MONETARISM AND THE

BUDGET DEFICIT

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One of the most important changes in thinking about British economic policy in recent years has been a reaction against discretionary adjustment of the government's financial position to control fluctuations in activity. Scepticism about "fine tuning" has developed partly because of its conspicuous inadequacy to meet the cyclical problems of the 1970s and partly because the current large public sector borrowing requirement is seen as a threat to financial stability. A preference for automatic rules, to be obeyed by the government irrespective of the cyclical conjuncture, has been expressed in some quarters.

Public debate has concentrated on two main rule prescriptions - the monetarist recommendation that the money supply be regulated in order to keep its rate of growth in line with that of productive capacity; and the "new Cambridge school" doctrine that the budget deficit be geared to medium-term balance of payments targets, being set equal to the private sector's equilibrium net acquisition of financial assets, which is said to exhibit considerable stability through time. (1) These two rules are concerned with different policy variables and they focus on different objectives. One consequence is that monetarism appears to give no guidance on the desirable size of the budget deficit. This impression is confirmed by the haphazard reference to the budget position from its supporters. Some monetarists seem to believe that fiscal righteousness consists in the restoration of balanced budgets; others profess an almost total indifference to the scale of the government's borrowing needs. (2)

The purpose of this article is to show that the monetarist approach does generate a framework for determining the permissible size of the budget deficit in relation to national income. The framework is theoretical, but it has direct policy applications. It accords high priority to the attainment of price stability. By contrast, other policy goals, such as full employment and balance of payments equilibrium, are not recognised in the analysis. Their exclusion could be justified on the assumptions that labour markets are self-equilibrating and that floating exchange rates are a sufficient answer to external imbalance.

Some economists might disagree with these assumptions. However, they will probably accept that, if the budget deficit indicated by the present discussion is inconsistent with full employment or payments equilibrium, serious problems would arise for the conduct of economic policy. The viability of pursuing simultaneously the three objectives would be challenged.

The notion of "monetarist equilibrium" is central to the analysis and must be defined at the outset. It is not to be understood as equilibrium in a behavioural sense; although it may be compatible with stable asset acquisition patterns, it is not intended as a partial specification of portfolio balance. Instead, it should be considered as equilibrium in a policy sense; it pertains to a state of affairs in which the government is achieving price stability and can expect to continue doing so indefinitely into the future. In the next two sections the conditions for monetarist equilibrium are discussed. They are that money supply growth should be related to the growth of productivity capacity and that the increase in interest on the national debt should be equal to the increase in national income. Given the the institutional context in Britain and most other industrial countries these conditions can only be satisfied if the budget deficit is of a particular size.

Monetarist equilibrium may obtain in a stationary or growing economy, but it is most interesting when set against the background of economic growth. The analysis is close, therefore, to the models of "steady state" expansion which play such a major role in the theoretical interpretation of growth.

In the fourth section the two conditions are combined and the resulting formula for the budget deficit is examined. In the penultimate section the problem of moving from the current disequilibrium towards equilibrium is considered.

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In Britain the money supply is tied to a number of government liabilities and its growth is largely determined by the public sector borrowing requirement. Although the linkages may be familiar they are important to the present argument and it may be helpful to recall them in more detail.

The money supply has two components, notes and coin in circulation with the public, and bank deposits. The first component is a liability of the Bank of England and, indirectly, of the government. Since the public cannot ask for redemption except in the form of other notes and coin this characterisation may seem artificial. But it is at least true that a gap between the government's expenditure and revenue is necessary for an increase in the issue of notes and coin; and, apart from Friedman's helicopter, no other route whereby they may enter the economy has been suggested.

Bank deposits are a liability of the banking system. However, the propensity of the banks to extend credit and add to both sides of their balance sheets is constrained by the quality of their assets. In particular, the structure of the financial system is such that deposit creation depends on the quantity of reserve assets in their portfolios; and reserve assets are preponderantly liabilities of the public sector. Consequently, deposit creation is related to the public sector's financial position.

