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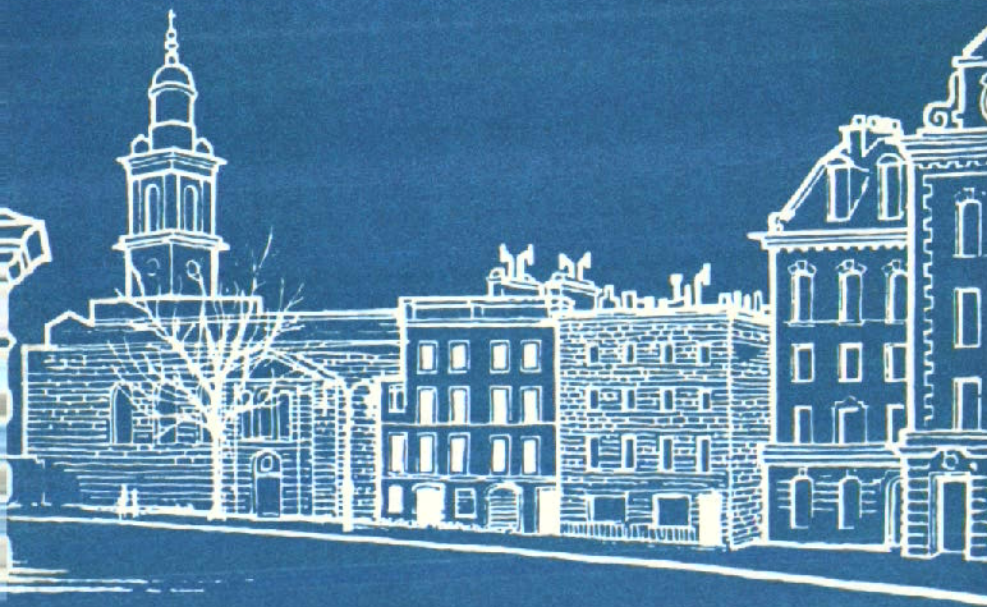
Too Much Money . . .?

GORDON T. PEPPER
and
GEOFFREY E. WOOD



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1. Monetarists warned about the 1974 and 1975 inflation two years before it occurred; the warnings were issued following the explosion in the money supply in 1972 and 1973. The Government did not act to control the money supply because the action necessary in 1973 would have aborted the economic recovery.
2. It is essential to understand the reasons for and the pressures behind excessive monetary growth if the money supply is to be controlled and economic recovery permitted at the same time.
3. Various technical factors contributed to the problem: attempts to fine-tune economic activity more accurately than the state of knowledge permits, inadequacies in 'Competition and Credit Control', the easing of fiscal policy in a way that has a cumulative effect, the inevitable build-up of liquidity in a recession not being neutralised sufficiently quickly.
4. The most important reason why governments allow excessive monetary growth is their attempts to stop unemployment from rising.
5. In the absence of monetary growth, a rise in money wages faster than output would lead to unemployment.
6. Monetary growth occurs when both the Government and companies borrow from the banks, which are the residual source of finance for both. Such borrowing tends to occur when the demand for finance exceeds the supply of savings in the economy as a whole.
7. All forms of price control and price restraint are inflationary because they increase companies' demand for bank finance.
8. The Government's demand for finance must fall rapidly as business activity recovers from a recession if funds to finance the business recovery are to be made available.
9. Persistent 'crowding out' of the corporate sector is responsible for the continued weakening of corporate balance sheets. It undermines the strength the economy requires to withstand the remedial measures necessary to conquer inflation.
10. Persistent preoccupation with short-term palliatives is responsible for the long-term deterioration of the UK economy. But the trend is reversible. *The technical solution is available*—if the electorate and the Government will take a longer-term view.

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An analysis of the machinery of monetary expansion and its control

GORDON T. PEPPER

and

GEOFFREY E. WOOD

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PREFACE

The *Hobart Papers* are intended to contribute a stream of authoritative, independent and lucid analyses to the understanding of the application of economic thinking to private and governmental activity. Their characteristic concern has been the optimum use of scarce resources to satisfy consumer preferences and the extent to which it can be achieved in markets within the appropriate legal/institutional framework created by government or by other arrangements.

It has long been a common belief among economists of all schools, especially those interested in the working of markets, that one of the most important functions of government and elements of the legal/institutional framework is a mechanism for facilitating buying and selling, lending and borrowing by the use of money. A significant change in attitude is not merely that, to varying degree, economists have in recent years come increasingly to the view that government has not provided an efficient monetary mechanism since at least the end of the Second World War. There is now the more fundamental critique that government down the centuries has been prone to mismanage money and that there is no other ultimate solution than to take it out of political control. In a recent IEA *Paper*[1] Professor F. A. Hayek maintained that a gold standard, with balanced budgets, fixed exchanges and limits on international liquidity, has proved historically the best means of removing the supply and the value of money from the control of government, and Mr Peter Jay has recently suggested a Currency Commission as a move to much the same kind of automatic mechanism 'insulated from political manipulation',[2] though perhaps less radical than Professor Hayek's proposal that government be deprived of the power to oblige its citizens to use only its money as legal tender. The significance of these proposals is their common anxiety to take money out of 'politics'.[3]

The failure of government is seen most vividly in its propensity to increase the supply in response to pressures from vested interests that suffer from underlying economic change, in

[1] *Choice in Currency*, Occasional Paper 48, 1976.

[2] 'A solution of the last resort', *The Times*, 16 April, 1976.

[3] The case for and against 'gold' is analysed by Professor Victor and Mrs Anne Morgan in a forthcoming *Paper*.

particular to maintain employment in parts of the economy and full employment in the economy in general. Economists who attribute the inflation of post-war years, and especially of the last seven or eight, to expansion in the supply of money fall into two groups according to the emphasis they place on the supply of money as the immediate cause and on the institutional pressures on government as the ultimate causes.

Hobart Paper No. 68 is the work of an interesting combination of expertise in the day-to-day reactions to the monetary environment and academic economic analysis of the immediate and underlying causes and trends. Mr Gordon Pepper, a Cambridge graduate in economics and an actuary, is a Partner of W. Greenwell & Co. His speciality is the gilt-edged market which in many ways is central to the British monetary system. Gilt-edged transactions often reflect the ebb and flow of funds within the financial institutions. Observation of the gilt-edged market can detect the balance between the demand for long-term finance and the supply of savings in the economy as a whole. Mr Geoffrey Wood is a Lecturer at the City University. The two have come together to analyse the reasons why government has been misled into expanding the supply of money. They recognise that a major factor in monetary expansion is the growing divergence between government spending and the taxation available to finance it, but their concern is to add to the discussion by analysing other pressures—technical and economic—that contribute to inflationary tendencies.

Their *Paper* has grown out of research[1] begun some years ago at Greenwell's into trends in financial elements in the money and capital markets. These inquiries have been refined and widened to the more general underlying economic causes and consequences. The Bank of England's monthly statistical release on banking statistics, including money supply data, started in March 1972. Since up-to-date analysis of the supply and demand for short-term finance has become possible, Greenwell's *Monetary Bulletin* has been widely read in government, the Civil Service and elsewhere, as well as in specialist financial circles. Over the years it has demonstrated that exposure to market disciplines can improve economic analysis itself, as well as the working of the economy. Much of the analysis in this *Paper* was originated in the Bulletin under

[1] A description of the research is included as an appendix at pp. 49-56.

pressure of events, and has correctly identified causes and effects and cyclical turning-points.

In this *Paper*, Messrs Pepper and Wood analyse the mistakes in government control of the monetary mechanism since the war and the technical errors and fundamental factors at work behind the scenes. Here they discuss the error of trying to 'fine tune' the economy without sufficient knowledge, the repeated errors in Treasury forecasting, the effects of monetary control introduced by 'Competition and Credit Control' in 1971, the conflict between unemployment and inflation, the evidence discovered by economists, the debates arising from it, and the competition for funds between the corporate, private, government and overseas sectors of the economy. And they consider the remedies for escaping from inflation and preventing its recurrence.

This expert, informed and rigorous discussion will be followed by readers more easily if they use the Glossary in which the authors have tried to help them by defining and explaining their terms.

As technical and economic specialists the authors confine themselves to their specialism. Readers interested in the even wider institutional setting of the social and political pressures within which government works may reflect on the scope in practice for avoiding inflation when governments must be concerned with timing of General Elections, or even by-elections, in order to maintain office, which they must consider would be of more advantage to the community than the alternative of government by the Opposition. This is not a critique of the integrity of politicians but a realistic approach to the task of maintaining a stable value of the currency and of keeping inflation at bay in the real world of modern representative democracies in which governments that should take long views must take short views if they are to remain in office. It is part of the relatively new advance of economics into the working of political institutions known variously as the economics of democracy, the theory of public choice, and other descriptions, and is discussed by Professor Gordon Tullock of Virginia State University and Dr Morris Perlman of the London School of Economics in a forthcoming *Hobart Paperback*.

