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Monetarism and UK monetary policy*

Nicholas Kaldor†

The basic contention of monetarists is that there is a *stable function* of money in relation to income (which comes to the same as saying that there is a stable velocity of circulation, invariant to changes in the quantity of money in circulation). This assertion, first put forward by the early followers of the quantity theory of money in the 18th and 19th centuries, was denied by Keynes and reasserted by Friedman on the basis of statistical evidence which shows a high correlation between changes in the amount of money in circulation and changes in the money value of the national income. Friedman admitted, however, that there is nothing in his findings which logically excluded an interpretation diametrically opposite to his own—i.e., that the change in the money supply may be the consequence, not the cause, of the change in money incomes (and prices), and that the mere existence of time-lag—that changes in the money supply *precede* changes in money incomes, is not in itself sufficient to settle the question of causality—one cannot rule out the possibility of an event A which occurred subsequent to B being nevertheless the cause of B (the simplest analogy is the rumblings of a volcano which frequently precede an eruption). Apart from that it is notoriously difficult to establish the existence of a lead of one factor over another, when both move in the same direction in time and the whole question of the existence of a ‘lag’ is by no means established.‡

In the case of commodity-money, the activities of the mining industry increase the world money supply which is thus determined by factors that are largely independent of the public’s demand to hold money. It is possible, therefore (as a result of, say, the discovery of new gold fields), for additional money to appear which will, in its impact effects, cause a fall in its value relative to other commodities until all the new money finds a ‘home’—in the increased balances held by some or all money users.

If the proportion of income or expenditure which people wish to hold in the form of money balances (the famous k in the Cambridge quantity equation) is rigidly given, and real income (or output) is also given, the only way in which ‘new money’ can be

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† Emeritus Professor of Economics, University of Cambridge. This paper is a slightly revised extract from a Memorandum of Evidence on Monetary Policy submitted to the House of Commons Select Committee on the Treasury and the Civil Service (HMSO, 1980). The author is indebted to P. E. Atkinson, M. V. Clark and K. J. Couatts of the Department of Applied Economics, Cambridge for the preparation of tables and regressions.

‡ Cf Table 4 below for a demonstration that the existence of a time lag of 2 years or less cannot be established on the available evidence.

absorbed is through a fall in its value in terms of other commodities which, by definition, equals the rise in the value of other commodities in terms of money.†

However, with credit-money this kind of problem *cannot* arise since credit-money comes into existence as a result of borrowing (by businesses, individuals or public agencies) from the banks; if, as a result of such borrowing, more money comes into existence than the public at the given level of incomes (or expenditures) wishes to hold, the excess gets directly or indirectly repaid to the banks and in this way the 'excess money' is extinguished. In technical parlance, the supply of credit-money is infinitely elastic at the given rate of interest and this alone rules out the possibility that an 'excess' supply of money relative to demand, or *vice versa*, should be the cause of a 'pressure on prices', upwards or downwards. In a credit-money economy, unlike with commodity money, supply can never be in excess of the amount individuals wish to hold. The Central Bank has no direct control over the amount of money held by the non-banking public in the form of deposits with the clearing banks; its power is in determining the short rates of interest, either directly through announcing a minimum lending rate (or a re-discount rate) or indirectly through influencing money market rates by open market operations. In the absence of quantitative controls over the clearing banks' lending or borrowing activities, it can only influence the rate of change in the volume of bank deposits held by the public through the effect of changes in interest rates; these effects (for reasons discussed below) are highly uncertain. In the case of credit-money therefore, in contrast to commodity-money, it is *never* true to say that the level of expenditure on goods and services rises in *consequence of* an increase in the amount of bank-money held by the public. On the contrary, it is a rise in the level of expenditure which calls forth an increase in the amount of bank money. In a credit money economy the causal chain between money and incomes or money and prices is the reverse to that postulated by the quantity theory of money.

This does not mean that a 'monetarist' economic policy such as that of the present government is futile. But its real effect depends on the shrinkage of effective demand brought about through high interest rates, an overvalued exchange rate and deflationary fiscal measures (mainly expenditure cuts), and the consequent diminution in the bargaining strength of labour due to unemployment. Control over the 'money supply', which has in any case been ineffective on the government's own criteria, is no more than a convenient smoke-screen providing an ideological justification for such anti-social measures.

The definition of money

The meaning of money in everyday parlance comprises everything which is widely used as an instrument for paying for goods and services bought, or for hire of labour or other 'factors of production', which is accepted by the courts as a proper medium for discharging a debt, and by the Government for the payment of taxes. On this definition

† Another important factor about commodity-money (which is not true about credit money) is that an increase in its supply invariably implies either an increase in incomes earned in the production of that commodity (as is the case when new gold mines are discovered) or at least a capital gain to those who obtain gold by robbery of some kind (as was the case with the 16th century Spaniards). Hence the very addition to the supply of commodity-money implies an increase in the demand for other commodities. In the case of credit money, if the money supply is increased on the initiative of the central Bank, all that happens is that there is a shift in portfolio holdings with the public holding more money and less bills or bonds. But no one is enriched thereby and therefore no inducement is offered for an increase in the demand for commodities. If on the other hand an increase in the money supply is the result of increased borrowing from the banks, then the former is the consequence, and not the cause, of the latter.

'checking accounts' (or current accounts) with any of the clearing banks form part of the 'money supply' of the non-banking public as well as the notes and coins in circulation outside the banking system. The common feature of all these forms of money is that they do not yield interest; they are held purely for convenience. This, roughly, is the definition of £M1. There are, in addition, 'hidden' forms of money which are fully equivalent to money though they are not comprised in the statistics. One of these is travellers cheques outstanding which can be converted into cash at any time; another, and quantitatively more important, form consists of unutilised overdraft facilities granted by banks to their customers, which enable the holder to draw upon his account for making payments in excess of his actual credit balance. Finally, there are notes and deposits in foreign currencies which are 'potential money' in the sense that they can be converted into legal tender money at the current rate of exchange, but where the holder bears the risk (or benefits from any gain) of future depreciation or appreciation.

In addition to this there are interest-bearing deposits with banks and other financial (or deposit-taking) institutions, which cannot be directly transferred from one person to another, and hence are *not* money, but which can be so easily converted into money that they cannot reasonably be excluded in measuring a person's ability to command resources in terms of general purchasing power. In numerous cases transfers from 'deposit accounts' to 'current accounts' can be effected promptly, without delay; and there can be permanent arrangements by which such transfers are effected automatically by the branch manager (at the end of a week or a month) so as to minimise the interest loss involved in holding checking accounts. For that reason it was always customary to treat deposits of both kinds of the *clearing banks* (i.e. the banks who offer facilities for effecting transfers between accounts by means of cheques issued by the account holder) as part of the 'money supply'. This is now regarded as the preferred definition of a 'policy target'—not because interest-bearing deposits are a means of payment (which they are not) but simply because they can be so easily converted into media of payment that any 'target' which excludes them is pretty meaningless for policy purposes.

However, on this reasoning there is no justification for making any sharp distinction between (interest-bearing) deposits with the clearing banks, and deposits with other banks and deposit-taking financial institutions, such as savings banks, building societies and 'secondary banks'[†] (which often are no more than a wholly owned subsidiary of one of the main clearing banks). In addition various forms of short-term paper—such as Treasury Bills held outside the banking sector, certificates of deposits or bank-accepted commercial bills so held, and finally gilt-edged of short maturity are all convertible into cash—either immediately (if they are marketable like bonds or bills) or on giving the customary notice of withdrawal (which is not invariably insisted upon). The conclusion must be, therefore, that once interest-bearing financial assets are admitted as part of the 'money supply' (and for reasons explained, it is impossible to exclude them if the notion of 'controlling the money supply' is to have any credibility) there is no clear demarcation line to be drawn between 'monetary' and 'non-monetary' financial assets. Any *broad* definition of the money supply is therefore arbitrary since it

[†] The growth of such 'secondary banks' has been greatly stimulated as a result of the so-called 'corset', i.e. the obligation, extending to clearing banks only, to make Supplementary Special Deposits with the Bank of England whenever the growth of their interest-bearing eligible liabilities—i.e. liabilities to the non-banking private sector—exceed a certain target. It is a result of the growth of such avoidance practices that the monetary authorities have now abolished the 'corset' altogether—though without apparently putting anything in its place. See Cmnd 7858, Chapter 2 (HMSO, 1979).

is invariably surrounded by a spectrum of 'liquid assets' which are not comprised in it but which are close substitutes to it.

This problem of the definition of 'money' and its consequences was curiously neglected in the literature until it was brought into the open in the Radcliffe Report which took the line that 'while we do not regard the supply of money as an unimportant quantity, we view it as part of the wider structure of the liquidity in the economy. It is the *whole liquidity position* which is relevant to spending decisions . . . spending is not limited by the amount of money in existence'.† Until then, British, American and Continental writers have accepted without question that while a proper definition of the 'money supply' must be much broader than bank notes and coins in circulation, and comprises the means of payments held in the form of bank deposits, this does not invalidate the postulate that the 'money supply', whether a broader or a narrower definition is chosen, is directly controlled by the monetary authority (i.e. the Central Bank) through the control of the 'monetary base', in consequence of which the *supply* of money is exogenously given, independently of the demand for it. There were endless disputes between monetary 'experts' as to which of the many 'instruments' of control—the obligatory 'cash ratio' or the 'prudential liquidity ratio', or the 'real' prudential cash ratio of around 2%—was the critical constraint on the relationship between the superstructure of bank money and the underlying 'base money',‡ but this did not call into question the assumption that some instrument exists which makes the 'money supply' invariant with respect to changes in the demand for holding bank deposits.