It is instructive - and essential to the argument - to note that the private sector is unable to conceive on a sufficient scale either notes and coin or reserve assets. The objection to the private issue of notes and coin is that, when enforced by law, the seigniorage accrues to a company or institution; and it is not clear that any private body merits such an advantage. On the other hand, if private issue is not enforced by law it is not credible and cannot perform the function of a medium of exchange. The possibility of reserve assets being provided by the private sector is more substantial. Indeed, commercial bills, as high-quality private sector paper, do rank as reserve assets in Britain. But it is unlikely that the banks would feel safe if their operations were ultimately founded on the reputations of a small number of leading industrial companies. They must have government paper on their books. Only central government liabilities are altogether free from default risk. (3)

It follows, therefore, that a budget deficit is required to achieve money supply growth and that a deficit of a particular size is necessary for growth a particular rate. It follows also that the monetarist recommendation of stable monetary expansion has definite implications for fiscal policy.

Some remarks on the monetarist rule may be relevant here. The rule is normally proposed in the form "money supply should grow at a steady 3 to 5 per cent a year in line with the underlying rate of growth of national output". This formulation is based on the observation that the money supply and money national income tend to move together over time.

To state the problem in this way has a drawback: the demand for money arises for private expenditures, not for money national income as a whole. Because the government can "print" money the transactions under its control are not covered by running down holdings of bank deposits and it has no need to keep liquid assets of

any type. Hence, if the share of national income accounted for by public expenditure increases the demand for money declines. There are some difficulties with this assertion. For example, the private sector does build up balances in advance of tax payments and the status of public corporations and local authorities, which are not altogether protected from risk and therefore have some demand for liquidity, is uncertain. But these difficulties are incidental to the main argument and may be avoided by making the assumption that the ratio between public and private expenditure is constant. Until the last three years the assumption would have been realistic in the British case.

Although the demand for money may bear a stable relationship to private expenditures it does not, of course, necessarily grow at the same rate. The income elasticity of demand for money may differ from one; and technical progress in the financial system may enable companies and individuals to economize on their liquid balances. These points are not incorporated in the relationships in the appendix, but the qualification is not important. If equilibrium obtains only when the money supply is increasing at a steady rate different from productive capacity the budget deficit necessary for monetary reasons may be adjusted accordingly.

One interesting, if obvious, outcome of the discussion so far is that balanced budgets and a monetary rule are not consistent, apart from the special case of a static economy. In general unbalanced budgets are appropriate and the degree of imbalance is a positive function of the growth rate. An exception would be feasible when illiquid liabilities of the government, incurred in previous deficit phases, are coming due for redemption as the option to redeem in notes and coin, or reserve assets, would then be available. However, such a policy would have effects on the burden of debt interest and it is to this topic that attention must now be directed.

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The results of large national debts have been controversial for centuries and the subject remains among the most unsettled in economics. The purpose of this section is not to revive the disputes, but to outline the reasoning behind the rather unsurprising principle that interest on the national debt must never, for any prolonged period of time, be allowed to grow faster than national income.

One of the more ancient perceptions of economic science is that a nation cannot be in debt to itself. In this trivial sense the national debt can never, no matter how large, impose a burden on society. But this does not mean that the size of the debt and its rate of growth can be ignored. The simplest and most entertaining demonstration of the dangers of a burgeoning national debt is to attempt the description of an economy where interest on the debt is equal to national income. The tale is an improbable one and perhaps it does not need to be said that the economy would break down long before debt interest had become so large. We may distinguish two cases - on where the debt interest is met from direct taxation; and one where it is met from indirect.

If debt interest is paid for by direct taxation the rate of tax has to average at least 50 per cent on both earned and unearned income. With a 50 per cent rate the national income accounting identities are satisfied, as long as there is no government expenditure apart from debt interest. Further expenditure would necessitate an even higher tax rate. It is doubtful that an efficient pattern of incentives would survive with these tax rates in force, but a decline in national income would exaggerate the problem. The piquancy of the government's dilemma is heightened by distinguishing between the working taxpayer and the rentier. (The rentier is also a taxpayer, but

he does not have to do anything to receive his income.) The working taxpayer obtains no return from half his output and probably has no compunction about evading tax. But, if the government does not raise the revenue required, the rentier feels cheated, particularly as he has saved and made sacrifices to acquire his bonds.

If debt interest is paid for by indirect taxation the situation is a little easier. A 100 per cent rate of value added tax would again satisfy the national income accounting identities. The working taxpayer would still be doing half his day for no reward, but he might be under the optical illusion that he was being paid in full because there would be no deductions from his payslip. The snag here is less one of work incentives than of the attractiveness of carrying out transactions by barter or cash to avoid identification by the tax authorities. Successful evasion would, as in the direct tax case, magnify the government's difficulties.