The Institute thanks Professor Victor Morgan of the University of Reading and Mr Brian Griffiths of the LSE for reading early drafts and for offering comments and

suggestions that the authors have taken into account in their final revisions. Its constitution requires the Institute to dissociate its Trustees, Directors and Advisers from its authors' analyses and conclusions but it commends the *Paper* as an authoritative, documented study based on original realistic research in the effort to test alternative theories of inflation and of the working of the monetary machinery and more general economic pressures that cause government to mismanage or lose control of the supply of money. As such it will be of interest and value to students and economists interested in the monetary mechanism and also to non-economists who want an insight into the efforts being made by monetary theorists and practitioners to discover faults in it and devise remedies.

April 1976 ARTHUR SELDON

CONTENTS

THE AUTHORS

GORDON T. PEPPER was born in 1934 and educated at Repton School and Trinity College, Cambridge, where he graduated in mathematics and economics in 1957. He was an actuarial student at the Equity & Law Life Assurance Society, 1957-60, and was made a Fellow of the Institute of Actuaries in 1961. He joined W. Greenwell & Co. in 1960, becoming a partner in 1962.

Mr Pepper has submitted papers on the gilt-edged market and money supply to the Institute of Actuaries, published in the *Journal of the Institute of Actuaries*; he also submitted a paper and gave oral evidence to the House of Commons Expenditure Committee, published in its First Report, Session 1975-76: *The Financing of Public Expenditure*, HC 69, Vol. II, 1975.

GEOFFREY E. WOOD was born in 1945 and educated at Aberdeen Grammar School, the University of Aberdeen (MA, First Class Honours in Economics, 1967), and the University of Essex (MA in Economics, 1968). He was a Lecturer in Economics at the University of Warwick, 1968-75, and is now Lecturer in Banking and International Finance at the City University.

Mr Wood has contributed articles to, among other journals, the *Southern Economic Journal*, *Journal of International Economics*, and the *Scottish Journal of Political Economy*.

* * *

The Appendix, 'Research into the Use of Financial Statistics' (pp. 49-56), describes the background to the start in June 1972 of W. Greenwell & Co.'s *Monetary Bulletins*. Gordon Pepper is the principal author, Robert L. Thomas the co-author; Geoffrey Wood has been consultant to the Bulletins since November 1973.

Messrs Pepper and Wood have jointly written 'Monetarist and Keynesian Indicators of the UK Economy', in *Resource Allocation and Economic Policy*, edited by M. J. Allingham and M. L. Burstein, Macmillan (to be published in 1976).

ACKNOWLEDGEMENTS

We are much indebted to Mr R. L. Thomas for assistance with data and for detailed and instructive suggestions and criticisms, and to Mr Alan Budd and Professor John Williamson for comments on a draft. They of course bear no responsibility for the final form of the *Paper*.

G.T.P.
G.E.W.

GLOSSARY

BALANCED BUDGET MULTIPLIER—If the Government increases its expenditure and its revenue by the same amount, the budget remains balanced but national income will be increased because the rise in government expenditure exceeds the reduction in private sector expenditure since the private sector saves part of its income but the Government spends all its increased revenue.

COUPON—The rate of interest payable on the *nominal* value of a government stock. A recent stock was '13% Treasury 1990': the 13% is the coupon—£13 interest per annum for every £100 face value of the stock bought. It was issued at £96 per £100 face value (on 15 January, 1976), so the rate of return exceeded the coupon. '1990' is the year in which the stock will be redeemed.

CYCLICAL UPSWING/DOWNSWING—The periodic, regular rises and falls in economic activity. Cycles of various lengths have been identified. The most regular and best identified post-war type of fluctuation lasts about 4-5 years from peak to peak.

DISCOUNT MARKET—A group of specialised financial institutions dealing in very short-term paper. As well as making a market in that paper, the discount houses act as bankers in it to the banks.

ELIGIBLE LIABILITIES—Debts or obligations of a bank against which the Bank of England requires reserves to be kept. Most bank deposits are classified as eligible liabilities; deposits with an original term exceeding two years and deposits with other banks are not eligible liabilities.

FIRST-ROUND EFFECT ON OUTPUT—The immediate effect of a government policy intended to affect national income. For example, if it is decided to increase road-building to stimulate output, the 'first-round effect' is the purchase of machinery and hire of workers to build the roads. This leads to 'second-round' and subsequent effects as these workers and the people who produced the machines spend their incomes.

FIRST-YEAR EFFECT—The effect on government revenue in the first fiscal year following a tax change. It is almost always less than the full-year effect because the change in tax rates is usually applied part-way through the fiscal year.

GOVERNMENT PAPER—Debt issued by the government (*see* TREASURY BILL, COUPON).

MARGINAL PROPENSITY TO:
CONSUME—the proportional change in consumption with a change in income.
SAVE—the proportional change in saving with a change in income.
MONEY STOCK—Two statistical series for the money supply are published in the UK: M1 is notes and coin in circulation, plus 'sight' deposits (i.e. a deposit withdrawable on demand or on one day's notice) of the UK private sector; M3 is M1 plus deposit accounts of the UK private sector, plus UK public sector deposits in sterling with the UK banking sector.
MONEY SUBSTITUTES—Assets that can be quickly converted into money, and at prices known almost exactly in advance. Examples are building society deposits and Treasury Bills.
MOVING AVERAGE—A statistical device for discovering a trend. If an average over a moving period is higher than its predecessor, the numbers in the series must be getting bigger.
PUBLIC SECTOR BORROWING REQUIREMENT—The amount the public sector has to borrow to equate its revenue and expenditure.
PUBLIC SECTOR FINANCIAL DEFICIT—The public sector borrowing requirement *excluding* capital transactions of a financial nature, i.e. including current transactions, stockbuilding and capital formation.
RESERVE ASSET RATIO—Under Bank of England regulations, some types of assets count as reserves. The banks maintain at least a minimum proportion of them to liabilities.
SECULAR TREND—a movement which lasts for a substantial number of years, and can be discerned through any fluctuations around it.
SPECIAL DEPOSITS—Called from the banks by the Bank of England from time to time. The effect is to reduce the reserve assets in the banking system, and therefore to put pressure on the banks' reserve ratios. One way by which the banks can restore these ratios is to reduce their loans to the (non-bank) private sector; this is generally the objective of the Bank of England's call.
TREASURY BILL—Negotiable government paper, issued by the Treasury and repayable after three months.
VELOCITY OF CIRCULATION—The speed with which money circulates, measured as the ratio of money stock to income over a period, usually a year.

I. INTRODUCTION

Since about 1945 the UK has had a record of sustained and accelerating inflation—in each cyclical upswing inflation has been higher than in the one before. The price level can change without a change in the money supply: factors such as the availability of substitutes for money, for example building society deposits and credit cards, and the ability of people to economise on their holdings of money permit the velocity of circulation of money to vary and thus allow the price level to change. But there is now an overwhelming body of evidence which shows that there can be a *continuing* rise in prices—a continuing inflation—only in the presence of continuing excessive monetary expansion.[1] The aim of this *Hobart Paper* is to identify the pressures for excess monetary growth in the UK since 1945. It will be shown that some of these pressures have increased over time; the reasons for them and the methods of eliminating them will be analysed.

We recognise, of course, that one of the major factors leading to monetary expansion in the UK has been the constant pressure for more government spending, combined with a growing resistance to taxation. In this *Paper* we focus attention on a different *kind* of pressure, and show that in various situations monetary expansion is a tempting and easy short-term solution, but that it simply aggravates those difficulties in the long run.

Many reasons, not mutually exclusive, have been advanced to explain why governments permit excessive monetary expansion. Inflation has been seen by governments as a way, although short-term, of reconciling inconsistent claims on the national income. If claims on the national income are larger than the total of that income, they can be temporarily reconciled by letting money incomes rise. This procedure leads to a rise in prices, and people then realise that, while their money incomes have risen, their *real* incomes—the amount their incomes can buy—have not risen as they had hoped. Inflation raises revenue for the government without it legislating for a tax increase; because income tax is progressive the yield of direct taxation increases more rapidly than the rise in incomes (the technical description is 'fiscal drag') and because inflation

[1] Milton Friedman and Anna J. Schwartz, *A Monetary History of the United States 1867-1960*, Princeton University Press, 1963; David Meiselman (ed.), *Varieties of Monetary Experience*, University of Chicago Press, 1971; A. J. Brown, *The Great Inflation*, Oxford University Press, 1955.

imposes a tax on holding money.[1] Governments may happily accede to this situation because it enables them to make 'gifts' to the electorate, just before elections, by handing back tax revenue that is the result of inflation rather than both planned and authorised by Parliament.

