates. The rise in interest rates may in itself affect liquidity preference by increasing the public's nervousness, as Keynes feared (Keynes, 1936, pp. 119-20), or may affect it in the opposite direction by raising confidence if people are satisfied that an expansion is both desirable and now more likely to be achieved. The increased deficit may have a more

² There are interesting differences between countries in the variability of velocity. Thus for 1963-77, the standard deviation for the income velocity of M_2 was: USA 1.26; Belgium 2.50; Italy 2.64; France 2.64; Germany 2.73; Canada 3.19; Japan 3.67; UK (M_3) 5.46 (*Report of the Bank for International Settlements*, Basle, 1978, p. 55.)

complicated effect in that it may cause people to modify their views about what, in Keynes' language, may be regarded as a "safe" level for interest rates. If a fall in bond prices led to the anticipation of further falls, then the authorities would obviously find it more difficult to borrow. It was the apprehension that this would occur that lay behind the Bank of England's former theory of "leaning against the wind", i.e. sell bonds only on a rising market. This theory has not, I think, been revived in the course of the debate about crowding-out which is perhaps a point of some interest. Although the principle of "leaning into the wind" would have been defended by the Bank as a pragmatic ruling based on experience, it was consistent enough with Keynes' views. If this principle had to be accepted, the neo-Keynesian view that crowding-out is of little importance would have to be rejected even as applied to the short run.

(b) *Long-term deficit finance.* So far we have been concerned with a short-term deficit designed to prime the pump and it did not seem necessary to devote attention to wealth effects in this context. Admittedly, wealth effects may make themselves felt quite quickly when a crisis has caused a steep fall in security prices such as that following the oil crisis of 1973/4. But it is scarcely plausible to suppose that the increase in the national debt attributable to a pump-priming operation would be sufficiently large to have a significant wealth effect on expenditure.

A large part of the literature on crowding-out deals, however, with a longer period on the assumption of sustained deficit financing, presumably because pump-priming may not suffice. It is in dealing with this question that we have had the more impressive display of theoretical virtuosity — whatever one may think of the practical value of the exercise.

With the rise in public borrowing, is it not possible that the rise in the amount of debt held by the public will lead to increased spending which will offset, perhaps more than offset, any crowding-out of private investment? Perhaps there is a possibility here but it does not seem a very convincing one. First any rise in interest rates that occurred would prevent the market value of the public debt from rising in line with its nominal value. Secondly, if prices are rising — a development hitherto excluded by our assumption — and if this rise is partly unexpected, there will be an inflation-tax on bond holders as well as on others. The third objection is, of course,

the formidable super-rational argument: people will recognise that increased public debt must be paid for ultimately in higher taxation and will not therefore consider themselves better off even if the nominal value of the public liabilities in their possession has increased. This super-rational argument may be pushed too far for the public may not take so long a view, and in any case part of the public borrowing may be for productive purposes. There may nevertheless be force in this objection. To put the point differently, is it plausible for us to suppose that a rise in the national debt will make people feel better off and, for this reason, inclined to spend more?

Admittedly this sacrifice of liquidity could be reduced by an appropriate choice of the maturity of public borrowing. Benjamin Friedman has suggested that the Government should borrow mainly by means of very short-dated bonds which could be regarded as a fairly close substitute for money whereas industrial securities will not be so (*Brookings Papers on Economic Activity*, 1978, no. 3, p. 141). One must observe, however, that the cost would be the continuing task of refunding a correspondingly larger part of the national debt each year. In any case all such measures would only be palliatives. For there can be no doubt at all that public deficits over an extended period of years must lead to increasingly severe crowding-out if the money supply is held constant. Even if income does not continue to rise so that there is no sustained increase in the income velocity of circulation, there is bound to be some upward pressure on interest rates as the stock of bonds rises relative to the stock of money which is, by assumption, fixed in amount. A move to shorter-dated bonds could not fully offset this effect for an indefinitely long period. If income is also continuing to rise and if increases in velocity are envisaged, in Keynesian terms, as transfers from idle M_2 balances to active M_1 balances a time would presumably come when the former had been exhausted! If we allow also for the more active use of balances that were not wholly inactive at the outset, we must still face the fact that rising velocity involves cost and inconvenience.