The situation is untenable. There are upper bounds to the ratio between interest payments on the national debt and the national income; and the binding constraint on deficit financing is that, when taken to extremes, it sows the seeds of social conflict between the taxpayer and the rentier. These conclusions are not new. Indeed, they were a commonplace in the 1920s and 1930s and constituted the most persuasive justification for sound finance and balanced budgets. The effectiveness of sound finance principles in public debate at that time was largely attributable to the force of "the limits of taxable capacity" argument. The financial traumas of several European governments after the First World War, which had left a legacy of enormous national debts, remained vivid in the minds of most contemporary economists. In France in the mid-1920s, for example, the greater part of government revenue was levied on behalf of the rentier and the resulting social stresses became intolerable. Keynes wrote an article in The Nation and Athenaeum of 9 January 1926, with the rather impudent title "An Open Letter to the French Minister of Finance (whoever he is or may be)", suggesting that a deliberate inflation of between 60 and 80 per cent be engineered to diminish the real value of the debt servicing burden. (4) The memory of this phase of its financial history may be responsible for France's high ratio of indirect to direct taxation and for its failure to establish an effective market in long-term government bonds.

If, therefore, debt interest threatens to rise indefinitely as a proportion of national income corrective measures have to be taken and policy is not in equilibrium. There would, however, be no objection to keeping debt interest and national income growing at the same rate. This condition is chosen here as a characteristic of monetarist equilibrium.

It is important to note that the condition is not necessarily optimal; it may be that a large national debt occupies too prominent a position in the private sector's portfolio and "crowds out" other asset holdings, such as equities and debentures, which would otherwise match a greater accumulation of real capital goods. But a situation in which debt interest and national income are growing at the same rate is sustainable and, for the purposes of this paper, that is what matters. The analysis is intended to find out the maximum size of the budget deficit compatible with zero inflation and political stability, not to indicate the economic results of having a smaller deficit.

The rule that debt interest should grow no more quickly than national income was mentioned in most manuals of public finance before the onset of Keynesian macroeconomics. It has tended to be disregarded since The General Theory because the popular assessment of Keynes' work is that uninhibited deficit financing is warranted by a deficiency of aggregate demand. In fact, no leading economist of Keynes' generation - and certainly not Keynes himself - thought that the size of the

budget deficit could be divorced entirely from considerations of financial prudence. Indeed, the 1944 White Paper on Employment Policy, often described as the charter of discretionary demand management, contains an excellent paragraph on the approach towards controlling the national debt in the long run. It deserves to be quoted in full:

> Not only the national dead-weight debt in the narrow sense, but other public indebtedness which involves directly or indirectly a charge on the Exchequer or on the rates, reacts on the financial system. Interest and other charges thus falling on the Exchequer are often regarded as in the nature of a transfer income in the hands of the recipients and as imposing no real burden on the community on the whole. But the matter does not present itself in that light to the taxpayer, on whose individual effort and enterprise high taxation acts as a drag. At the same time, proper limits on public borrowing also depend on the magnitude of the debt charge in relation to the rate of growth of national income. In a country in which money income is increasing, the total debt can be allowed to increase by quite appreciable amounts without increasing the proportionate burden of the debt. Owing to the prolonged decline in the birth rate and the present age distribution of the population we can no longer rely, as in the past, on an increase in national income resulting solely from an increase in the number of income-earning persons . . . On the other hand, these difficulties would be more than offset by continued progress in technical efficiency, which is the dominating factor in the growth of real national income.

More remarkably still, the previous paragraph closed with the words, ". . . to the extent that the policies proposed in this Paper affect the balancing of the Budget in a particular year, they certainly do not contemplate any departure from the principle that the Budget must be balanced over a longer period"; and the following paragraph, almost anticipating what has been termed the "fiscal frenzy" of 1974 and 1975, opened with the warning that, "Both at home and abroad the handling of our monetary problems is regarded as a test of the general firmness of the policy of the Government. An undue growth in national indebtedness will have a quick result on confidence. But no less serious would be a budgetary deficit arising from a fall of revenues due to depressed industrial and commercial conditions." (5)

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The two conditions for monetarist equilibrium are combined in an appendix and a simple algebraic solution for the maximum permissible ratio between the budget deficit and money national income is reached.