II. MISTAKEN POLICIES

It has also long been recognised that inflation can result from errors of policy. Two very detailed studies, by Mr J. C. R. Dow[2] and Dr Bent Hansen,[3] have argued that macro-economic policy in the UK was actively de-stabilising, in the sense that, had policy been passive, with no attempt to offset fluctuations in national income, they would have been *smaller*. The studies cover the periods 1945 to 1960 and 1955 to 1965 respectively.

Even without such lengthy studies, it can be shown that major errors of demand management have continued to be made. One example was the behaviour of the Labour Government in the fiscal year 1969-70. The economy was squeezed extremely hard. The broad measure of the money supply (M3) rose by only 2 per cent. The result, after some 15 months, was a rapid and large rise in unemployment. Seasonally adjusted wholly unemployed rose from 580,000 in November 1970 to 879,000 in March 1972. The Conservative Government tried to reduce unemployment very rapidly. The money supply was expanded sharply and, subsequently, there was a rapid rise in prices as well as in output. If the economy had not been squeezed so hard by Labour in the first place, unemployment would have been stabilised at a lower level and the political pressure for rapid reflation would not have been so strong. Recessionary pressures might have been allowed to persist for long enough to squeeze inflation from the economy and, more certainly, no *additional* inflationary pressures would have been generated.

[1] Richard Jackman and Kurt Klappholz, *Taming the Tiger*, Hobart Paper No. 63, IEA, 1975.

[2] J. C. R. Dow, *Management of the British Economy 1945-60*, Cambridge University Press, 1964.

[3] Bent Hansen, *Fiscal Policy in Seven OECD Countries 1955-65*, OECD, Paris, 1969.

Treasury forecasting error was de-stabilising

Another important example of de-stabilising policy occurred as a consequence of a forecasting error made by the Treasury when planning the March 1972 Budget. The *Financial Statement* accompanying the Budget forecast that unemployment would continue to rise unless reflationary measures were taken. That forecast was made at a time particularly hazardous for forecasting because several indicators such as unemployment, overtime and short-time working, and the behaviour of earnings relative to wage-rates, were all affected by the power shortage before the miners' Wilberforce settlement. The power shortage meant that fewer workers than normal were being employed and those who were employed were working shorter hours than usual. This meant that all the labour market indicators were biased so as to suggest that the economy was much more depressed than it was; it appeared as if the recession was deepening, when it had already reached its lowest point.

Although allowance was undoubtedly made for this distortion of the indicators, it can now be clearly seen that the allowance was insufficient. Unfilled vacancies (a not very trustworthy series, it must be said)[1] had reached a low point in December 1971; unemployment, which lags behind the cycle in output since businesses tend to wait for movements in output to be confirmed before taking on more workers, reached a peak in March 1972. (The behaviour of the money supply was correctly predicting the coming state of the economy. In March 1972 the 12-month, 6-month and 3-month *moving average** growth rates of M3 were 12, 14 and 15 per cent respectively, clearly predicting an acceleration of economic activity.) The Treasury forecasting error was one of the reasons for the excessive easing of fiscal policy in the March 1972 Budget which contributed to excessive monetary growth. It contributed to this growth because there is a close relationship between fiscal and monetary policy. Easier fiscal policy expands the *borrowing requirement** of the government sector. Unless the government

[1] A study sponsored by the Department of Employment and published in its *Gazette* ('Vacancy Study', March 1974, pp. 222-227) concluded that '. . . the number of vacancies notified to the Department of Employment is often lower than the number of vacancies identified by the company, and that, therefore, the Department's vacancy figures most substantially underestimate net demand for labour.' (Quoted in John B. Wood, *How Little Unemployment?*, Hobart Paper No. 65, IEA, 1975, p. 41.)

* Glossary, p. 11.

sector borrows the equivalent amount from non-bank sources, its borrowing from the banks will increase—which expands the money supply. Fiscal expansion (which, except in the special case of the *balanced budget multiplier*,* expands the borrowing requirement of the public sector) generally leads to a monetary expansion, because governments can finance their borrowing by either printing more money or selling more bonds, and to do the latter they have to offer a higher yield, thus raising interest rates. This both tightens monetary conditions at a time when the government wishes to expand the economy, and depresses the price of existing government stock, which the authorities are unwilling to allow.[1]

The price of 'fine tuning'

The kind of errors described in Dow and Hansen, of which the above is an example, are an inevitable consequence of 'fine tuning'—of trying to keep the economy within a very narrow range of unemployment. Governments can be criticised for pursuing such an activist economic policy in the present state of inadequate economic knowledge. Such criticism was forcefully made in 'The Effect of a Full Employment Policy on Economic Stability' by Professor Milton Friedman in *Essays in Positive Economics*,[2] written some 20 years ago, and repeated in his Presidential Address to the American Economic Association in 1967.[3] This behaviour by governments leads to inflation over the long run, because the price level rises in booms and has not fallen in slumps of the depth we have experienced since 1945.

III. TECHNICAL ERRORS

We now turn to technical factors which have contributed to excessive growth of the money supply. The first is the method

[1] Further discussion of this point is in G. T. Pepper and G. E. Wood, 'Monetarist & Keynesian Indicators of the UK Economy', in M. J. Allingham and M. L. Burstein (eds.), *Resource Allocation and Economic Policy*, Macmillan, London (to be published in November 1976), and in Carl F. Christ, 'A Simple Macroeconomic Model with a Government Budget Restraint', *Journal of Political Economy*, January/February, 1968.

[2] University of Chicago Press, Chicago, 1953.

[3] 'The Role of Monetary Policy', *American Economic Review*, March 1968.

* Glossary, p. 11.

of easing fiscal policy, usually by reducing tax rates. The effect on Exchequer revenue is less in the first year following the reduction than in subsequent years because there may be a delay in administering the tax reduction, for example whilst PAYE is being recoded, and because many taxes are paid in arrears. In technical language the initial *first-year effect** is considerably less than the subsequent *full-year effect.** If there are several successive occasions when fiscal policy is eased, as between October 1970 and March 1972, the result is a cumulative build-up of 'full-year effects' in later years after economic activity has started to recover. Because of the relationship between fiscal and monetary policy (pp. 15-16), this cumulation of 'full-year effects' leads to a cumulatively increasing rate of monetary expansion.

Such a cumulative build-up can lead to more economic expansion than intended or forecast. To avoid this effect, fiscal policy should not be eased by tax reductions of a continuing nature, such as a cut in the standard rate of income tax. Instead tax reductions designed to stabilise a recession should be of limited duration, for example, by a rebate of part of the previous year's taxation, which was one of the ways in which fiscal policy was eased in the USA in May and June 1975.

'Competition and Credit Control'

A second technical factor which was important in contributing to excessive growth of the money supply in the last economic cycle was the change in the mechanism for controlling the monetary system in October 1971, known as 'Competition and Credit Control', the title of the Bank of England's explanatory document.

During the years before the change, bank loans had been rationed, particularly for the personal sector, by 'requests' from the Governor of the Bank of England to the Clearing Banks. 'Competition and Credit Control' abolished the rationing by withdrawing these directives and signifying an intention—subject of course to the qualifications with which the Bank of England surrounds every proposition—to rely less on them in the future. Given the depth of the recession, the subsequent release of pent-up demand for bank loans was not undesirable. However, the new control mechanism, which relied on *reserve asset ratios*,* had certain technical deficiencies;

* Glossary, p. 11.

the banks were to some extent able to manufacture reserve assets, and the underlying behaviour of the monetary aggregates tended to be masked by transitory money-market fluctuations of no fundamental economic significance. (Large fluctuations in the growth of the monetary aggregates occurred from month to month in response to minor changes in one interest rate relative to another.) Partially as a result, the expansion of bank lending to the private sector of the economy was excessive. From the beginning of 1972 to the end of 1973 loans rose by 100 per cent, at a time when real economic growth was only about 6 per cent.

In response to the evident failure of the existing method of monetary control, in December 1973 the Bank of England announced further control on the growth of the banks' interest-bearing *eligible liabilities** to reinforce the original form of 'Competition and Credit Control'. As a result, the Bank's ability to control bank loans has undoubtedly been strengthened. Unhappily, the new system is still unsatisfactory because it leaves the commercial banks able to guide their customers to other sources of finance, and indeed makes it profitable for them to do so. The National Institute of Economic and Social Research (NIESR), giving evidence before the Expenditure Committee of the House of Commons in March 1975, commented on the revised mechanism:

> '. . . it seems to us quite probable that this could be one of those cases where controlling the indicator destroys the value of the indicator itself. (An analogy—perhaps over-forceful—that suggests itself is with controlling the temperature of a boiler. The aim is to prevent the boiler from blowing up, and this should be achieved by controlled stoking using the pressure gauge as an indicator. It would be absurd to fix the pressure gauge (the indicator) and carry on stoking in the belief that all was well).'[1]

The interest-bearing eligible liabilities of the banks are a substantial component of the broad measure of the money supply; so controlling them keeps the money supply down. But so long as the banks can channel funds elsewhere—for example, to current accounts (a non-interest-bearing liability) by offering increased services in return for current account

[1] First Report from the Expenditure Committee, Session 1975-76: *The Financing of Public Expenditure*, HC 69—II, p. 262.