Keynes himself never really questioned the assumption that the *supply of money*, however defined, is exogenously determined by the monetary authorities. At least his equations (whether those in *Treatise in Money* published in 1930, or in the *General Theory* of 1936) are not consistent with any other interpretation.§ They did not concern the supply of money, but the demand for it, which he had come to regard as a function of the rate of interest—because the loss of interest is the sacrifice involved in holding money. He considered the 'money supply' in the broad sense and was not troubled by the fact that strictly speaking his liquidity-preference theory only applied to non-interest bearing deposits.||

† *Report of the Committee on the Working of the Monetary System* (1959), paras 389–391 (italics not in the original).

‡ Before World War II there was an obligatory minimum rate of 8% of 'vault cash' plus balances with the Bank of England against the *total* of demand and time deposits. However in practice this was a pious fraud which was habitually circumvented by the simple device of the big five clearing banks making up accounts on different days of the week, from Monday to Friday, so that the *same cash* was exhibited five times a week as it was transferred for accounting purposes from one bank to another each day of the week. The true 'monetary base' (if it existed) was never published though it was known that, for purely prudential reasons, the big clearing banks tried to maintain a minimum 'vault cash' (including their balances with the Bank of England) of around 2% of liabilities. After World War II, the 8% minimum cash ratio was formally abandoned in favour of a 28% liquidity ratio; this however comprised many items, the supply of which were not under the control of the Central Bank at all (such as commercial bills or short-dated bonds) and it was soon recognised that this new 'liquidity ratio' was quite as capable of manipulation as the old cash ratio was. However, despite this, the question of whether the 'money supply' is endogenous to the banking system, and *not* exogenous to it, was not really posed (as far as I know) by any reputable economist writing on the subject, apart from Wicksell and his followers.

§ The equation $M=L(Y,r)$ (Keynes, p. 189) assumes M as exogenously given. The Radcliffe Committee's view was that the rate of interest, r , is determined by the monetary authorities while the quantity of money is determined by the desire of the public for liquidity which depends both on incomes and on the rate of interest, i.e., r determines the relevant point on the demand curve for money.

|| The reason for this probably was that by the 'rate of interest' he invariably meant the *long-term* rate of interest (as measured by, say, the yield of Consols) whilst the interest paid on time deposits, under the cheap money regime prevailing in the 1930s, was 1–1½% below the Bank Rate, and hence something quite negligible.

There was no real dissension from the view, according to which the real dividing line between Keynesian and non-Keynesian economics turned on an empirical question: it was concerned with the empirical value of the interest elasticity of the demand for money.† In fact the real difference goes much deeper—it concerns the question whether the ‘supply side of money’, as determined by the monetary authorities, is best represented in terms of the *quantity* of money supplied or in terms of the *interest rate* fixed by the Central Bank, which determines the cost of credit, leaving the quantity outstanding to be determined by demand. If the elasticity of the demand for money in terms of the rate of interest is small or non-existent (as we shall argue that it is, on the basis of empirical evidence) this does not argue *in favour* of the efficacy of monetary controls (as the adherents of the quantity theory of money would have it) but on the contrary, of the impotence of the monetary authorities to vary the quantity of money otherwise than in response to variations in demand. On this view the close correlation between the quantity of money and the level of income is proof, not of the *importance* of monetary policy, but of precisely the *opposite*, the variation in the stock of money being no more than a reflection of the change in the volume of money transactions. The greater the response of the ‘money supply’ to changes in the volume of money transactions, the less is there a need to economise on money; and this is the explanation of the apparent paradox that the supply of money and the velocity of circulation are often found to move in the *same* direction, instead of in opposite directions.

The interest elasticity of money

Figure 1 shows for the United Kingdom and the United States the change in the volume of demand deposits and interest-bearing time deposits for the years 1963–78, expressed

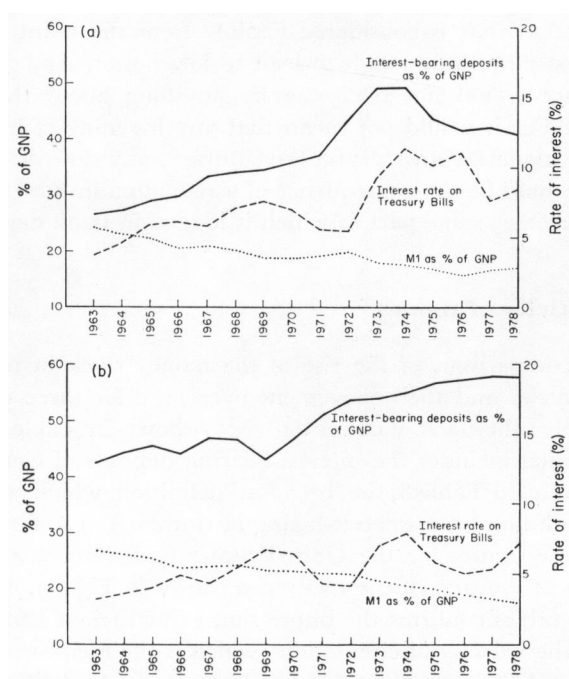


Fig. 1. Movements in interest rates and the money supply. (a) UK; (b) US.

† Cf. Johnson, H. G., *Monetary Theory and Policy*, *American Economic Review*, 1962, pp. 344–345.

as a percentage of GNP, and the prevailing short-term interest rates for those years. The definition of interest-bearing deposits in this table is broader than that included in the statistics of the United States for M2 or in that of the United Kingdom for M3, and includes savings deposits with non-bank deposit-taking institutions such as building societies. In both countries the trend of interest rates was upwards and they both show an inverse correlation between M1 (interest-free deposits) and the interest rate; the movements over time in both countries (and the magnitude of the ratios to the GNP in the two countries) are remarkably similar, thus confirming Keynes' hypothesis that the higher the sacrifice of interest the more people wish to economise on money balances. The interest-elasticity of these balances, however, is not very large; the demand for money as a proportion of income fell by about one-third in a period in which the short-term interest rate more than doubled (indicating an elasticity which is much less than unity).

With interest-bearing deposits on the other hand, it was the other way round; with the rise of the interest rate, balances increased as a percentage of income, and this increase has more than offset, in both countries, the decline of non-interest bearing balances. Hence the net effect of interest changes on a broad definition of the 'money stock' was perverse—a rise in interest rates appears to have led to the 'money stock' rising faster than money income, not lagging behind it. On the basis of the historical experience of these two countries, the Central Banks' habit of using interest rates as a regulator of the money supply† appears singularly inept—higher interest rates tend to *increase* the 'money supply' and not decrease it. Any positive effect of reducing growth of the money supply could only come about as a consequence of the decrease in total savings resulting from lower real incomes and employment; it is doubtful, however, whether taking interest rates alone (i.e. ignoring fiscal measures) the effects—within the range of variation that is considered feasible from the point of view of business solvency—would be powerful enough to lead to lower monetary growth. And if they did, this occurrence would not really signify anything about the *modus operandi* of monetary controls. For it would not mean that any lessening of inflation occurred in *consequence* of lower monetary growth; on the contrary, any slow-down in the growth of the 'money stock' would be the consequence of a reduction in total incomes, and hence in the volume of savings, some part of which is lodged in bank deposits.

The income elasticity of money

Tables 1–3 show comparisons of the rise of the money stock in relation to GNP for ten industrial countries and their movement over time for three different definitions of the money supply: the narrow definition (M1) shown in Table 1, the usual broad definition (M3) which includes the interest-bearing deposits of clearing banks, shown in Table 2, and finally, in Table 3, the 'broadest' definition, which comprises all deposits (including those with non-bank deposit-taking institutions) in so far as they are statistically available. (The figures for the United States and the United Kingdom in this table are the same as the sum of the two series shown in Fig. 1).

A study of these tables confirms the impression gained when I first studied the level and movement of the velocity of circulation (which is the reciprocal of the ratio of the money stock to the GNP) in preparing my evidence to the Radcliffe Committee in June

† Cf. the Mais Lecture of the Governor of the Bank of England, 1978.