The ratio depends on the growth rate and elasticity of demand for money, which cannot be manipulated by the authorities; and on the reserve asset ratio, and the ratios of private expenditure and the national debt to national income, which can be partly influenced by government action. (6)

The role of the ratio of national debt to national income - or debt/income ratio, for short - is awkward, because it and the budget deficit interact. It could be argued that the ratio is an inheritance of history and that regarding it as a datum is, for present purposes, a satisfactory simplification. But this is misleading because, when the economy is out of monetarist equilibrium, the budget deficit causes variations in the ratio; only in equilibrium is the ratio constant.

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The interpretation of the debt/income ratio is critical for selecting the correct budget deficit figure. It obstructs the immediate application of the analysis to policy formation because the formula is not valid outside an ideal equilibrium context. The current state of affairs diverges rather conspicuously from such an ideal.

More specifically, it would make little sense to favour stability of the ratio of debt interest to national income (debt interest/income ratio) in present circumstances. Were inflation to be overcome interest rates would fall sharply - to, say, 3 or $3\frac{1}{2}$ per cent on the type of assets which constitute the bulk of the national debt. Since the average rate of interest on the nominal value of the debt is at present about $7\frac{1}{4}$ per cent a constant debt interest/income ratio would imply a doubling of the debt/income ratio. But this, in turn, would imply several years of deficit financing.

There are, perhaps, two approaches to the "re-entry problem" of moving from disequilibrium towards equilibrium. The first is to take the debt/income ratio as a desideratum in its own right. It is most likely that the policy-maker would choose one close to the current ratio between the nominal value of the national debt and the national income (or national debt/income ratio). This course is recommended here because it minimizes disturbance to public sector finances and has the merit of simplicity.

But there is a second approach which highlights the economic significance of policy options and might lead to a more reasoned discussion of alternatives. It is to note the essential respects in which equilibrium and disequilibrium differ.

There are two such respects - first, in equilibrium the nominal and market values of the national debt are identical, because interest rates are constant, and in disequilibrium they may not be equal; second, in the comparison of equilibria it is of no importance whether the debt interest/income ratio or debt/income ratio is chosen because they differ by equal proportionate amounts, but in the comparison of disequilibrium and equilibrium the choice of ratio affects the issue because changes in the ratios may not be proportional. This contrast hints at three possible objectives for a policy-maker faced by the re-entry problem:

1.   Stability of the debt interest/income ratio. On the path to equilibrium the nominal debt/income and market debt/income ratios adjust.

2.   Stability of the market debt/income ratio. The debt interest/income and nominal debt/income ratios adjust.

3.   Stability of the nominal debt/income ratio. The debt interest/income and market debt/income ratios adjust.

In discriminating between these three objectives the policy-maker may have several considerations in mind. He may have political preferences for a low debt interest/income ratio from sheer dislike of the rentier class; or he may feel that a high market debt/income ratio "crowds out" the accumulation of capital goods by the private sector and discourages investment by satisfying savers' asset demands too completely; or he may decide that an abundance of public debt instruments adds flexibility to the financial system and, because of their suitability as collateral, encourages the taking of risks in industry and commerce. It is impossible to resolve these issues in the space available here. A much fuller and rather different discussion would be required before they could be adjudicated.

It is surely natural, nevertheless, for the government in Britain today to pay most attention to the nominal debt/income ratio and to insert its present value - about 0.6 - into the formula. Stability of the debt interest/income and market debt/income ratios do not bear examination as objectives, unless wild upheavals in the government's financial position on the path to equilibrium can be contemplated with equanimity.

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If, therefore, the government wants to pursue a permanent and sustainable anti-inflationary policy the maximum permissible ratio between the budget deficit and national income is between 2 and $2\frac{1}{2}$ per cent. (The precision of the figure of 2.2 per cent in the appendix should be taken with a pinch of salt. It would be altered if the debt/income ratio were to change slightly during the re-entry period.) This fiscal recommendation is designed as an accompaniment to the monetary rule. It may be regarded as a step towards the more complete specification of monetarist stabilization policy.

The argument that the government should rigidly adhere to a budget deficit of at most between 2 and $2\frac{1}{2}$ per cent year after year has not been made in this paper, but the reader may guess (rightly) that the author is in favour of this course. It would be strange, but not inconsistent, to support an automatic monetary rule and discretionary fiscal policy. But even to a defender of fiscal "fine tuning" the paper's results may be valuable. In particular, an indication has been given of the average level around which the budget deficit may be allowed to fluctuate through each cycle if monetarist equilibrium - or, less tendentiously, price stability - is to be preserved from one cycle to the next.