* Glossary, p. 11.

deposits—and so long as funds can flow into such *short-term paper** as Treasury Bills and local authority seven-day deposits, monetary pressure on the economy can continue unabated without it showing in the broad monetary aggregate. The control mechanism is such that M3, which does not include short-term paper of the sort described above, is no longer a good measure of the liquidity of the private sector and a good indicator of the direction of macro-economic policy. In such circumstances a different financial aggregate fulfils this role. Adjustments can be made to published M3 figures to allow for changes in the private sector's holdings of other assets, but these give a very approximate indication as compared to that given by M3 before it was distorted. Neither outsiders *nor the authorities* have a good indicator of the direction of monetary policy.

Sudden release of accumulated savings

A third technical problem is more deep-rooted. In a recession confidence inevitably is weak, so the private sector's *marginal propensity** to spend from any increment to its income is unusually low. Any funds which accrue to the private sector are saved in abnormally large proportion, and much of these savings accumulate in a highly liquid form—in bank deposits or short-term government paper (such as Treasury Bills): a further inevitable consequence of weak confidence. As confidence returns following further pump-priming and a gradual rise in private expenditure, these liquid funds are spent, either directly by their owner or indirectly *via* loans to other people in the private sector. This build-up and then sudden release of funds makes the timing and extent of recovery very hard to forecast and control. An analogy used to dramatise this difficulty is to compare a policy of easy money to 'pushing on a string'. Until confidence returns, 'slack string' accumulates.

In a recession, bank loan demand by the private sector is sluggish. Meanwhile, as the public sector borrowing requirement increases (as it usually does in a recession: p. 31) there is an accumulation of government debt in the banking system. The banks thus acquire reserve assets. As a result, there is a large increase in the ability of the banks to expand lending to the private sector.

* Glossary, p. 11.

As the economic recovery starts, confidence returns and with it bank loan demand. The banks satisfy the loan demand by drawing on their surplus reserves, i.e. the slack in the string starts being used up. If a lot of string has accumulated during the recession, considerable momentum can build up whilst the slack is being withdrawn. When the string becomes taut, too much momentum may have built up for the credit control mechanism to arrest loan demand without an increase in interest rates so sharp as to violate 'political' constraints, e.g. the cost of building society mortgages, and perhaps to provide a damaging shock to the recovery of the private sector by undermining its confidence.

This problem of 'accumulated slack string', withdrawal and build-up of undesirable momentum is not confined only to the technical operations of the banks. In a recession some excess money will also accumulate in short-term financial assets such as building society deposits and, as observed towards the end of 1975, Treasury Bills. That is to say, liquidity will also accumulate in the non-bank private sector. When confidence returns expenditure can be financed by this liquidity.

Three ways to reduce surplus liquidity

The problems caused by the accumulation of surplus liquidity in a recession can be tackled in three ways. First, the economy can be stimulated by a method which does not produce an accumulation of surplus liquidity. Secondly, action can be taken to absorb some of the surplus liquidity in a way that does not delay economic recovery. Thirdly, determined action can be taken to neutralise most of the remaining surplus liquidity very soon after confidence returns.

1. Excess liquidity can *in principle* be reduced by choosing the method of 'pump-priming' that minimises the build-up of excess funds for each unit of stimulus to output. The best method for this purpose is additional expenditure by the government and nationalised industries[1] because output rises by the full amount of the expenditure, even before any 'multiplier' effects (it has a 100 per cent *first-round effect** on output). The catch is that variations in government expenditure

[1] Hereinafter referred to as the 'government sector' or 'government expenditure', depending on the context.

* Glossary, p. 11.

take a long time to arrange compared with tax cuts and monetary policy. If additional government expenditure is authorised at the trough of a recession, it will take place after the start of the economic recovery, and this delay will add to the problems of controlling the recovery. If a temporary boost to government expenditure is being used as a counter-cyclical weapon, it should be applied as soon as possible after the requirement for expansionary measures has definitely been established.

We do, however, have serious doubts about this remedy. Such boosts to public expenditure *in practice* have not been temporary. Further, in a typical recession the requirement for expansionary measures has not been definitely established sufficiently in advance of the trough of the recession. The remedy is attractive in theory but unworkable in practice.

2. The method of absorbing surplus liquidity in a recession without delaying the economic recovery is to sell gilt-edged stock (government bonds) in such a way that does not lead to higher interest rates, which should be avoided because they would delay the recovery of economic activity. The monetary authorities should offer for sale gilt-edged stock with *variable* rates of interest (variable *coupon** stock) in addition to the present type of gilt-edged stock with fixed rates of interest (fixed coupon stock).

Potential investors are becoming increasingly aware that the general level of interest rates has always risen during an economic upswing. The prices of fixed-coupon gilt-edged stock fall as the general level of interest rates rises. Potential gilt-edged investors are discouraged, therefore, from buying them in the trough of a recession by fears of a fall in their prices during the subsequent upswing in economic activity. Funds tend to be placed, instead, in short-term investments such as Treasury Bills. The solution is for the authorities to offer gilt-edged stock of a type that is illiquid compared with Treasury Bills but that does not necessarily fall in price as the general level of interest rates rises. A variable-coupon gilt-edged stock of fixed term to redemption meets such a requirement.

The coupon would be a fixed margin, say 1 per cent, above the going Treasury Bill rate. The price of such gilt-edged stock would not automatically fall with a rise in the general level of interest rates because its coupon would rise. The stock

* Glossary, p. 11.

would be illiquid compared with a Treasury Bill because it would be redeemable only after a fixed period, such as seven years from issue, instead of after the three months of Treasury Bills. (In a squeeze on general liquidity the price of a variable-coupon gilt-edged stock with fixed period would probably fall, but not by as much as the price of a fixed-coupon stock of similar term).

3. The third way of tackling the accumulation of surplus liquidity in a recession is by determined action to neutralise most of it very soon after confidence returns. To continue the metaphor of accumulated slack string, withdrawal and build-up of undesirable momentum: a much more desirable policy would be to take up the slack string as confidence starts to return and then to pay the string out gradually. The object is to prevent the economic recovery from developing an uncontrollable momentum. When confidence returns, the demand for bank loans returns. The ability of the banks to make loans should be controlled immediately, if necessary by action such as a large call for *special deposits** of sufficient size to exert mild pressure on the reserve asset ratios of the banks. The special deposits can then be released gradually to allow an orderly increase in bank lending.

The deficiencies in policy discussed so far have all contributed in some part to inflation in the UK. All have been damaging to price stability. Nevertheless, they could be rectified relatively simply. This is unhappily not true of other factors, the influence of which is very long-lasting. It is to them that we now turn.

IV. FUNDAMENTAL FACTORS

In the 1950s there appeared to be a relationship in the UK between the amount of unemployment and the rate of inflation —the lower the rate of unemployment, the higher the rate of inflation, and *vice-versa*. The relationship, known as the 'Phillips Curve' (after the late Professor A. W. Phillips, the first economist to document it),[1] appears to have broken down. With unemployment low, inflation has not remained at a high but steady rate, but has accelerated. The underlying cause of

[1] In 'The Relation between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1861-1957', *Economica*, November 1958.

* Glossary, p. 11.

accelerating inflation has been a progressively faster expansion of the money supply. The most important basic reason why the UK authorities permitted this expansion of the money supply was that it was required to preserve employment at the rate of the last two decades. There are various (complementary, not competing) reasons why unemployment would have risen if the money supply had not been expanded at a rate too high for price stability.

Inflationary expectations and wage claims

The first reason has been analysed by Professor Friedman in *Unemployment versus Inflation?*.[1] (The analysis was originated by Professor Friedman[2] and Professor Edmund Phelps[3] in independent papers.) At each round of wage negotiations, wage earners attempt to negotiate wage increases in *real* terms. Accordingly, since wage claims are made in *money* terms, these claims will increase if the expected level of inflation increases between one wage round and the next. If the authorities preserve demand at too high a level—if they maintain a state of excess demand—wage claims and wage awards will therefore rise in money terms. If subsequently the money supply is not increased in line with the resulting growth of money incomes, unemployment will rise as a result of the tighter monetary policy. In the recent past in the UK, the money supply has been allowed to expand to prevent unemployment from rising, and the expansion has then caused inflation to accelerate further. This is why, if employment is maintained at too high a rate, inflation does not remain steady but accelerates.

At the same time as diagnosing the illness, Professor Friedman prescribed the cure. Plainly the origin of the trouble must be removed. The authorities must not preserve demand at too high a level; unemployment must be allowed to rise to what Professor Friedman has termed its 'natural rate',[4] i.e. the rate

[1] Occasional Paper 44, IEA, 1975.