1958†. I then wrote that 'in some communities the velocity of circulation is low, in others it is high, in some it is rising and in others it is falling, without any systematic connection between such differences and movements and the degree of inflationary pressure, the rate of increase in monetary turnover, etc.‡ The present tables which relate to a subsequent period, bear out the same conclusions as the earlier study. Taking the 'narrow' definition of money, the figures show a falling trend in most countries, with the notable exception of Italy and Japan, where the period 1958–1978 had shown a remarkable rise in the ratio (i.e. a *fall* in the velocity of circulation) despite the fact

Table 1. Ratio of narrow money supply (M1) to nominal GNP in ten industrial countries (in percentages)

Country	1958	1970	1978	Change in ratio 1958–78 (per cent)	Increase in money supply 1958–78 (per cent)	Increase in GNP 1958–78 (per cent)
Belgium	40.2	29.3	25.9	–35.6	279.6	491.6
France	31.2	29.5	26.5	–15.1	648.0	780.5
Germany	17.1	15.1	17.6	2.9	470.0	454.0
Italy	30.0	53.0	55.6	85.3	2058.0	1065.8
Japan	22.6	29.1	33.4	47.8	2546.0	1690.5
The Netherlands	28.2	22.5	21.2	–24.8	490.7	686.1
Sweden	12.8	10.4	10.7	–16.4	423.8	525.8
Switzerland	52.9	48.7	48.2	–8.9	354.0	398.1
United Kingdom	n.a.	18.7	17.1	–16.6 ^a	251.0 ^a	30.8 ^a
United States	31.6	23.0	17.1	–45.9	153.4	367.6

n.a. not available

^a Changes are for 1966–78

Sources: International Financial Statistics; Bank of England Statistical Abstract No. 2.

Table 2. Ratio of broad money supply (M3) to nominal GNP in ten industrial countries (in percentages)

Country	1958	1970	1978	Change in ratio 1958–78 (per cent)	Increase in broad money supply 1958–78 (per cent)	Increase in GNP 1958–78 (per cent)
Belgium	46.1	45.1	47.1	2.2	503.6	491.6
France	33.4	43.7	51.2	53.3	1247.4	780.5
Germany	36.0	52.0	67.0	86.1	930.8	454.0
Italy	51.9	82.3	96.5	85.9	2068.3	1065.8
Japan	49.6	73.8	86.6	74.6	3029.9	1690.5
The Netherlands	44.7	49.3	58.8	31.5	933.9	686.1
Sweden	35.7	32.2	38.2	7.0	570.4	525.8
Switzerland	98.5	118.6	125.9	27.8	536.6	398.1
United Kingdom	40.6	34.8	34.9	–14.0	499.7	596.8
United States	45.5	45.9	45.3	–0.4	365.0	367.6

Sources: International Financial Statistics; Bank of England Statistical Abstracts.

† Cfr. Committee on the Working of the Monetary System, 1960, pp. 146 ff.

‡ *Ibid.*, p. 146. In the attached footnote I gave the figures of the ratio of the money supply to the GNP and its movement over time for a number of (developed and developing) countries.

Table 3. Ratio of broadest money supply^a to nominal GNP in eight industrial countries (in percentages)

Country	1958	1962	1966	1970	1974	1978	Change in ratio 1958-78 (per cent)	Increase in broadest money supply 1968-78 (per cent)	Increase in GNP 1958-78 (per cent)
Belgium	58.9	62.2	60.8	57.4	56.7	59.5	1.0	496.3	491.6
France	44.0	53.0	58.1	61.8	71.3	74.3	68.9	1386.0	780.5
Italy	60.8	77.2	83.1	91.2	102.2	100.0 ^b	64.5 ^b	1546.8 ^b	901.7 ^b
Japan	n.a.	n.a.	n.a.	93.1	105.6	116.1 ^b	9.9 ^{bc}	216.3 ^{bc}	153.5 ^{bc}
The Netherlands	57.1	62.9	60.6	62.1	63.4	71.1	24.5	879.2	686.1
Sweden	67.2	68.0	64.3	63.1	n.a.	n.a.	-6.1 ^d	157.1	173.6
United Kingdom	51.3	49.8	50.3	54.5	66.9	57.9	12.9	687.0	596.8
United States	64.4	66.7	67.5	69.7	75.2	74.7	16.0	442.5	367.6

n.a. not available

^a Money *plus* quasi-money *plus* savings deposits with other deposit-taking institutions. Since the latter holds deposits with commercial banks there is some element of double-counting in these figures. No figures for other deposit-taking institutions are provided in *International Financial Statistics* for Germany and Switzerland and which are therefore excluded from the table.

^b 1977 figures are used rather than 1978 figures

^c Change for period beginning 1970.

^d Change for period ending 1970.

Sources: International Financial Statistics; Bank of England Statistical Abstracts No 1, 2, Financial Statistics.

that these were two countries with the highest rates of increase in money GNP, and possibly of inflation, as well.† This is in contrast to the 'age old experience' that in a prolonged inflation the velocity of circulation *rises*, as people get accustomed to it and begin to anticipate it.‡ All other countries in Table 1 (with the exception of Germany where the ratio remained remarkably stable) show a fall in the ratio (i.e. a rise in velocity) which was largest in the case of the United States, Belgium and The Netherlands, and significant in Sweden and the United Kingdom. There are remarkable differences *between* countries in the ratios themselves (varying between 85.6% for Italy to 10.7% for Sweden) which are difficult to explain since these figures refer to cash in hand plus current accounts, the demand for which depends on the factors determining 'transaction velocity'—which in turn supposedly reflects the frequency of income payments and of regular out-payments (for rent, gas, electricity, etc.)—factors in which the habits of different countries cannot be so different from each other. The figures for 1978 show in fact remarkable similarities for three countries (i.e. United States, United Kingdom and Germany) but why should the income-velocity of circulation be five times as high in Sweden as it appears to be in Italy or in Switzerland?

The figures for M3 show a similar range of variations *between* countries, but the general trend is upwards, not downwards (only the United Kingdom shows a significant decrease in the ratio over the last 20 years), and the highest increases shown are for Germany (whose rate of inflation was one of the lowest) as well as for Italy and Japan (whose inflation was among the highest). The explanation probably is that interest-bearing bank deposits are a popular form of saving in some countries, so that the increase in deposits in relation to income shows the effect of the accumulation of personal savings, some proportion of which are held in this form. Some support for this hypothesis is shown by comparison with Table 3 which shows that in the case of Italy money on the 'broadest' definition (which includes in addition deposits with savings banks, building societies, etc.) was very little larger, as a proportion of income, than the 'broad' definition which includes only bank deposits; while in the case of Japan the proportional difference due to the addition of such deposits was less than in the case of the United States and the United Kingdom, which latter show a trend increase in the 'broadest' definition, but not in the 'broad' definition. On the other hand there are countries which show a strongly rising trend on both definitions (France and The Netherlands) and those who do not show such a trend on either definition (Belgium and Sweden).

I cannot pretend to explain these wide-ranging differences in both the level and the time-trend of the ratio of money to income, whatever definition is chosen. The fact that differences appear substantial on the 'broadest' definition as well as on the 'narrower' definition suggest to me that they cannot be explained simply in terms of differences of classification, or even differences in saving habits or in the velocity of circulation due to differences in the frequency of income payments or in the settlement of debts. They rather suggest that money, contrary to the fashionable view, is an 'unimportant' quantity—if the Swedes are content with so much *less* money than the Swiss, for example, this may be due to nothing more important than historical accident which make the public of one country become used to having so much larger cash balances than that of another. It certainly does not suggest that the plenitude of money of the Swiss makes

† The figures show for 1958–78 an annual rate of growth of income of 12% for Italy, of which 7.4% represented inflation, and 14% for Japan, of which 5.2% was due to price-inflation.

‡ Cf. F. A. Hayek, letter to *The Times*, 31 May, 1980.

them *more* inflation-prone than the 'sparseness' of money which characterises the Swedes or the British (of all people!).

The myth of the time lag

The common article of faith of all monetarists is that changes in the money supply affect inflation with a time lag, which is normally taken to be 2 years. Thus the Minister of State in the Treasury (Lord Cockfield) assured the House of Lords on numerous occasions that

there can be no doubt, based on both theory and practical experience that a growth in the money supply is followed after a period of time by a rise in the rate of inflation, and equally, and more hopefully, that a fall in the rate of growth of money supply is also followed in due time by a fall in the rate of inflation. (House of Lords, *Official Report*, 11 June 1980, col 517.)

Almost identical statements were made by the Chancellor and Treasury Ministers on numerous previous occasions. Prior to the formation of the present Government, the same assertion was made by various economists and writers, among them Mr. W. Rees Mogg in *The Times* of July 16, 1976. The basis of this assertion was that the inflation of the years 1974–75 was correctly 'predicted' by the increase in the money supply which occurred 2 years earlier, in 1972–73.

As Table 4 shows, the average annual percentage increase in £M3 in the five years 1971–76 in the United Kingdom 'predicted' the average annual increase in the money value of the GNP between 1973–78 (that is to say, 2 years later) with quite remarkable precision: the average percentage difference between the two series was only 0.23%. But Table 4 also shows that this was a unique occurrence; it was not true of the United Kingdom either for the preceding period 1963–68, or for the succeeding period 1975–78, for both of which the closest fit is shown when *no* time lag is assumed. The same is true for the average of the nine other countries in the table which show that in the large majority of cases, the best fit is obtained when no time lag is assumed, for all three periods shown. There are a few isolated cases in which the postulate of a 2 year lag shows a smaller discrepancy—such as Germany in 1963–68, but here the discrepancy between the money series and the GNP figures is so large in relation to the total ($4\frac{1}{2}$ – $5\frac{1}{4}$ % according to the time lag assumed, with a GNP rise of only $7\frac{1}{4}$ %) that it is difficult to attach any significance to the fact that one lag gives somewhat better results than another. The same is true of Switzerland, in the case of which the gaps are insignificant for all three money-series for the period 1963–68, but are enormous for all three series in both the 1973–78 and 1975–78 periods—the percentage growth of the money supply being over twice as large as the percentage growth of the money GNP in all three cases.