It could be objected that the conclusion depends on an arbitrary value of the debt/income ratio; and the objection is a valid one. But the argument could be hardened by appealing more definitely to the "crowding-out" hypothesis that an increase in public debt substitutes for private debt issues that would otherwise have occurred and thereby reduces investment. If this hypothesis is accepted the paper has effectively reinstated the pre-Keynesian "Treasury view" that government expenditure increases, when unmatched by taxation, can only cause either inflation or less private expenditure. (7)

August 1976   **Tim Congdon**

Notes

(1)   See "Public Expenditure and the Management of the Economy" by Mr. Francis Cripps, Mr. W.A.H. Godley and Martin Fetherston in Ninth Report from the Expenditure Committee 1974 Public Expenditure, Inflation and the Balance of Payments H.M.S.O.: 1974, particularly p. 4.   No behavioural explanation for the stability of the private sector's acquisition of financial assets has been provided by the new Cambridge economists, an omission unsurprising in view of their neglect of monetary economics.   Perhaps because of this weakness the new Cambridge school was unable to provide an explanation of the improvement in the balance of payments in 1975, concurrently with a marked widening of the public sector financial deficit.   In any case the theory does not stand up as an insight into payments imbalance because it takes no account of the fiscal position in trade partners.   Would Britain have a current account deficit equal to 3 per cent of national income if its public sector financial deficit were 4 or 5 per cent and that in other countries were 10 per cent?

The new Cambridge economists have performed a service, however, by pointing out the need for a theory of private sector asset acquisition.   I would suggest that it can be divided into two parts - the acquisition of liquid assets; and the acquisition of illiquid.   The acquisition of liquid assets in equilibrium is stable through time.   This, after all, is the kernal of monetarism.   The behaviour of illiquid asset acquisition is more uncertain.   It clearly is influenced by both interest rates and changes in the value of private sector wealth.   In 1974 and 1975 interest rates rose to unprecedented levels and the market value of most asset holdings collapsed.   Perhaps it is not surprising that private sector acquisition of financial assets was very different from that in the 1960s and early 1970s.

A much fuller macroeconomic picture - incorporating the effects of monetary policy on economic activity and, hence, on the public sector's financial position - would be needed to assess the new Cambridge arguments properly.   But new Cambridge economists treat any mention of money with disdain.   One wonders why.

(2)   Calls for balanced budgets are legion.   For an example of indifference to the budget position see Sam Brittan's comment in The Financial Times of 5 February 1976.   "Events in the last few months have shown that monetary control is the important element of 'sound finance' and that the balanced budget doctrine is, for a thousand and one different reasons, as absurd as Keynes once thought it to be."

(3)   The argument in this paragraph has an obvious relevance to Professor Hayek's advocacy of 'laissez-faire' in money in Choice in Currency Institute of Economic Affairs: 1976.   In fact, the historical evidence is that, by a process of natural selection, the financial system chooses one money, the liabilities of "the lender of last resort"; and the lender of last resort is always banker to the government because it is the strongest and most reliable financial institution.

(4)   Reprinted in The Collected Writings of John Maynard Keynes vol. IX Essays in Persuasion Macmillan: 1972 pp. 76-82.

(5)   White Paper on Employment Policy H.M.S.O.: 1944 pp. 25-26 paragraphs 77-79. The phrase "fiscal frenzy" is used by David Rowan in a recent Banca Nazionale del Lavoro Review.

I also recommend the reader to look at Sir Herbert Brittain The British Budgetary System George Allen & Unwin: 1959, where the purpose of the above-the-line and below-the-line distinction is outlined by a traditional "Treasury knight" in ch. 2. On p. 53 there is a pellucid explanation of the need to keep borrowing above-the-line under control. "Over a period of years the Budget should certainly be balanced above-the-line; otherwise that part of the debt not covered by new assets will increase indefinitely." The exceptional economic stability of the 1950s - the heyday of "the Keynesian revolution" - may well have been the product of sound finance of the most orthodox variety.

(6)   Strictly speaking, the debt/income ratio in the appendix is not the ratio of national debt to national income, but the ratio of illiquid interest-bearing government debt to national income. In Britain such debt can, of course, be roughly equated to the outstanding issue of gilt-edged securities. Reserve assets and notes and coin do constitute part of the national debt, correctly defined.

The proviso is immaterial to the argument.

(7)   Three further sets of observations may be relegated to a final footnote.