It must, I think, be admitted that the protracted discussion of long-term crowding-out has about it an air of unreality.³ Why should

³ "Thus, if indefinitely large expansions or contractions of aggregate demand are not to result, monetary and fiscal policies must necessarily work in concert in the long run, and the question of the relative efficiency of the two policies becomes otiose." DAVID CURRIE, *Monetary and Fiscal Policy and the Crowding Out Issue*, mimeo, 1978, p. 16.

it be thought worthwhile to investigate in such detail a situation where a public deficit is to be financed year in and year out without any increase in the amount of money? If crowding-out should occur on a scale that was thought to be undesirable, the remedy would be the rather obvious one of increasing the money supply. This does not mean, of course, that the deficit need be financed *entirely* by new money but only that, with a higher level of output, rising wealth and a rising national debt, there should be a sufficient increase in the money supply to prevent financial crowding-out when there is still sufficient slack in the economy to make crowding-out in physical terms unnecessary. The debate that has nevertheless taken place is to be explained as the expression, in extreme form, of the rival claims of monetarists and Keynesians for monetary and fiscal policies respectively. But, from a practical viewpoint, there is really no reason to fasten attention on a situation where fiscal policy is used in isolation without the support of monetary policy.

Deficit financing with an unchanged money stock is obviously a less unreal policy if maintained only for a short period. Even so it may be asked whether it is not too special a case to call for much attention. Admittedly an easy fiscal policy combined with a fairly tight monetary policy has been recommended from time to time primarily in the belief that this would ease some of the problems of an open economy. There may be situations where this combination would be helpful though only for a short period; but the proposal cannot be regarded as one of central importance. Another possibility would be to envisage a situation where some provincial government with no power to issue money but with freedom to borrow tried to stimulate activity in defiance of central federal policy; but this is not a particularly important case. It is worth adding that the possibility of the European Commission embarking upon stabilisation measures financed by loans has been mentioned by Oates and Peeters who have referred, however, to possible crowding-out (MacDougall Report, 1977, p. 292 and p. 475). Even if some useful net expansion could thus be achieved, there would remain the formidable objection that, in envisaging such a situation, one would be envisaging a conflict over stabilisation policies between the European Community and its member states.

III. Crowding-out in Real Terms

It has been suggested above that the really interesting and important question is the old one: how to match financial crowding-out with the crowding-out in real terms that must occur when a nation's resources are fully employed. It is an old question but one that now presents new difficulties.

"Full employment" has always meant something less than 100 per cent, but the question is: how much less? Keynesian theory has permitted a degree of latitude. That is to say there could be some trade-off between less unemployment and more inflation. This was an attractive idea partly because of the difficulties of forecasting and of adjusting policies with sufficient delicacy and speed to changing circumstances. For it was tempting to believe that the danger of an excessive and unintentionally large amount of unemployment might be warded off by erring deliberately a little on the side of inflation. This was not an altogether foolish notion provided the inflation was very slight, for there may be a threshold that has to be exceeded before the sensitivity of the economic agents will be such that they will react in a way that leads to accelerating inflation. For a good many years after the war events seemed to lend at least some support to this view, but it was always uncertain how long this would go on. In the event the rise in inflationary pressures roughly from the time of the Vietnam war has been such as to sweep right over any thresholds that may exist and this, it should be observed, has left behind a heritage of heightened sensitivity so that even the modest threshold theory has now less plausibility.

One of the main contributions of the monetarist school has, of course, been their emphasis on inflationary expectations; but it is not unfair to add that their own theory of "the natural rate of unemployment" is somewhat lacking in clarity. This is defined in two ways: (i) the structural and frictional minimum which corresponds broadly with the Keynesian notion of "full employment"; (ii) an equality between anticipated and actual inflation. First it is not clear that the two *need* coincide. Expectations might be fulfilled at a level of unemployment well below (i) — with, perhaps, no anticipated or actual inflation at all but with unemployment far in excess of the structural and frictional minimum. Secondly, the monetarists seem to envisage the possibility of a continuing rise in

prices provided it is fully anticipated. This is a difficult notion. How can it be supposed that everyone will have the *same* anticipations which prove, in the event, to be right? Moreover, if a government is prepared to accept, say, a 5 per cent rise in prices, will people be convinced that it will resist the temptation to permit a little more? So we really come back to zero inflation as the only target that is likely to be convincing.

At what stage during an expansion from a low level of activity are prices likely to rise? This is a matter of crucial importance and Keynes' own answer was, to say the least, discouraging. For he took as his starting point the traditional theory of the firm with rising marginal costs in the short run when plant and equipment are supposed to be fixed so that, *caeteris paribus*, an expansion of demand could entail a fall in real wages. This allowed Friedman to point out that Keynes was depending upon an assumption of money illusion which was not realistic. Oddly enough, however, the importance of the obstacle to expansion prevented by this early rise in prices was *understated* by Friedman for he takes as the starting point a situation where unemployment is at its natural level and, in sense (i) above, this means much the same as Keynesian full employment. That is to say, somehow full employment has been reached before the expansion has led to unsustainable inflation. What appears to have been overlooked is that expansion from very much lower levels of capacity utilisation would lead to rising prices on Keynes' assumption of decreasing returns. If money illusion is now held to be only a temporary phenomenon, then even those expansions that start from low levels of activity will be inflationary and thus unstable. It should be added that this will be so whether or not the recovery has derived some of its force from pump-priming by Government.