Clearly the United Kingdom figures for the middle period, 1973–78—a discrepancy of only 0.23% with a 2-year lag, but 3.29% with a 1 year lag and 5.71% with no lag—are a pure fluke. They are the accidental result of the dominating influence of two events which were themselves wholly unrelated to each other; the adoption of the system called 'Competition and Credit Control' by the Bank of England in 1971 and the Arab-Israel War (the so-called Yom-Kippur War) of October 1973 which resulted first in an oil embargo on certain countries and then in a fourfold rise in the world oil price, which in turn induced the world-wide inflation of the years 1974–75.

We shall discuss the consequences of the change in banking rules below. Here we merely wish to note that the large increase in the money supply (£M3) by 58% was mainly due to the increase in interest-bearing time deposits (which increased by 117%

Table 4. Average annual growth rates of the money supply (M3) and GNP

Country	1961-66		1962-67		1963-68		1963-68		1971-76		1972-77		1973-76		1973-78		1973-78		1974-77		1975-78		1975-78	
	M3	GNP	M3	GNP	M3	GNP	M3	GNP	M3	GNP	M3	GNP	M3	GNP	M3	GNP	M3	GNP	M3	GNP	M3	GNP	M3	GNP
Belgium	8.49	8.50	8.50	8.34	8.43	8.43	13.33	11.86	10.60	11.32	12.12	12.23	12.12	12.12	12.12	11.32	10.60	11.32	12.12	12.23	12.12	12.23	9.73	9.60
France	12.57	11.49	10.99	13.54	8.87	8.87	15.84	14.93	14.52	13.75	15.27	14.07	15.27	14.07	15.27	13.75	14.52	13.75	15.27	14.07	15.27	14.07	13.03	13.63
Germany	11.92	12.55	13.54	7.23	7.23	7.23	11.71	10.66	10.46	6.87	10.61	10.80	10.61	10.80	6.87	6.87	10.46	6.87	10.61	10.80	10.61	9.76	7.45	
Italy	14.17	13.39	13.08	9.33	9.33	9.33	20.47	21.33	21.25	21.68	20.35	22.55	20.35	22.55	21.68	21.25	21.33	21.68	20.35	22.55	20.35	22.08	20.90	
Japan	19.19	18.34	15.97	16.11	16.54	16.54	16.11	13.46	12.73	12.78	13.15	13.01	13.15	13.01	12.78	12.78	12.73	12.78	13.15	13.01	13.15	12.56	11.51	
The Netherlands	10.13	10.74	11.32	11.33	11.33	11.33	15.38	14.99	14.05	10.76	15.44	14.27	15.44	14.27	10.76	10.76	14.05	10.76	15.44	14.27	15.44	13.77	10.50	
Sweden	8.16	8.44	9.30	8.95	8.95	8.95	14.07	13.09	13.56	12.25	14.15	7.31	14.15	7.31	12.25	12.25	13.09	12.25	14.15	7.31	9.27	10.82		
Switzerland	8.87	8.19	8.68	8.90	8.90	8.90	6.70	6.30	7.30	3.14	6.71	6.93	6.71	6.93	3.14	3.14	6.30	3.14	6.71	6.93	6.71	7.72	2.78	
United Kingdom	5.17	6.77	6.92	7.61	7.61	7.61	17.10	13.58	11.16	16.87	10.52	9.48	10.52	9.48	16.87	16.87	13.58	16.87	10.52	9.48	11.94	15.74		
United States	7.51	8.11	8.90	8.02	8.02	8.02	9.44	8.90	8.76	10.24	7.93	7.95	7.93	7.95	10.24	10.24	8.90	10.24	7.93	7.93	9.29	11.65		

Average percentage differences (without regard to sign) between changes in M3 and GNP	1963-68 Period			1973-78 Period			1975-78 Period		
	Two year time lag	One year time lag	No time lag	Two year time lag	One year time lag	No time lag	Two year time lag	One year time lag	No time lag
United Kingdom	2.44	0.84	0.69	3.29	3.29	5.71	5.22	6.26	3.80
All countries, excl. UK	2.05	1.75	1.59	1.79	1.79	1.76	2.83	2.74	1.93
All countries, incl. UK	2.09	1.66	1.50	1.94	1.94	2.15	3.07	3.10	2.12

Sources: International Financial Statistics, Bank of England Statistical Abstracts.

in 2 years whilst sight-deposits, M1, increased only by 19.5%). This terrific 'bulge' in interest-bearing deposits was largely the consequence of banking policy changes—the clearing banks, freed from control, successfully diverted funds from normal channels and indulged in, or tolerated, a great deal of financial manipulation (e.g. the so-called 'round-tripping' by which money borrowed from one bank is re-deposited in another). There was no conceivable connection between these events and the large world-wide inflationary wave induced by the 'oil shock' of 1973, which had particularly grave consequences on the severity of inflation in the United Kingdom in 1974, on account of the 'threshold' arrangements (these were part of Phase 3 of the Heath Government's income policy but fixed before the big oil price rise) which, by the end of 1974, nearly doubled the inflation rate as compared with what would have happened otherwise.† Thus the remarkably rapid rise of the money supply in 1972–73 and the rapid inflation 2 years later were a pure coincidence which had no parallel in any earlier or later period. Of the thirty observations recorded in Table 4 (i.e., for each of ten countries for three different periods) in nineteen cases the closest 'fit' was obtained when *no* time lag was assumed (i.e., when both the money series and income series related to the *same* period), a 1 year lag gave the 'best fit' in four cases and a 2 year lag in seven cases; but with the sole exception of the United Kingdom for 1973–78, none of these 'exceptions' appears significant; either the difference in the closeness of fit is too small (as for example for Switzerland in 1963–68) or else the fit is so poor in all three cases (as, e.g., for Switzerland in 1973–78 or Germany in 1963–68) as to make any conclusion drawn from them highly suspect. There is certainly nothing in these figures that would justify the far-reaching and confident assertions of Treasury Ministers about the existence of a significant time lag, which, as was repeatedly asserted, is based on 'empirical evidence' or 'practical experience'.

Present UK monetary policy

The core of the economic philosophy of the present Treasury Ministers is that public expenditure is at the heart of Britain's economic difficulties,‡ because it is the cause both of excessive taxation and of the large borrowing requirement which in turn is the real cause of inflation because it is responsible for an increase in the money supply which is the immanent cause of the rise in prices.

All this is best summarised by the statement made last January by the Financial Secretary of the Treasury (Mr Lawson):

Let me start with two simple facts. The first is a statistic. The PSBR is at present about 4½% of total gross domestic product (GDP)—compared with an average of only 2½% in the 1960's. The second is an economic relationship. That is, the PSBR and the growth of the money supply and interest rates are very closely related. Too high a PSBR requires either that the Government borrow heavily from the banks—which adds directly to the money supply; or, failing this, that it borrows from individuals and institutions, but at ever-increasing rates of interest, which place an unacceptable squeeze on the private sector.

There are two assertions here; one, that the PSBR and the growth of the money supply are closely related; and two, that to avoid too fast an increase in the money supply requires borrowing from individuals and institutions (as distinct from banks)

† As a result of the rapid rise in prices in the first four months, shots of the 'trigger' started in April rather than in September–October (as originally expected).

‡ Cmnd 7746, 1979, para 1.

which in turn can only be accomplished at 'ever increasing rates of interest'.† It is best to deal with these two contentions separately.

The PSBR and the growth in the money stock

The assertion which forms the central thesis of the Government's economic philosophy that public sector borrowing is 'the major cause of the growth of the money supply' is without any empirical foundation whatsoever and could only be made by someone in total ignorance of the facts, as set out in official statistics by the Treasury and the Bank of England.

The relevant figures and relationships show, in my view quite conclusively, that Mr Lawson's assertions concerning 'simple facts' are not facts at all but fairy tales effectively contradicted by the statistics shown in Table 5.‡

On Mr Lawson's hypothesis the PSBR causes a corresponding increase in the money supply unless it is 'funded'—i.e., unless the money is borrowed from individuals and institutions through the net sale of securities to the public. In the latter case the budget deficit is financed by 'genuine savings', and therefore it is non-inflationary; but it creates an 'unacceptable squeeze on the private sector' by 'crowding out' productive investment.§ The part of the PSBR which 'adds directly to the money supply' is therefore the part which is *not* funded in this way and this is shown in column (3) of the table. This shows that for the last three financial years such 'unfunded borrowing' was virtually zero—it amounted to £390 millions for the 3 years taken together which is the equivalent of *less than 0.1%* of the GDP for that period. Over the same period the increase in the money supply (£M3) was £18.0 billions or 46 times as large. In other words the unfunded PSBR, assuming that all of it was financed by bank credit (some of it may have been financed by net overseas purchases) could only have contributed 2.1% to the increase in the money supply. Its influence, therefore, since April, 1977 was completely negligible.