[2] Milton Friedman, *American Economic Review, op. cit.*

[3] E. S. Phelps, 'Money Wage Dynamics and Labour Market Equilibrium', *Journal of Political Economy,* 1968.

[4] This rate, it should be emphasised, is *not* a constant; it depends on many factors, including the efficiency of labour markets. What Professor Friedman has argued is *not* that this rate cannot be lowered but that it cannot be lowered by macro economic policy. Micro-economic policies—such as retraining schemes to improve the allocation of resources—are the appropriate tools for this task. (*Unemployment versus Inflation?, op. cit.*)

consistent with price stability. In addition, if an economy has been managed with unemployment below its 'natural rate' and is in an inflationary state, the subsequent inflationary expectations must also be eliminated. Unemployment must be allowed to rise temporarily above its 'natural rate' until people no longer expect inflation and make wage settlements in that new expectation. The economy must thus pass through a temporary, but possibly quite prolonged, recession on the path to price stability.

It should be emphasised that the forces reducing wage inflation in a recession are not only a supply of labour in excess of the demand. In a recession, supply exceeds demand for goods in general and, accordingly, price inflation tends to decelerate independently of any reduction in wage inflation. The deceleration in price inflation then reduces the demand for wage increases in money terms.

Although the proposed policy requires a rise in unemployment in the short run, its long-run aim is to reduce unemployment below the rate at which it would otherwise be: accelerating inflation would otherwise eventually cause unemployment to rise very rapidly. Professor Friedman accepts, of course, that allowing unemployment to rise substantially in the short run is an unpleasant remedy. In order to limit the unpleasantness he advocates a recession of controlled depth (which should be the consequence of the gradual reduction by the authorities of the rate of growth of the money supply). However, compared with the shock treatment of a really deep recession, controlling the depth of the recession would prolong its necessary duration. To shorten the duration Professor Friedman advocates various policies, such as indexing wages and other contracts. Nevertheless, for the cure to be effective, the recession must last probably for several years.

'Crowding out'[1]

The second reason why the money supply has been expanded to preserve employment can be discussed under the heading of 'crowding out'. The economy can be classified into four

[1] This section uses the technique of 'flow of funds analysis'. The technique focusses attention on the pattern by which funds flow from one sector of the economy to another, and on the influences on that pattern. Explanations of this technique, and discussions in the literature on it, are included in the 'Suggested Further Reading', below, p. 58.

sectors—public,[1] overseas, personal and corporate. The 'crowding out' argument can be summarised briefly as follows.

The banking system is the residual source of finance for both the public (after any sterling finance accruing from abroad, discussed later) and corporate sectors. If the supply of savings from the personal sector is inadequate to meet the demands of the public and corporate sectors, bank lending to them will increase. As the total of the banking sector's assets increases, so will the banking sector's liabilities (principally deposits) and, therefore, so will the money supply. If the demand for finance substantially exceeds the supply in the economy as a whole, the money supply will tend to increase. If the public sector maintains its own demands for finance any action by the monetary authorities to control the money supply will result in the corporate sector being denied funds: hence the description 'crowding out'. If the corporate sector is crowded out through being unable to raise funds for investment, unemployment will eventually rise. In the past the UK authorities have attempted to maintain their own demands without squeezing the corporate sector, and have in that attempt expanded the money supply.

'*Flow of funds analysis*' *of four financial sectors*

How does the financial position of each of the four sectors of the economy vary over the business cycle? This analysis will lead us to the cure for this source of pressure to excessive monetary expansion.

(i) The Corporate Sector

The corporate sector can be sub-divided into banks, non-bank financial companies, and industrial and commercial companies. Table I details the financial deficit of industrial and commercial companies, which have to raise finance for their industrial investment—gross domestic fixed capital formation (col. 1)—and for stock building.

Column 2 shows the physical increase in stocks. The most important source of finance is cash generated internally (col. 4), which consists mainly of retained profits and provision for the depreciation of assets. (Columns 2 and 4 have been adjusted for stock appreciation, i.e. the increase in the value of

[1] The 'public sector' is a term conventionally used in this context to refer to central government, the local authorities, and the nationalised industries.

TABLE I

FINANCIAL DEFICIT OF THE CORPORATE SECTOR: INDUSTRIAL AND COMMERCIAL COMPANIES, 1962-75

	1 *Gross Domestic Fixed Capital Formation* £m.	2 *Physical increase in Stocks** £m.	3 *Total* £m.	4 *Internal Cash Generation** £m.	5 *Deficits* £m.	6 *Deficits as % of GDP* %
Year to:						
1962 2nd Half	1,929	-21	1,908	1,954	-56	-0.2
1963 2nd Half	1,862	170	2,032	2,453	-421	-1.6
1964 1st Half	2,035	421	2,456	2,849	-393	-1.4
2nd Half	2,288	654	2,942	2,816	126	0.4
1965 1st Half	2,406	593	2,999	2,764	235	0.8
2nd Half	2,436	455	2,891	2,829	62	0.2
1966 1st Half	2,438	400	2,838	2,382	456	1.4
2nd Half	2,423	265	2,688	2,594	94	0.3
1967 1st Half	2,446	216	2,662	2,849	-187	-0.6
2nd Half	2,366	206	2,572	2,783	-211	-0.6
1968 1st Half	2,362	129	2,491	2,927	-436	-1.2
2nd Half	2,615	354	2,971	3,250	-279	-0.7
1969 1st Half	2,823	515	3,338	3,314	24	0.6
2nd Half	3,001	353	3,354	3,212	142	0.4
1970 1st Half	3,174	377	3,551	2,860	691	1.7
2nd Half	3,357	433	3,790	2,891	899	2.1
1971 1st Half	3,431	120	3,551	3,201	350	0.8
2nd Half	3,467	-94	3,373	3,448	-75	-0.2
1972 1st Half	3,570	-158	3,412	3,703	-291	-0.6
2nd Half	3,777	-166	3,611	4,167	-556	-1.0
1973 1st Half	4,154	339	4,493	5,130	-637	-1.1
2nd Half	4,621	822	5,443	5,025	418	0.7
1974 1st Half	5,105	776	5,881	3,882	1,999	3.0
2nd Half	5,850	1,079	6,929	3,670	3,259	4.5
1975 1st Half	6,442	-418	6,024	4,285	1,739	2.1

Source: Central Statistical Office. *Adjusted for stock appreciation.

stocks due to inflation has been excluded.) Column 5 shows the 'financial deficit': industrial and commercial companies' requirement for external finance. Column 6 shows the financial deficit as a percentage of gross domestic product (GDP).

Cyclical pattern of corporate 'financial deficit'

The financial deficit of industrial and commercial companies has a marked cyclical pattern over the business cycle. The peak deficit occurs towards the peak of the business cycle, as the economy slides into recession. The trough of the deficit occurs towards the trough of a recession. As the economy slides into recession, industrial and commercial companies are forced into larger financial deficit by the squeeze on profits and the involuntary accumulation of stocks of unsold finished goods, which both occur at that stage of the business cycle. Companies then try to restore their financial position in three ways.

First, stockbuilding declines or (depending upon the depth of the recession) stocks may even be run down; the decline in total stocks is of course delayed by any involuntary accumulation of stocks of unsold finished goods.

Secondly, capital formation is reduced (in real terms, although it may continue to rise in money terms because of inflation); here also there is a delay because of the long gestation period of capital projects authorised in the previous boom.

Thirdly, companies attempt to reduce the fall in profits by redundancies and other retrenchment. Table I shows the pattern; the relevant retrenchment years are 'boxed'.

As the trough of a recession passes, firms start to restore stocks to a more normal level and their financial deficit starts to increase. An offsetting factor is buoyant internal generation of cash as profits respond to more intensive use of productive capacity. In the initial stage of the upswing, stocks of finished goods tend to be run down—delaying the build-up of total stocks—and, with the utilisation of capacity initially low, there is also a delay before investment projects are authorised and, of course, a further delay before they are completed. Because of the combination of these delays, the corporate sector's demands for finance increase sharply in the latter stages of the upswing of the business cycle. The total amount of finance then required for stockbuilding and investment tends to be very large. This increase in corporate demand suggests plainly that unless the other sectors of the economy accommodate themselves to the corporate sector's demands, the corporate sector will be starved of finance—it will be 'crowded out' of capital markets. It is therefore necessary to examine the behaviour over the cycle of the financial positions of the other sectors.

Before doing so, we note that, as well as the marked *cyclical* pattern over the business cycle, Table I shows there has been a *secular** trend. The financial deficit of industrial and commercial companies has been growing over the years, both in absolute terms and as a percentage of GNP. The significance of this trend is discussed at pp. 41-43.

(ii) The Personal Sector

The personal sector includes not only private individuals but also unincorporated businesses, including many farms.[1] Unincorporated businesses undertake capital formation and stockbuilding just as the incorporated businesses of the corporate sector. The most important capital formation by persons is the purchase of new dwellings. Table II gives the data.