Two reasons may be advanced for believing that this difficulty could be overcome. The first is that labour's productivity may not fall with rising output. Kalecki held that constant returns would be a more realistic assumption (Kalecki, 1937) and it is even possible that productivity may rise especially if firms have been hoarding labour during the recession. Secondly, non-embodied technical progress may help to offset the tendency towards decreasing returns. Thirdly, continuing investment will permit some embodied technical progress and will, in any case, modify the assumption of decreasing returns. For growth is not just a long-run phenomenon. On the contrary,

even in slowly growing Britain, the secular annual growth rate in the quarter century before the oil crisis was nearly always rather greater than those increases in output that were attributable to cyclical recoveries. There is, however, a third factor which operates in the opposite direction: the rising prices of primary products which is likely to be particularly strong if recovery is synchronised in a number of countries. There are, therefore, a number of conflicting forces and the net outcome will determine whether or not prices will rise even before full employment.

There is a further factor that has become an increasingly difficult one, not only for the U.K.: at roughly what level of unemployment are structural and frictional difficulties likely to bite? Keynes himself recognised clearly enough that shortages would be encountered in some parts of the labour market while there was still slack in others. Indeed in 1937, he committed himself in *The Times* to the view that not much more could be done to reduce unemployment by raising effective demand — although unemployment was then about 9 per cent on the modern basis of reckoning. When shortages occur, this will be reflected in higher wages and salaries and, as we well know, sympathetic increases are likely to be made elsewhere. With a labour force that is far from homogeneous and with trade-union resistance to much widening of differentials, the percentage unemployed when full employment has been reached may be substantial if the composition of the labour force matches only poorly the pattern of increasing demand.

Although the general point is valid enough, it is hard to believe that this position has been reached in the late seventies. Yet it is a fact that in Britain even in the less prosperous areas labour does not seem to be as easily obtained as one might suppose. For example in a report on west central Scotland prepared for the Manpower Services Commission, Professor L.C. Hunter observed that: "Over the last decade there have been persistent complaints from employers in west central Scotland regarding labour shortages." (Manpower Services Commission, 1978, p. 9). His investigation showed that these complaints were not without foundation, during 1973-75 though it is true that the large nationwide increase in unemployment had not yet taken place. Unemployment, was, however, already well above the levels customary in the fifties and early sixties, and in West Scotland average male unemployment was averaging nearly 8 per cent by 1975.

There is no reason to suppose that this situation was peculiar to Central Scotland within the U.K. Moreover other countries appear to have experienced similar difficulties. (Cf. e.g., OECD, 1979.) But studies in depth of local labour markets do not seem to have been carried out as widely or as frequently as one might wish. Nor are the shortages confined to skilled labour, even if more acute with regard to various skilled categories. One may speculate about the causes such as inadequate training programmes, the prolongation of search periods by increases in unemployment pay relatively to earnings after tax, and so on. Our purpose here is not to review such possibilities nor to try to assess their importance. The point to be made is that it has, apparently, become increasingly difficult to determine when demand has expanded to the position, or rather to the zone, where any further expansion is likely to be inflationary.

It will have been observed that attention has been largely confined so far to these inflationary pressures that emanate from excessive demand. Thus, although some reference has been made above to the effect of rising prices on wage-demands, nothing has been said about the ways in which trade-union attitudes may be affected by changes in the level of employment. This is one of the familiar factors that help to determine when full employment has been reached, but it involves too many complex issues to be further analysed here.

To sum up. What we described initially as the academic debate about crowding-out has followed some strange lines uninhibited by too much regard for practical policy. This outcome was perhaps a natural consequence of the initial assumptions which were (a) a fixed stock of money and (b) plenty of scope for increasing real output by raising effective demand. As we have seen, the subsequent analysis, if taken to apply only to short-term pump-priming, has been of value, although its usefulness may have consisted mainly in the breaking down of certain neo-Keynesian habits of thought. When applied to the long period, the unreality of assuming indefinitely prolonged deficit expenditure becomes oppressive and the analysis has been more productive of theoretical curiosities than of useful conclusions. When freed from these inhibiting initial assumptions and interpreted more broadly, the study of crowding-out acquires real interest and importance. The questions that then come to the fore include the following. When must crowding-out in real terms start to take place? Where is full employment now located? How can

financial management be geared in timing and amount to match the needs of the real economy? When crowding-out in real terms must take place, which lines of expenditure should be curtailed and by how much in any particular situation? And so on. These are examples of the broad headings under which the analysis of crowding-out might more usefully be pursued.

University of Glasgow

THOMAS WILSON

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