On the other hand if one takes the preceding 3 years, when the PSBR, as a percentage of the GDP, was nearly twice as large (it averaged 9.5% of GDP as against 5.5% in the last 3 financial years) the 'unfunded' borrowing requirement was £10.4 billions, or 26 times as large as in the subsequent 3 years and was indeed 29.6% greater than the *total* increase in the money supply in that period.

Yet the increase in the money supply over the 3 years 1974/75–1976/77 was only £8.1 billion, or less than one-half as large as in the 3 years 1977/78–1979/80 when there was practically *no* public sector borrowing from the banking system.

Indeed a brief glance at columns (7) and (8) of Table 5 is in itself a complete disproof of the theory underlying the Government's medium-term strategy as expounded in Part II of the *Financial Statement and Budget Report 1980–81*, according to which 'there is no doubt that public sector borrowing has made a major contribution to the excessive growth of the money supply in recent years'. Taking the last 6 years as an indication of 'recent years', the size of public sector borrowing which was not 'funded' by the net sale of securities to the UK private non-banking sector fluctuated from 214.6% of the growth

† There is, of course, an implied third assumption, that an excessive growth in the money supply is the direct cause of inflation, but this has already been dealt with in previous sections.

‡ 1973 and earlier years are given on a calendar basis owing to difficulties in obtaining comparable figures on the money supply on a quarterly basis. However from 1974/75 onwards the figures are shown in terms of financial years which give a more reliable indication of the change in the PSBR from one financial year to the next and its relation to the national income as measured by GDP at factor cost.

§ On this question of 'crowding out' see below.

Table 5. *The PSBR, funded and unfunded, and changes in the money stock*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	PSBR	Net acquisition of public sector debt by UK non- bank private sector (funded PSBR)	(1)-(2) Unfunded PSBR	Changes in sterling money stock M3	PSBR as % of GDP	Unfunded PSBR as % of GDP	Unfunded PSBR as % of changes in money stock	Annual growth in £M3
	£m	£m	£m	£m	%	%	%	%
Financial years								
1979/80	9789	9085	704	6449	5.9 est	0.4 est	10.9	12.4
1978/79	9282	8537	745	5285	6.4	0.5	14.1	11.4
1977/78	5597	6656	-1059	6233	4.3	-0.8	-17.0	15.5
1976/77	8523	7190	1333	2829	7.5	1.2	47.1	7.5
1975/76	10585	5230	5265	2453	10.8	5.4	214.6	7.0
1974/75	7993	4220	3773	2738	10.1	4.8	137.8	8.5
Calendar years								
1973	4182	2094	2088	6702	6.5	3.3	31.2	26.3
1972	2040	1007	1033	4927	3.7	1.9	21.0	24.5
1971	1373	2104	-731	2455	2.8	-1.5	-29.8	13.4
1970	-17	102	-119	1541	0.0	-0.3	-7.7	9.7
1969	-466	359	-825	374	-1.2	-2.1	-220.6	3.0
1968	1279	-13	1292	1072	3.4	3.4	120.5	7.2
1967	1863	665	1198	1252	5.3	3.4	95.7	10.6
1966	961	262	699	446	2.9	2.1	156.7	4.1
1965	1205	486	719	915 ^a	3.9	2.3	78.6†	7.6
1964	989	504	485	597	3.4	1.7	81.2	5.2
1963	842	594	248	697	3.1	0.9	35.6	6.5

^a 1965 and before, M3 statistics on different basis.

Source: Financial Statistics.

of the money supply (in the financial year 1975/76) to -17.0% (in 1977/78). Yet the growth of the money supply was lowest—at 7.0% —in the financial year 1975/76 when unfunded PSBR was at its highest, and it was highest—at 15.5% —in the year 1977/78 when the ‘unfunded’ PSBR was actually negative. Moreover the extreme variation in ‘unfunded’ borrowing—from $+214\%$ to -17% —is in such complete contrast to the narrow range of variations in the year-to-year growth of the money stock (from 7.0% to 15.5% , averaging 10.4% for the 6 years) as to rule out the possibility of the one series exerting an influence on the other. If the Government’s factual assertions were correct, and public sector borrowing was a ‘major cause’ of the growth of the money supply, col (8) would have varied year by year, in sympathy with col (7). There is no evidence of that whatsoever; if anything there was a perverse relation between the two in which the highest ‘unfunded’ PSBR was associated with the lowest growth in the money stock, and vice-versa. The ‘Barber years’ seem to show a somewhat different picture, but the explanation of that does not lie in the size of uncovered public sector deficit but in the uncontrolled growth of bank lending to the private sector of those years, which occurred for reasons explained below. This makes complete nonsense of the assertions made in this year’s *Financial Statement* according to which the planned reduction in the growth of the money supply will depend on the ‘path for the PSBR.’† If past experience is any guide—and what else is there to go on?—it will have nothing whatever to do with that factor.

A comparison of the *whole* of the PSBR (both funded and unfunded) ought to be better related to the change in the money stock, since the latter should be in some relation to the growth of the money national income, and the PSBR is one of three major components determining the growth of demand (the others are the net loan expenditures of the private sector and the balance of payments on current account). The figures in Table 5 however, do not support that view either. The years in which the PSBR, as a proportion of GDP, was very large—such as the 2 years 1974/75, 1975/76 and also 1976/77—the growth of the £M3 as a percentage of the total money stock was particularly low as compared with both earlier or later years, while in the years when PSBR was relatively low (such as 1977/78, 1972 and 1971) the percentage growth in £M3 was relatively high.‡

If the PSBR, whether funded or unfunded, thus cannot account for the changes in the money stock how is the latter to be explained? Table 6 accounts for the annual growth in the money stock for the years 1966–79 in terms of three ‘sources’: (1) the unfunded part of the PSBR; (2) bank lending to the United Kingdom private sector; (3) net overseas finance to the UK. These three elements together are so defined as to

† *Ibid.* para 14.

‡ I myself believed at one time (Kaldor, 1970) ‘that the basic relationship between money and income (i.e., that the change in the “money supply” is a reflection of the change in money incomes) is modified in the short period by the behaviour of the income–expenditure relation (or, as I would prefer to call it, the receipt–outlay relation) of those particular sectors whose receipt–outlay relation is particularly unstable—in other words, whose dependence on “outside finance” is both large and liable to large variations—for reasons *which are endogenous, not exogenous to the sector* [italics in the original] . . . [this] is true of the public sector whose “net borrowing requirement” has been subject to very large fluctuations year by year’ (as a consequence of Keynesian economic management which varied the receipt–outlay relation of the public sector deliberately so as to stabilise the growth of effective demand). The idea was eagerly seized on by Milton Friedman and other economists who said from then on that Governments are the chief culprits in inflation because, wishing to avoid unpopularity, they spend too much and tax too little. Subsequent history has shown however that I was wrong (and so, of course, was Friedman)—while there was a correlation between the PSBR and the growth of M3 for the period 1954–68, it disappeared *completely* afterwards, as the regression equations in Table 7 show.

Table 6. The 'sources' of growth of the money stock

	(1)	+	(2)	+	(3)	equals	(4)	+	(1)	+	(2)	+	(3)	equals	(4)
	PSBR unfunded		Bank lending in sterling to UK private sector		Net overseas finance to UK, expressed in sterling	Change in money stock sterling M3			PSBR unfunded		Bank lending in sterling to UK private sector		Net overseas finance to UK, expressed in sterling		Change in money stock sterling M3
	Actual change, in £M:														
1979	1798		8556		-3771	6583			27		130		-57		100
1978	2324		4698		-250	6772			24		69		-4		100
1977	-2462		3188		3404	4130			-60		77		82		100
1976	3364		3464		-3263	3565			94		97		-92		100
1975	4935		-371		-2233	2331			212		-16		-96		100
1974	3210		3435		-3390	3255			99		106		-104		100
1973	1903		5972		-1173	6702			28		89		-18		100
1972	1041		5510		-1624	4927			21		112		-33		100
1971	-731		1576		1610	2455			-30		64		66		100
1970	-119		1135		525	1541			-8		74		34		100
1969	-820		525		669	374			-219		140		179		100
1968	1292		570		-790	1072			121		53		-74		100
1967	1198		577		-523	1252			96		46		-42		100
1966	699		53		-306	446			157		12		-69		100

Source: Financial Statistics, CSO, May 1980 (and earlier).