It will be seen that capital formation and stockbuilding by unincorporated businesses (col. 2) do not have a strong cyclical pattern over the business cycle, probably because farms are not directly affected by it. There are, however, cyclical fluctuations in new dwellings (col. 1), caused principally by fluctuations in the amount of finance available for house mortgages.

Lag in building society interest rates

When the general level of interest rates rises during an economic boom, the rates offered by building societies on their deposits tend to lag. The principal reason for this phenomenon is the pressure from successive governments to keep interest rates on mortgages low. (There are also minor reasons, such as the difficulty of making interest-rate changes for smaller societies not yet computerised.) The building societies therefore become uncompetitive and, as a result, the growth of their deposits slows down. With less finance available, mortgages have to be curtailed. The acquisition of new homes falls with the decline in people's ability to finance house purchase.

The converse applies in a recession: building society rates of interest tend to lag behind the fall in other rates and consequently they experience a substantial inflow of funds. There may be a lag whilst the building societies are rebuilding their portfolios of liquid assets and before potential home buyers realise that building societies are no longer severely rationing

[1] Some farms are limited companies and therefore appear in the corporate sector.

* Glossary, p. 11.

TABLE II

FINANCIAL SURPLUS OF THE PERSONAL SECTOR, 1962-75

	1	2	3	4	5	6	7
	Capital Formation & Stocks				*Other net*		
	Dwellings	*Unincorporated Business & Farms*	*Total*	*Net Saving*	*Internal Cash Generation*	*Surplus*	*as % of GDP*
	£m.	£m.	£m.	£m.	£m.	£m.	%
Year to:							
1962 2nd Half	519	389	908	1,515	–124	483	1.9
1963 2nd Half	553	455	1,008	1,626	–126	492	1.8
1964 2nd Half	676	533	1,209	1,864	–63	592	2.0
1965 1st Half	703	448	1,151	2,081	–100	830	2.8
2nd Half	705	379	1,084	2,184	–180	920	3.0
1966 1st Half	700	413	1,113	2,399	–202	1,084	3.4
2nd Half	698	393	1,091	2,384	–203	1,090	3.3
1967 1st Half	710	416	1,126	2,301	–188	987	2.9
2nd Half	750	475	1,225	2,340	–209	906	2.6
1968 1st Half	798	512	1,310	2,386	–258	818	2.3
2nd Half	833	558	1,391	2,337	–319	627	1·7
1969 1st Half	838	511	1,349	2,449	–456	644	1.7
2nd Half	801	507	1,308	2,579	–501	770	2.0
1970 1st Half	775	517	1,292	2,853	–492	1,069	2.6
2nd Half	812	526	1,338	3,150	–529	1,283	3.0
1971 1st Half	914	678	1,592	3,315	–512	1,211	2.7
2nd Half	1,060	929	1,989	3,416	–506	921	1.9
1972 1st Half	1,212	1,178	2,390	3,810	–544	876	1.7
2nd Half	1,388	1,216	2,604	4,335	–477	1,254	2.3
1973 1st Half	1,553	1,151	2,704	4,913	–567	1,642	2.8
2nd Half	1,654	1,022	2,676	5,727	–816	2,235	3.6
1974 1st Half	1,631	750	2,381	6,409	–1,015	3,013	4.6
2nd Half	1,657	578	2,235	7,531	–1,049	4,247	5.9
1975 1st Half	1,901	597	2,498	9,088	–994	5,596	6.8

Source: Central Statistical Office.

mortgages; but eventually mortgages are increased and, with them, the personal sector's acquisition of new dwellings. The cyclical fluctuations in new dwellings tend to occur earlier in the business cycle than the fluctuations in capital formation by the corporate sector.

The net savings of the personal sector are shown in column 4 of Table II. They consist of gross savings (the amount that people save out of their incomes) less dissavings by selling capital assets and borrowing to finance consumption. The factors determining the amount of gross savings are complex. In a recession, for example, people's incomes are reduced and gross savings would, therefore, be expected to fall as people attempt to maintain the pattern of their expenditure. But confidence is low—particularly if people become worried about maintaining their future income—and gross savings, therefore, tend to rise. The behaviour of dissavings is much more straightforward than is that of gross savings. Dissavings fall in a recession as a result of restrictions imposed in the previous boom on hire purchase contracts and on bank lending to persons. Further, the fall in the stock market in a recession may discourage depletion of capital, because people dislike selling assets at a loss, and even at prices significantly below their previous level.

Importance of movement in net savings

It is what happens to *net* savings that is crucial here, for it is the savings left after repaying debt commitments and new borrowing that determine the flow of finance available for the corporate sector. What, then, happens to net savings over the economic cycle?

On balance, insofar as there is a clear-cut movement, net savings tend to rise in a recession and fall in a boom. These movements are not in general very pronounced, but it is very plain indeed that net savings do *not* fall in recessions and rise in booms. Net savings plainly do *not* move in line with the financial demands of the corporate sector which, it will be recollected, clearly fall in recessions and rise in booms. It is starting to become plain that the behaviour of the public sector is crucial for either alleviating or aggravating this imbalance. We therefore now examine the behaviour of that sector to see in what direction its influence tends.

(iii) The Public Sector

One would expect that, other factors being equal, the financial deficit of the public sector (the central government, local authorities and public corporations, the last consisting mainly of nationalised industries) would automatically increase in a recession and decrease in a boom. If the public sector did behave in this way, it would be alleviating the difficulties arising from the patterns of financial deficits and surpluses in the corporate and personal sectors.

Tax revenue and the government deficit

The most important reason for expecting the financial deficit of the central government to increase in recessions and decrease in booms is variation in tax receipts according to the pace of economic activity. In a recession, receipts of income tax are reduced because of lower personal incomes. As a result of reduced corporate profits, the amount of corporation tax payable will decline. The yield of expenditure taxes (the most important being VAT, motor tax and duties on alcohol, tobacco and petrol) also falls with the decline in expenditure. A further factor that may contribute to the increased financial deficits of the government in a recession is a rise in social security payments, the main item being unemployment benefits.[1] In spite of the automatic variations in tax revenue over the business cycle, the financial deficit of the public sector has not displayed a clear cyclical pattern. The data are shown in Table III.

The absence of a stable cyclical pattern is explained by changes in government policy. At the boom turning point of the business cycle there have nearly always been crisis 'stop' measures. The increases in taxation and reductions in public expenditure included in such measures have tended to offset the effect on the budget deficit of the automatic loss of revenue in the subsequent recession. At the trough turning point of the business cycle, there have often been major 'go' measures. The reduction in tax rates included in these measures has offset the automatic increase in tax revenue due to the subsequent

[1] In practice, the deficit of the National Insurance Fund has not shown a marked pattern over the business cycle, for contributions have always been adjusted rapidly.

TABLE III

FINANCIAL DEFICIT OF THE PUBLIC SECTOR, 1962-75

	Financial Deficit		*Unemployment*
	£m.	*% GNP*	*%*
Year to:			
1962 2nd Half	527	2.1	1.8
1963 2nd Half	833	3.1	2.1
1964 1st Half	1,128	4.0	1.8
2nd Half	1,004	3.4	1.6
1965 1st Half	879	2.9	1.4
2nd Half	853	2.7	1.3
1966 1st Half	722	2.2	1.2
2nd Half	963	2.9	1.3
1967 1st Half	1,227	3.6	1.7
2nd Half	1,648	4.7	2.1
1968 1st Half	1,795	5.0	2.3
2nd Half	1,136	3.0	2.3
1969 1st Half	66	0.2	2.3
2nd Half	-335	-0.9	2.3
1970 1st Half	-754	-1.8	2.4
2nd Half	-715	-1.7	2.4
1971 1st Half	-136	-0.3	2.8
2nd Half	313	0.6	3.3
1972 1st Half	1,019	2.0	3.7
2nd Half	1,737	3.2	3.7
1973 1st Half	2,335	4.0	3.2
2nd Half	2,812	4.5	3.5
1974 1st Half	3,726	5.7	2.4
2nd Half	5,079	7.0	2.7
1975 1st Half	6,961	8.5	3.4

Source: Central Statistical Office and *Department of Employment Gazette.*

Summary of Hobart Paper 68

Too Much Money . . .?