First, there is the important practical question of the appropriate budget deficit concept. The vital distinction here is between public sector expenditures which are expected to be covered by taxation and public sector expenditures which are expected to be covered by ongoing commercial operations and the associated receipts. Borrowing incurred by nationalized industries should not be included in the budget deficit if it will be repaid by a subsequent financial surplus arising from such receipts. Note that this is close, but not identical, to the old Treasury doctrine of distinguishing between above-the-line and below-the-line commitments.

Second, it has been pointed out to me that there is already a large literature on fiscal and monetary policy in long-run equilibrium, based on Tobin's model of portfolio balance. I can only say that such examples of this literature as I have read pay scant attention to institutional realities. Money drops like manna from heaven, bonds are issued to buy machines which are rented back to the private sector, and so on. That would not matter if more realistic assumptions were difficult to model - but, as I hope this paper shows, they can be analysed quite simply.

Third, some interesting questions would arise for international finance theory if the budget deficits indicated by the present analysis differed from country to country. I suspect it could be shown that the conditions for monetarist equilibrium could not be satisfied in a fixed exchange rate world where different countries had different growth rates. See Robert A. Mundell International Economics Macmillan: 1968 pp. 126-129 for a tentative account of the implications of growth rates for budget policy and the balance of payments. Mundell's analysis - in these pages, at least - is confined to the budget deficit necessary for monetary reasons and does not take account of more long-term debt issues and the wider portfolio balance problems they would raise.

Appendix

1. The economy under consideration

$$Y = G + P$$
　　　　　　　　　　　　　　　　　　　　1. identity

Y - national income
G - public expenditure
P - private expenditure

$$M = L + C$$
　　　　　　　　　　　　　　　　　　　　2. identity

M - money supply
L - bank deposits
C - notes and coin in circulation with the public

$$B = dC + dR + dD$$
　　　　　　　　　　　　　　　　　　　　3. identity

B - budget deficit
R - reserve assets
D - illiquid fixed-interest bond issue (i.e. gilts)

$$L = bR$$
　　　　　　　　　　　　　　　　　　　　4. institutional assumption

b - reserve asset ratio

2. Monetarist equilibrium

$$M = \frac{1}{k} P$$
　　　　　　　　　　　　　　　　　　　　5. behavioural assumption

k - the Cambridge "k", constant in equilibrium

$$C = aP$$
　　　　　　　　　　　　　　　　　　　　6. behavioural assumption

a - parameter, constant in equilibrium

$$L = cP$$
　　　　　　　　　　　　　　　　　　　　7. behavioural assumption

c - parameter, constant in equilibrium

note that $a + c = \frac{1}{R}$

$$\frac{dY}{Y} = \frac{dM}{M} = \frac{dP}{P} = g$$
　　　　　　　　　　　　　　　　　　　　8. equilibrium condition

relationship 8 is a statement of the "monetarist rule" - it is assumed to achieve price stability and, hence, constant interest rates - we may, therefore, write

$$\frac{dY}{Y} = \frac{dD}{D} = g$$
　　　　　　　　　　　　　　　　　　　　9. equilibrium condition

g - growth rate

to express the constancy of the debt interest/income ratio

3. i. determination of dC in equilibrium

from 6   dC = a dP

from 8   dC = aḡ P   10.

   ii. determination of dR in equilibrium

from 4 and 7   bR = cP

              $dR = \frac{c}{b} dP$

from 8 $dR = \frac{c}{b} gP$ 11.

   iii. determination of dD in equilibrium

from 9   dD = gD   12.

4.   Result

from 3, 10, 11 and 12 $B = ag\ P + \frac{c}{b} gP + gD$

dividing throughout by Y, $\frac{B}{Y} = ag\ \frac{P}{Y} + \frac{c}{b}\ g\ \frac{P}{Y} + g\ \frac{D}{Y}$

therefore, the equilibrium ratio between the budget deficit and national income depends on

g – growth rate

a $\Big\}$ k – parameter determined by the coefficient of demand
c)   for money

b – reserve asset ratio

$\frac{P}{Y}$ – ratio of private expenditure to national income

$\frac{D}{Y}$ – ratio of national debt to national income

5.   Application

in the British case   g = 0.03

                             a = 0.1

                             c = 0.2

                             b = 6

                             $\frac{P}{Y}$ = 0.75

                             $\frac{D}{Y}$ = 0.6

inserting these values into the formula yields a budget deficit/national income ratio of 2.2 per cent