Table 7. Contributions to the growth of Sterling M3 1966–79

$\Delta M3 = 2903.0 + 0.27$ (PSBR–F)	
(751.6) (0.34)	$R^2 = 0.05$
$\Delta M3 = 1065.6 + 0.78$ BA	
(390.5) (0.10)	$R^2 = 0.83$
$\Delta M3 = 2989.5 - 0.32$ NOF	
(662.0) (0.32)	$R^2 = 0.08$
BA = 2589.5 + 0.15 (PSBR–F)	
(890.2) (0.40)	$R^2 = 0.01$

Definitions:

$\Delta M3$ = change in sterling M3
 (PSBR–F) = the unfunded element of the public sector borrowing requirement

BA = bank lending in sterling to UK private sector

NOF = net overseas finance to the UK

Notes: Figures in parentheses are standard errors. Equations are estimated by ordinary least squares.

be equal to the annual change of £M3 (the first two elements have in recent years come to be called ‘domestic credit expansion’). It should be emphasised that as the table represents an identity it can say nothing about causality. It is equally consistent with the monetarist view according to which an increase in the money stock is fully ‘explained’ by public or private sector borrowing *plus* net overseas finance (which provides a source of finance for borrowing only when the balance of payments on current account is unfavourable). But it is also consistent with a non-monetarist view according to which the change in the money stock and the size of bank lending may both be determined by other factors—such as the increase in total expenditures which in turn are to be explained by autonomous changes in private investment, by the rise in money wages, the propensity to consume, etc. But on the monetary view the three sources can be taken as ‘explaining’ the change in the money stock which in turn is taken as ‘explaining’ whether inflation takes place and, if so, by how much.

It will be evident from a glance at the table that the unfunded part of the PSBR (which in turn is equal to the public sector’s borrowing from the banking system *plus* the net issue of notes and coins) can have only played a minor role in the change in the money stock, whereas bank lending to the UK private sector played the major role. This is formally proved in the regression equations in Table 7 which show the contribution of each of the three factors separately, as well as the sensitiveness of bank advances to the private sector of bank lending to the public sector (i.e. the banking system’s absorption of public sector debt). These regression equations show conclusively that the role of the unfunded PSBR was quite insignificant; it explains only 5% of the change in £M3 in the last 14 years. As against that, bank lending in sterling to the UK private sector is the factor that was overwhelmingly responsible for the change in the money stock, as it explains 83% of the change. Finally, the last regression equation shows that bank finance to the private sector has not been influenced by the banks’ absorption of public sector debt.

These regression equations offer a complete disproof, within their own realm of discourse, of the main contentions on which the present Government's economic strategy is based, as explained in numerous speeches of Ministers and in Part II of the *Financial Statement and Budget Report, 1980-81*.

The PSBR and interest rates

So much for Mr Lawson's first contention. His second contention stands up no better than the first. This asserts that to avoid the inflationary consequences of the PSBR, the Government must borrow 'from individuals and institutions, but at *ever-increasing rates of interest*, which place an unacceptable squeeze on the private sector'.

First of all, which rate of interest had he in mind? There is the short-term rate of interest, now called MLR, which governs the rate on Treasury Bills, and the rates obtainable on interest-bearing deposits repayable at short notice with banks or other deposit-bearing institutions. And there is a whole spectrum of long or medium term interest rates, measured by the redemption yield of gilts of varying maturity, or by the flat yield of perpetual bonds (like 2½% Consols). To 'borrow from individuals and institutions' by means of the sale of Government securities what matters is the *additional yield* which has to be offered on such securities as compared with the current rate of interest on bank deposits (or Treasury Bills) and the expected future short rates of interest during the lifetime of the security issued. For the cost to the buyer of purchasing long or medium term securities is the sacrifice of *foregone liquidity* (and not the sacrifice of *foregone consumption*). Savings out of personal income are largely contractual in character: it is for this reason that such a large part of personal savings is channelled through institutions like insurance companies and pension funds as well as deposits in savings banks and building societies. It is not a question therefore of *inducing* individuals to save (in the sense of inducing them to refrain from current consumption) but only of inducing them to commit themselves to a purchase of a long-term security which is subject to the risk of a capital loss (as well as to the chance of a capital gain) on account of future changes in the rates of interest. It has been calculated that the additional yield of long-term Government securities over the 7-year moving average of short-term rates (which was used as a proxy for *expected* short-term rates) was 1% prior to 1913 and around 2% in the period between the two wars.† At present there is a large and widespread *negative* yield gap (i.e. one extending to short and medium dated stock, as well as the pure long term rate) between gilts and the Minimum Lending Rate, which must be an indication of the public expecting both short and long-term interest rates to fall. In fact, despite the present Government's unexpected increase in the MLR to 14% last June and then to 17% in November, the yield of long-dated gilts is well *below* their yield in 1974-75, when the interest rates were barely above 12%. Gilt-edged yields are the same as in the third quarter of 1978 and are only a little higher (by about 1½%) than in the summer of 1979, when they were exceptionally low in the expectation of a reduction of MLR. And indeed they have not risen much in consequence of the wholly unexpected rise of the MLR to 17%. During all that time there was a flood of new issues which offset over 90% of the PSBR; in the last financial year the flood became a veritable torrent, with net new issues for cash yielding £11½ billions, or twice the amount for the previous financial year.

† Cf. Hicks, 1939, p. 31.

Since April 1975, when the yield of $2\frac{1}{2}\%$ Consols was over 15%, the Government borrowed (net) from individuals or institutions—i.e. the non-bank UK private sector—the modest sum of £36,788 millions, or 84% of the cumulative PSBR of £43,776 millions of the last 5 financial years. The current yield of Consols is just under 12% or 3% lower. In relation to the MLR, which was $9\frac{3}{4}\%$ in April 1975, and is now 17%, the *fall* in the yield of Consols was 7%. So much for the contention that the PSBR can only be funded ‘at ever increasing rates of interest’.

To be accurate, Mr Lawson should have said that the Government has been able to borrow from individuals and institutions in almost unlimited amounts at redemption yields which are on a downward trend and are much lower now than those offered in earlier years (with the exception of a 6-month period in 1977–78 and another such period in 1979–80) and at an *ever-increasing negative yield gap* between those yields and interest on Treasury Bills, which the Government keeps deliberately high for the express purpose of ‘squeezing’ the private sector.

For it is the government-imposed MLR, and *not* the gilt-edged yields determined by future interest expectations, which are solely responsible for the ‘squeeze’ on company finance. If heavy borrowing from individuals and institutions required ‘ever increasing interest rates’ we would have had a situation in which the upward-pull of long-term rates dragged the short-rate up behind it; instead of which the wholly policy-imposed level of the MLR, even though it has been kept up for nearly a year, failed to shake the public’s expectations that future interest will be much lower than now, and that they are *bound to fall heavily soon*—otherwise there could not exist a large negative yield gap even on short-dated securities repayable within a few years.

How is this to be squared with the importance attached by all monetarists to ‘inflationary expectations’? On the monetarist view, the current rates of interest (on loans of any particular duration) should correspond to Fisher’s ‘real’ rate of interest *ex ante*, i.e. it should make an allowance for the expected rise in prices during the currency of the loan. Since the current rate of inflation is 20%, an 11.5% yield on short-dated gilts must therefore imply, on the theory of monetarists, the prevalence of ‘deflationary’ expectations which alone explain why such yields should be so much less than the rate of increase in prices.

However there is a fallacy here which is no less damaging to clear thinking for being widely believed, even among economists who do not subscribe to the monetarist creed. This consists of the proposition that the *expected* rise in prices enters into the supply-price of loans—i.e., that people are not willing to part with ‘liquidity’ except at a price (in terms of redemption yields) which makes allowance for the expected rise in prices until the redemption date, in addition, to the ‘normal’ return on that particular type of loan. This view is false for the simple reason that the holding of liquid financial assets (which is the alternative to holding bonds) is exposed to exactly the same risk of erosion in real value through inflation as gilts are. Inflationary price expectations therefore do *not* enter into the determination of interest rates for loans of differing duration; these are solely determined by expected *interest rates*, both long and short (which must be consistent with one another). The expectation of a rise in prices, as Keynes maintained, will raise the ‘marginal efficiency of capital’ but it will not affect the current yield of bonds, except in so far as it also carries with it the expectation of higher short-rates of interest in the future. The present negatively sloped yield curve in the London market necessarily implies that people expect that *both* short and long rates will fall; but this

does not imply (or not necessarily) that they also expect prices to fall, or even that they expect the rate of increase in prices to diminish. The two are not necessarily linked to one another, except on the supposition that people expect the Government to go on raising the MLR in the vain hope that this in itself will bring inflation to an end, sooner or later; in that case, however, they ought to expect *rising* interest rates in the future, the expectation of which would imply a large positive yield gap, and not a negative one.

The rate of interest (MLR) is the one instrument which is entirely under the control of the Government. It is the declared policy of the Bank of England to use it as the prime regulator of the money supply; for that purpose, however, it is a particularly inept instrument, since, as we have seen, the direct effect of a rise in MLR is to increase the growth of the money stock and not to decrease it (as it makes interest bearing deposits *relatively* more attractive). For regulating the 'money supply' the Government is mainly dependent on 'funding', which in turn is very much a matter of creating—and maintaining—the expectation of *falling* interest rates. Keeping MLR at very high rates (such as 17%) is good for the money supply mainly because people cannot believe that it can last, and the longer it lasts the less they appear to believe (rationally or irrationally) that it can continue at that level. This alone explains why investors appear to be increasingly bullish on gilts, even though the yield on long-term issues already discounts a reduction in MLR that is of a far greater magnitude than is likely to happen in the foreseeable future, for reasons explained below.