GORDON PEPPER & GEOFFREY WOOD

1. Monetarists warned about the 1974 and 1975 inflation two years before it occurred; the warnings were issued following the explosion in the money supply in 1972 and 1973. The Government did not act to control the money supply because the action necessary in 1973 would have aborted the economic recovery.
2. It is essential to understand the reasons for and the pressures behind excessive monetary growth if the money supply is to be controlled and economic recovery permitted at the same time.
3. Various technical factors contributed to the problem: attempts to fine-tune economic activity more accurately than the state of knowledge permits, inadequacies in 'Competition and Credit Control', the easing of fiscal policy in a way that has a cumulative effect, the inevitable build-up of liquidity in a recession not being neutralised sufficiently quickly.
4. The most important reason why governments allow excessive monetary growth is their attempts to stop unemployment from rising.
5. In the absence of monetary growth, a rise in money wages faster than output would lead to unemployment.
6. Monetary growth occurs when both the Government and companies borrow from the banks, which are the residual source of finance for both. Such borrowing tends to occur when the demand for finance exceeds the supply of savings in the economy as a whole.
7. All forms of price control and price restraint are inflationary because they increase companies' demand for bank finance.
8. The Government's demand for finance must fall rapidly as business activity recovers from a recession if funds to finance the business recovery are to be made available.
9. Persistent 'crowding out' of the corporate sector is responsible for the continued weakening of corporate balance sheets. It undermines the strength the economy requires to withstand the remedial measures necessary to conquer inflation.
10. Persistent preoccupation with short-term palliatives is responsible for the long-term deterioration of the UK economy. But the trend is reversible. *The technical solution is available*—if the electorate and the Government will take a longer-term view.

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higher pace of activity. This absence of pattern is in marked contrast to the USA[1] where variations in the budget deficit over the business cycle are clearly apparent.

The financial deficit of the UK public sector has thus not mitigated the consequences of the pattern of financial imbalances elsewhere in the economy. Table III also shows that the financial deficit of the public sector has had a marked secular trend. The deficit has increased in both absolute terms and as a percentage of GNP. A similar trend was noted for the deficit of industrial and commercial companies (p. 28).

Recapitulation

This, then, is the pattern of the financial deficits of the broad sectors of the economy over the business cycle. During the initial stages of a recession expenditure by persons on new dwellings falls and, as the recession develops, personal savings tend to rise. As a result there tends to be an increase in the amount of surplus savings by the personal sector available to finance the other sectors. Since the financial deficit of the corporate sector falls in a recession (as a result of de-stocking, etc.), there is a large rise in the amount of surplus savings available to the public sector, which explains why its deficit can be financed without excessive resort to borrowing from the banking sector much more easily in a recession than in a boom. During the initial stages of an economic recovery, personal expenditure on new dwellings rises and, a little later in the cycle, personal net savings tend to fall, so that there is a reduction in the amount of surplus savings by the personal sector available to finance the other sectors.

Because of the recovery of profits as the economy moves out of recession, the demand for external finance by the corporate sector is initially modest, but as stockbuilding and capital formation grow rapidly in the later stages of an economic

[1] In the USA there is a widespread awareness of this pattern and, so that the effect of policy changes can be separated from the effect of changes in the pace of economic activity, sophisticated calculations are made about what the budget deficit would have been if the pace of economic activity had remained stable. Such deficits are variously described as constant employment, high employment or full employment deficits, depending upon the assumed level of employment. Such calculations have recently become available for the UK, for example in the February 1976 NIESR *Economic Review* and the March 1976 *Economic Policy Review* of the University of Cambridge Department of Applied Economics. The results so far, however, appear to be excessively dependent on the econometric model used.

recovery, so do its financial requirements. If the financial demands of the public sector do not then decline, there will be major difficulties for the economy as the public and corporate sectors compete for the available funds.

The resolution of the battle for funds

If the financial deficit of the public sector does not fall, at least one of three results must follow.

1. *'Printing' money*

First, the demand and supply of finance can be equated over the short run by finance provided by the banks. If the public sector does not receive sufficient finance from the overseas, corporate and personal sectors to cover its financial deficit, the balance will be provided automatically by the banking sector.

If the government makes a payment to a person by cheque, his deposit will increase (on the liability side of his bank's balance sheet) when the cheque is cleared by his bank, while on the asset side its balance with the Bank of England will rise. A balance with the Bank of England does not earn interest and therefore the commercial bank will probably place the additional funds on call with the discount market, i.e. it will make a loan, repayable on demand, to a financial intermediary called a discount house.[1] The discount market will then have surplus funds, in the sense that there is inadequate demand in the banking system and therefore interest cannot be earned. The Bank of England will absorb these surplus funds by selling Treasury Bills to the discount market as part of its day-to-day money market operations. The end-result is that the government will have borrowed from the banking sector, in this example a discount house, by issuing Treasury Bills.

When the government borrows from the banking system, it has automatically increased the money supply, because bank deposits rise in line with the increase in bank assets. In addition (as in the above example) it issues Treasury Bills to the discount market, thus expanding the stock of reserve assets and permitting, as a *second-round effect*,* the banking sector to make further loans to the private sector. One way, then, in which

[1] These and other financial intermediaries are described in N. J. Gibson, *Financial Intermediaries and Monetary Policy*, Hobart Paper 39, IEA, Second Edn., 1970.

* Glossary, p. 11.

the battle for funds can be resolved is by the government borrowing from the banking system. This is the way in which, in modern economies, governments 'print' money—before the development of the banking system governments raised finance (in times of war, for example) by printing more £ notes or by debasing the coinage.

The banks are the corporate sector's as well as the government's residual source of finance. Whatever funds companies have not raised in the stock market and from other sources of long-term capital (i.e. direct from assurance companies or from overseas) tend to be obtained by drawing on overdraft facilities and other lines of credit with banks. Therefore, if the demand for finance by the public and corporate sectors exceeds the supply of finance from the personal sector, bank lending to the corporate as well as to the public sector tends to increase, and with it the money supply. This has been a major cause of increases in the money supply in the UK during upswings of the business cycle and is a way in which the battle for funds has been resolved. Banks are in a position to make substantial loans at that stage in the business cycle because during a recession they tend to accumulate reserve assets substantially in excess of what they require to satisfy either the Bank of England or their own prudence (p. 19).

2. *'Crowding out'*

A very different situation results if the authorities do not permit the money supply to grow excessively. Such a policy has been followed in the US since Dr Arthur Burns became Chairman of the Board of Governors of the Federal Reserve System in 1970. If the authorities follow such a firm policy of control of the money supply and the public sector persists in its financial demands, money market conditions will tighten until the corporate sector is denied the finance that it wants, because in Britain there is at present no limit to the interest rate the government can pay for funds. This 'crowding out' of the corporate sector is the second way in which the battle for funds can be resolved.[1]

[1] 'Crowding out' is an expression which has suddenly become fashionable. But the label is being attached to different things without them being clearly distinguished. An essential condition for 'crowding out' to occur in any market is for demand to exceed supply. When a demand for a product exceeds the supply its price will usually rise, discouraging demand and encouraging supply, until
[*Continued on p. 36*]

If funds cannot be borrowed from overseas (considered below) and if the government does not curtail its financial demands as the economy recovers, it has to choose between permitting excessive monetary expansion and halting the recovery of the private sector. *And that is a choice only in the short term.* If monetary expansion is chosen, then, as inflation accelerates, interest rates start to rise and the financing requirements of companies rise with the level of prices. Inflation itself then crowds out the private sector.

3. *Funds from overseas*

The possibility of obtaining funds from abroad cannot, of course, be set aside, particularly in the UK. This is the third way in which the battle for funds can be resolved. When the demands for finance by the public and corporate sectors exceed the supply of finance from the personal sector, the gap can be bridged by borrowing from overseas.

(iv) The Overseas Sector

The financial position of the overseas sector is virtually the current account of the balance of payments with its 'sign' changed. (A loan from, say, Kuwait is a *credit* in our reserves; in the balance of payments accounts it is a *debit*.) Hence a current account deficit by the UK, which implies that foreign countries are earning from the UK more than they are spending here, is equivalent to an almost equal financial surplus of the overseas sector.

[*Continued from p. 35*]

demand and supply are equated. Some commentators have described this normal market process of a rise in price discouraging excess demand as an example of 'crowding out', but the term is usually used to describe more special conditions—in particular that the demand for the product is dominated by one large buyer who is relatively insensitive to price changes. In such a circumstance, any reduction in demand necessary to equate demand and supply is forced largely onto the weaker buyers. 'Crowding out' becomes especially acute when supply is also relatively insensitive to price changes; almost the whole of the adjustment process is then forced onto the smaller buyers. In the acute case, when demand substantially exceeds supply, the rise in price necessary to reduce the demand of the smaller buyers may be so large that the market is disrupted. When a market is disrupted willing buyers cannot obtain the quantity of goods they desire—in effect supply becomes rationed.

In the 'crowding out' described in this *Paper*, the Government is the dominant, interest-sensitive demander of finance. The acute condition is also present because a rise in interest rates has little effect on gross savings.

The financial position of the overseas sector fluctuates over the business cycle like that of the other sectors; the current account of the balance of payments has a marked cyclical pattern (surplus in recessions, deficit in booms), a major element being fluctuations in imports due to the cycle in stockbuilding. Whenever the demand for finance from the government and corporate sectors has exceeded the supply from the personal sector, the current account of the balance of payments has tended to deteriorate, a natural consequence of excess demand pressures at home. The 'crowding out' of the corporate sector is merely postponed because, sooner or later, government has to act to correct the balance of payments.