Crowding out

One frequent contention of the monetarist school—though it figures less prominently in recent official pronouncements—is that public sector borrowing, if funded, 'crowds out' private sector borrowing. This view, to my mind, ignores:

- (a) the role of the PSBR as a regulator of the level of economic activity—whether as a 'built-in stabiliser' which changes automatically in inverse relation to cyclical changes in activity, or as an actively used instrument of demand management (as was the case up to 1973);
- (b) the reason why the PSBR is capable of fulfilling this role, which lies in the dependence of the *volume* of savings on the level of income, which is the fundamental axiom of Keynesian economics. As activity increases (with higher employment and a higher utilisation of capacity) savings increase more than in proportion to the increase in income, owing to the close connection between savings and profits. At low levels of capacity utilisation the *share* of profits is very low, mainly on account of high overheads per unit of output (whether of labour costs, rents, etc., or interest payments) and the cash flow may be insufficient to provide for increased working capital requirements on account of higher wages and higher fuel and material prices. This necessitates additional borrowing for the replacement of stocks, the interest burden of which may reduce net profits even further. But if economic expansion was renewed unit costs would fall with the expansion of activity, and a disproportionate share of the improvement in incomes would go into profits and therefore savings.

For the same reason a reduction of the PSBR attained through expenditure cuts or higher taxes or both, will reduce activity further and this will be attended by a disproportionate reduction in savings. Hence the savings which are theoretically 'freed'

by the reduction in public borrowing will not be there when the borrowing is cut—on the contrary, as savings will fall more than in proportion to the fall in incomes there will be less savings than before available to the economy.

So instead of ‘crowding out’, there is, on the supposition that the level of activity varies with effective demand, a ‘crowding in’ effect—the savings available for private investment will vary in direct relation with the PSBR and not in an inverse relation.

This conclusion may be modified if the balance of payments effects of changes in the PSBR are taken into account. To the extent that the expansion of demand resulting from large Government expenditure or lower taxes goes on imports, the additional incomes, and hence the additional savings, will accrue to foreigners. This, I presume, is what the Chancellor had in mind by saying that the British economy is hemmed in by ‘supply difficulties’. In such circumstances a reduction in the PSBR may cause a reduction in imports rather than in home output; but on that assumption it is not an efficacious method for reducing the rate of inflation, which requires a reduction in home output and employment. The assumptions under which public borrowing ‘crowds out’ private borrowing are the same as those under which home output cannot be either stimulated or depressed by fiscal or monetary measures.

Alternative methods of controlling the money supply

Under the pre-World War I gold standard, control over the money supply was relatively easy, since even small changes in relative interest rates between financial centres (such as London and New York) brought about large changes in the liquidity of the banking system, on account of the flow of funds induced by interest rate changes. After World War I, this system never worked in the same way—presumably because the risks of exchange rate variations (or of devaluation through changes in the gold parity) were never ruled out altogether; and after 1931, the management of the ‘money supply’ required different policies and different instruments for each country. However no serious problems arose until the late 1930s, since the cheap money policy of the main financial centres was not sufficient to lead to a full reactivation of resources, and almost until the outbreak of World War II, the risk of inflation was not taken seriously in Britain.

During the War, apart from extensive rationing and price controls of consumer goods, there was also rigid credit control imposed on the banks who were obliged to re-deposit all surplus funds with the Treasury (the so-called Treasury Deposit Receipts). The main control instrument was the regulation of the amount of credit banks were permitted to extend to the private sector, and priorities were laid down in the allocation of bank lending.

With periodic tightening and relaxation, such quantitative controls over bank advances were retained even after 1951 when an active interest rate policy was re-introduced as an instrument of regulating credit. The Radcliffe Committee concluded that credit control through interest rates was almost wholly ineffective beyond causing a ‘diffused difficulty of borrowing’. They therefore approved the use of quantitative ceilings on bank advances and hire purchase controls as an effective remedial measure in ‘emergencies’. With the return of the Labour Government in 1964 quantitative control of bank advances became the dominant form of credit control. However there was increasing criticism of these methods on the ground that they diverted business to smaller banks and to overseas banks which were not subject to control; and also

that the controls limited the growth of each bank not just absolutely but in relation to each other and thereby limited 'competition' between the clearing banks. Various schemes were considered to permit freer competition between banks.†

However the scheme actually adopted by the Conservative Government in 1971, 'Competition and Credit Control' was based on the idea that by creating an inter-bank wholesale market for loans, with individual banks freely bidding for funds both as borrowers and lenders, the best results will be obtained at a rate of interest (established by the market) which equates the demand and supply for loanable funds. The authors of this plan failed to take into account that the 'loan market' is different from other markets in that the banks, in their anxiety to expand their business, went in search of borrowers and thus used the facilities of the newly established wholesale 'deposit market' to balance their creation of bank assets (i.e., those resulting from additional lending) with an artificial increase in their liabilities, by actively bidding for wholesale deposits—leading to phenomena such as that known as 'round tripping' whereby a company or a financial institution could obtain a loan from Bank A (anxious to extend its lending business) on terms that made it profitable to on-lend to Bank B who was anxious to acquire additional liabilities to match the expansion of its assets. So far from the system leading to a new equilibrium between the demand and supply for loanable funds, it led to a scramble between banks to expand their operations on *both* the asset and liability side as fast as possible. The resulting inflation of bank credit—which I believe I am right in thinking was quite unexpected both by the Bank and the Treasury—led to a rapid expansion of interest bearing liabilities of the banks, and of credit extended to customers for speculative purposes, which created a rapid and unhealthy boom in the property market.‡ Mortgages became very easy to get, with the result that house prices nearly doubled in a period of a few months, and there was wild speculation in property companies as well as an unhealthy growth of 'secondary banking' which the new system was originally intended to discourage. The rise in house prices was rapidly passed backwards into increased land values—which had a perverse effect on building activity, since it caused landowners to hold on to potential development land, thereby increasing the shortage of development land still further.

At the end of 1973, the Government found it necessary to put the brake on this feverish process of speculation and credit expansion§ which in turn led to a spectacular collapse of 'secondary banking' and made it necessary for the Bank of England to organise a scheme in co-operation with the main clearing banks (called the 'lifeboat') which at the cost of many hundreds of millions of pounds succeeded in averting the occurrence of bank failures which could have rapidly swollen into a financial panic of

† The Labour Government of 1964–70 considered a scheme of introducing a 'public sector lending ratio' (of 50% or some other percentage) which would have had the effect that each particular bank could only extend credit to the private sector in proportion to growth of its holding of public sector debt, and since the Government could control how much public sector debt is made available to banking sector as a whole, this would have enabled the Government to exercise a global control on loans to the private sector without limiting any individual bank's freedom to increase its market share.

‡ As already mentioned above the introduction of the new system led to a rise of interest-bearing deposits of 112.5% between the end of 1971 and 1973, whereas previously the annual increase was of the order of 5–10% a year.

§ This was done partly by the development land tax which imposed a charge on the increase in the value of development land which could, in certain circumstances, be levied even when the land was not actually sold; and by introducing a new system of penalties (which became popularly known as 'the corset') on banks which increased their interest-bearing eligible liabilities in excess of the permitted rate.

19th century style. Since then the 'corset' was employed, on and off, in order to limit the rate of expansion of bank credit but since this system was increasingly evaded by transferring 'liability management' to subsidiaries—and also by the bank's willingness to remain in the penalty areas and pay for it, which they could easily afford to do, given the abnormal size of bank profits, resulting from high interest rates—the Bank abolished the corset altogether on June 19, 1980, and at the time of writing is back in the situation in which it found itself at the end of 1971.†

However the experience of using interest rates as the central instrument for the control of monetary aggregates has not been a happy one. In those sectors of the economy where prices are cost-determined—as in manufacturing industry—the interest cost of working capital is part of prime costs, and is therefore passed on in prices in much the same way as a rise in labour cost. However, unlike a rise in wages, the rise in interest rates has no counterpart in increased spending; it thus acts in the same way as an increase in taxation which serves to reduce the fiscal deficit. And where circumstances are such that the rise in interest charges cannot be passed on they eat into profits; with continually rising rates, this is bound to lead to a situation where firms become insolvent for lack of cash to pay interest on their loans, or where they have to borrow in order to pay interest on previous borrowing, a process that is sure to lead to bankruptcy.

In my view the change of policy which meant using the MLR and money market rates primarily for regulating the monetary aggregates has been a foolish and unimaginative innovation which is bound to be abandoned sooner or later for reasons discussed in the next section. Of course control is necessary to prevent an undue expansion of credit to the private sector, particularly for speculative purposes or for consumer credit. But for this purpose it is best to go back to some improved and more comprehensive version of the lending controls abandoned in 1971.‡ The argument about 'lack of competition' between the clearing banks or between the clearing banks and other banks, does not seem to carry much weight; there are only four large banks left, so the situation is one of 'oligopoly' in any case; and large and persistent borrowers could maintain accounts and secure overdraft facilities with several banks simultaneously.

Failing this there are two other measures that might be considered for adoption. The first is putting a ceiling on interest rates which banks can pay on time deposits—a British version of 'Regulation Q'. The disadvantage of this is that it could lead to increased 'disintermediation'—the technical term for arranging finance outside the banking system, mainly through trade credit.

The other is to introduce a variable public sector lending ratio, such as was considered in the 1960s. Assuming that the authorities can control the amount of public sector debt made available to the banking sector (this may require confining 'eligible debt' to bills or short-term bonds which are not normally held in large amounts by the non-banking public) this might provide an effective instrument for controlling bank lending to the private sector as a whole, without limiting the rate of expansion of any single bank, taken individually.

† The so-called Reserve Asset Ratio (which became meaningless since the banks, with the aid of the discount market, could manufacture reserve assets) was abolished at the same time, so that there is no limit on credit expansion at present other than a 'prudential' cash ratio of some 2% which however can also be replenished if necessary through the discount market by re-discounting eligible securities with the Bank of England.

‡ Most European countries employ controls on bank lending to regulate the money supply.

The problem of exchange rate policy

Throughout the 1960s there was a fairly general consensus among economists that the exchange rate of the £, at the parity of \$2.80 fixed after the devaluation of 1949, became too high in the changed circumstances of the late 1950s and the 1960s; that it was as a result of this that our export performance (as shown by the rapid fall in our share of world trade in manufactures) was unsatisfactory, and this in turn was a severe handicap on our economic progress as compared with countries such as Germany, Italy, or Sweden, whose economic growth was 'export-led'.†

Guided by these considerations I became a strong advocate (in the 1960s) not just of devaluation, but of the adoption of a 'managed' exchange rate (such as Keynes advocated in 1924)—in other words, a formally floating exchange rate, but where the rate was managed by market intervention so as to maintain an adequate stimulus to our manufacturers to secure a certain target rate of growth of exports. As is well known, there were strong political objections to devaluation of any kind, as a result of which this move was delayed well beyond the time when it might have arrested an irretrievable loss in our long-established position in numerous foreign markets; and when this move was finally forced on the Government in 1967, it occurred too late to bring about a lasting improvement in our international competitive situation. Though the Government, under the Chancellorship of Mr Jenkins, introduced unprecedented increases in taxation to secure the necessary resources for a rapid expansion of exports, the stimulus petered out after some years, and under the succeeding Conservative Government the priorities were again reversed in favour of a fiscally engineered boom based on rising domestic consumption demand.

So when a Labour Government returned in 1974, it was faced both with an inflationary wave in world prices unleashed by the oil price explosion of December 1973, and by a built-in acceleration of wage-inflation due to the operation of the 'threshold' arrangements under the final phase of the previous Administration's statutory incomes policy, which provided that all wages and salary payments were automatically adjusted each month once the retail price index exceeded by more than 7% its October 1973 level. On account of the unexpectedly large rise in world prices this critical phase was reached in April (whereas, as originally envisaged, this would not have occurred much before September) and from then on both wages and prices were 'hiked' each month by at least 1% and sometimes by 2%. As a result of this, whereas at the beginning of the year the rate of inflation in Britain was not greatly out of line with those of her competitors, by November 1974 (when the 'threshold' arrangements came to an end) the rate of inflation in Britain of both wages and prices was almost twice that of her competitors. The maintenance of international competitiveness required that the exchange rate of the £ should be adjusted downwards—which was a difficult thing to do since any engineered reduction in the exchange rate could unleash widespread speculation against the £ which would be difficult to contain with the resources available. Hence the Treasury and the Bank followed a cautious policy which consisted of

† Export-led growth was superior to 'consumption-led' growth (achieved as a result of Keynesian policies of economic management) partly because the latter engendered a weak balance of payments position, with the growth of imports always tending to outrun the growth of exports, necessitating 'stop-go' policies to protect the balance of payments; but mainly because it meant that the scope for the expansion of manufacturing industry was so much less than with countries enjoying export-led growth, and it was the growth of manufacturing industry which held the promise of improvements of productivity due to the introduction of new techniques, new industries and the exploitation of economies of scale.

'creaming-off' the day-to-day fluctuations in the market—by selling sterling against foreign currencies in moderate amounts whenever the demand exceeded the supply, thereby moderating the rise in market value, while not resisting a fall in the exchange rate by sales of foreign currency during periods when supply exceeded the demand. This policy was pursued fairly successfully in the course of 1975 and early 1976, though our competitiveness did not wholly regain its 1974 level until after March 1976 when the £ became subject to international bear speculation and fell further and faster than was desired by the authorities—indeed at times it looked as if its excessive fall would generate strong inflationary forces. It was only after successful negotiations with the IMF over the activation of higher credit *tranches* that there was a sudden change in 'confidence' and the authorities were again in control of the situation. In the course of 1977 the operation of the Government's incomes policy—which brought down the annual increase in earnings in manufacturing industry from 31·8% in the first quarter of 1975 to 8·7% in the third quarter of 1977—meant that the world-wide bear-speculation of 1976 turned into a world-wide bull-speculation in 1977 (aided also by rapidly improving North Sea oil prospects) which the Government resisted by not permitting the dollar exchange to rise above the rate that was considered appropriate from the point of view of our competitiveness—a rate of depreciation of 61·8% of the Smithsonian average (or roughly \$1·71 to the £) which was maintained unchanged for the first three quarters of the year, despite a net inflow of foreign currency which averaged, in the first half of 1977, £750 million a month. This flow grew to the dimensions of a flood in September and October of that year when dealings became so hectic at times that on some days several hundred millions worth of foreign currency was bought by the authorities in a matter of hours.

The Government responded to this persistent inflow in the traditional manner by lowering MLR, which had stood at 14½% in early January 1977, in successive steps reaching 8% in July, 7% in August, 6% in September and 5% at the end of October. Still the money continued to flow in, and the Government were faced with the choice of either lowering the rate still further—there was still a long way to go before the traditional minimum of 2%—or giving way to speculators and letting the rate float upwards.

In the light of the general 'monetarist' atmosphere—which regarded an inflow of foreign money as dangerously inflationary, not to speak of the 'unsoundness' or 'absurdly' low money market rates—the Chancellor was evidently persuaded that this situation could not be allowed to continue.† So the decision was taken to 'de-cap' the pound (as the move was then called) and allow it to float freely upwards; with some slight ups and downs and slight interruptions this has gone on ever since. But it implied that as the pound became increasingly over-valued, the current balance of payments went into the red again despite increasing recession and despite the steady improvement in oil account. It implied moreover that the exchange rate and the interest rate moved in tandem, so to speak, to make our economic prospects increasingly bleak. Every rise in the MLR served to make the exchange rate higher than it would have been otherwise,

† With 1·4 million unemployed and the balance on payments of current account only just coming out of the red (it was —£425 million a quarter in the first two quarters and +£500 million a quarter in the last two quarters) the danger of the economy being 'poisoned' by an excessive increase in currency reserves was remote in the extreme. The important factor was that after many unsuccessful years the £ was at last stabilised at a level which, with the continuance of a successful incomes policy, would have made it possible to initiate a period of soundly-based export-led growth.

every rise in the exchange rate required higher interest rates, lest a change in sentiment brought about a dreaded exchange crisis.†

A high and rising exchange rate is recommended by monetarists as the principal method by which high interest rates and/or restraint in the growth of the money supply exert a 'downward pressure' on prices. From October 1977 on until May 1979, sterling's effective exchange rose by 7·8%; since the new Government came into office it rose by a further 9%, but this did not prevent a further increase in the rate of increase in wages and prices which is now almost twice as high as in the average of other industrial countries. So at the moment, the pound is grossly over-valued in terms of competitiveness.

But however over-valued the pound is, it is always dangerous to let it go down; indeed, in a sense it is more dangerous, because speculative expectations become more entrenched the worse is our balance of payments performance. Given the fact that our sight liabilities to foreigners are still greatly in excess of our reserves, we are in a weak position to resist a strong speculative attack—in a weaker position than when it last occurred in 1976 on account of the fact that in the meantime exchange controls on UK residents were also swept away which makes the scope of bear-speculation considerably greater. If on the other hand we allowed the exchange rate to drop by more than a moderate amount, it would add a further twist to internal inflation which would replace the present wage/price spiral with a wage/price/exchange rate spiral, which on past experience of other countries, contains far more powerful self-accelerating forces.

For this reason I would be chary of recommending any active policy concerning the exchange rate for the present, such as making it an 'alternative target to the money supply' (whatever that may be taken to mean). As a result of short-sighted and mistaken policies, we allowed the exchange rate to drift from a position of potential strength to one of great potential weakness—despite our prospect of higher oil revenues. But these mistakes cannot easily be undone by reactivating the policies of a gradual downward 'float' so as to regain and maintain the rate at a competitive level. The problem of competitiveness—vital to our manufacturing industry—could best be dealt with by having a separate exchange rate applicable to a specified and identifiable class of transactions only. But with the vast amount of liquid funds now floating around the world the possibilities of de-stabilising capital flows are so large as to make it too risky to pursue a policy of manipulating the exchange rate itself with a view to restoring and maintaining competitiveness on trading account.

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† A good example of this was the sudden drop of the exchange rate by 5 cents when some remarks of the Prime Minister were interpreted by the market as presaging reduction in the MLR. It was soon followed by a flood of official denials which quickly restored the situation.