The data in Tables I, II and III show the financial surpluses or deficits of industrial and commercial companies, persons, and the public sector, after demand and supply have been balanced. The financial surpluses and deficits of the four sectors comprising the whole economy (public, corporate, personal and overseas sectors) must sum to zero because by definition someone's surplus is someone else's deficit. (In practice there is also a small residual error in the statistics.) From that data alone it would not be possible to show that the demand and supply of finance, in the absence of inflationary monetary expansion, had ever been out of balance; for these figures represent the situation after supply and demand for finance have been equalised, when any 'crowding out' has already taken place.

Accelerating inflation aggravates excess demand for finance

Our investigation of the financial positions of the four sectors in each phase of the business cycle has, however, shown that the demand for finance at certain phases of the cycle exceeds the supply available *without excessive monetary expansion.* It has also explained why the converse is found in a down-swing —that the public sector deficit can then very easily be financed without borrowing from the banks.

Further, a secular upward trend has been noted in the financial deficits of both the public sector and of industrial and commercial companies, indicating that the demand for funds has increasingly exceeded the supply in the upswing of successive economic cycles. The reason for the secular trend is accelerating inflation.

Recent experience in the UK shows the way in which inflation can be responsible for a substantial unintended increase in public expenditure and, thereby, in the financial deficit of the public sector. Further, companies find it very difficult to raise prices quickly enough to finance capital expenditure from internal generation of cash. Inertia and the lack of inflation accounting—for example, assets being depreciated at historical rather than replacement cost—are important. Further, inflation accelerating more rapidly than anticipated will tend to reduce profits. The internal generation of cash needs to rise not just with the increased cost of gross domestic capital formation and physical increase in stocks. Stocks which are unchanged in physical terms have to be replaced at higher prices. The cost of such stock appreciation is of major importance. Many commercial transactions are costed according to the out-of-pocket cost to the company—input costs are passed on to final prices according to the historical cost to the company of the input, rather than to its replacement cost. With such contracts, the company does not profit from stock appreciation. Even when a company does so, the profit may be shared with the customer, e.g. to maintain customer loyalty. In general, internal generation of cash does not nearly keep pace with stock appreciation.

Concealing inflation by subsidies

Accelerating inflation thus causes a deterioration in the financial deficits of the public sector and industrial and commercial companies. Matters are made much worse by any attempt to *conceal* inflation. Subsidies can take many different forms. All of the following six subsidies reduce the prices which the personal sector (i.e. people in general) has to pay. Subsidies from the government to the corporate sector which are not passed on to the personal sector through lower prices have been excluded from the list, because it is subsidies to the personal sector which reduce the cost-of-living index.

1. Direct subsidies on housing and food, etc. The 1974 Public Expenditure White Paper forecast in constant prices[1] that in 1975-6 housing subsidies would cost £913 million and food subsidies £488 million.

[1] The term used by the Treasury is 'survey prices'.

2. Reduced rates of indirect taxation. An example was the reduction in VAT in July 1974 from 10 to 8 per cent (the average rate elsewhere in the EEC is about 15 per cent). In 1975-6 this reduction will have cost the Exchequer about £750 million.

3. Price restraint by nationalised industries financed by specific government grants. The 1974 Public Expenditure White Paper forecast in 'survey prices' that this subsidy would cost £250 million in 1975-6.

4. Price restraint by nationalised industries which results in reduced internal cash generation and, therefore, in the government financing an increased proportion of capital formation and stockbuilding by those industries.

5. Price restraint by companies in the private sector where the government finances the cost either directly or indirectly. A clear example was the tax relief for stock appreciation granted in the November 1974 Budget. If the profits of the corporate sector had been higher, such relief would not have been necessary. Indeed, the net amount of tax that the government is receiving from the activities in the UK of industrial and commercial companies is extremely low, not only because of the reliefs and grants but also because the profits on which the tax is assessed have fallen drastically as a proportion of GDP, in large degree a consequence of price restraint.

6. Price restraint by companies in the private sector where those companies bear the financial burden. Such price restraint reduces the prices the personal sector pays, in a similar manner to the other subsidies, but here the financial counterpart is an increase in the financial deficit of the corporate sector, rather than that of the public sector.

All of these subsidies increase the financial deficit of the public sector and industrial and commercial companies. Concealed inflation is thus another important reason for the secular trend in the financial deficit.

V. THE SOLUTION

An essential preliminary step is to stop concealing inflation. Inflation must be allowed to come out into the open. Once that has been done, the basic remedy is the one proposed by Professor Friedman,[1] which would cure not only the problem of inflationary expectations and wage claims but also 'crowding out', a principal subject of this *Paper*. Accelerating inflation causes a deterioration in the financial deficits of the public sector and industrial and commercial companies—which subsequently, *via* an increase in the money supply, causes inflation to accelerate further. But decelerating inflation will reverse the trend in the financial deficits. The gradual, prolonged recession advocated by Professor Friedman would eventually combat inflation and, therefore, would also cure 'crowding out'. The circle would, although by a rather unpleasant means, become virtuous rather than vicious.

But a difficulty must be overcome before this virtuous path can be taken; and it is one that has been another source of pressure for excessive monetary growth. It can be discussed under the heading of 'balance-sheet strength'.

Balance-sheet strength[2]

The fourth and final reason why the money supply has been expanded progressively faster is that there has been a steady weakening in corporate balance sheets, leading companies to become more and more cautious, and hence requiring ever-increasing stimuli to have the same effect on their expenditure.

Balance-sheet strength can be defined as follows: one balance sheet is stronger than another if it better enables a company to withstand a temporary fall in profits. On the liability side, a company can have increased its resources through internal cash generation; it can have raised equity capital by the issue of ordinary shares; it can have borrowed long term by issuing long-term debt (e.g. a 20-year

[1] *Op. cit.*, and *The Counter-Revolution in Monetary Theory*, First Wincott Memorial Lecture, published as Occasional Paper 33, IEA, 1970 (3rd Impression 1974).

[2] This factor also usefully illustrates the general principle that macro-economic analysis carried out without awareness of the underlying micro-economic conditions can be dangerously misleading, for it shows that policy recommendations made in ignorance of the position of individual firms can have quite unforeseen results. Further, it also shows that it can be far from satisfactory to analyse only flows—of income and of investment, for example—as both Keynesians and monetarists tend to do; data on *stocks* can be of vital significance. This is why in this section of our *Paper* we examine the significance of the stock of assets and liabilities.

debenture); and it can have borrowed short term, increasing its short-term debt (e.g. a bank advance). Accumulated reserves do not have to be serviced, i.e. no interest charges have to be paid. The cost of servicing equity capital can be varied at the option of the company; the dividend on ordinary shares can be reduced or even passed. The cost of servicing long-term fixed-interest debt is fixed; but at least it is a known liability at the time of the issue of such debt. The cost of servicing short-term debt is outside the control of the company because it varies according to the general market level of interest rates.

Accordingly, a company which has acquired funds by accumulating reserves has (other things equal) a stronger balance sheet than one which has raised the funds by an issue of equity (since reducing or passing a dividend makes the floating of an issue harder in the future). In turn, a company which has raised capital by an issue of equity has a stronger balance sheet than one which has issued long-term debt; and so on. Moreover, short-term borrowing for a fixed period has to be repaid or renewed at the end of it. This situation can be particularly dangerous if repayment coincides with a period of trading at a loss, thus adding still further to the hazards of relying on short-term finance.

Another important indication of the strength of a balance sheet is the amount of liquid assets relative to short-term debt: the higher that ratio the stronger the balance sheet. Ratios of the above categories can be calculated as a measure of balance-sheet strength; but before examining such ratios it is important to understand the difference between voluntary and involuntary changes in the ratios.

Trend to involuntary weakening

A company may deliberately weaken its balance sheet because such action can increase profits in favourable circumstances. An example of voluntary weakening of a balance sheet is 'gearing': a high proportion of debt to equity capital is highly profitable when business is good, but can be a disaster in unprofitable conditions. Another example of voluntary weakening of a balance sheet is a company deliberately borrowing short-term rather than long-term with the intention of replacing the short-term with long-term finance when rates of interest are lower.

It is *involuntary* weakening of balance sheets that makes companies cautious. A strong indication that the weakening of a balance sheet is involuntary is a combination of three factors:

(i) a fall in the proportion of reserves to other liabilities;
(ii) a fall in the proportion of long-term to short-term debt; and
(iii) a fall in the proportion of liquid assets to short-term debt.

Table I has shown that the proportion of reserves has been falling; internal cash generation has not kept pace with the cost of capital formation and stockbuilding. Table IV shows the other two ratios. The data are by no means fully satisfactory —the statistical basis has been changed several times and, as a result, series have had to be linked. Nevertheless, the declining trends of the ratios in the Table are so clear that the evidence must be accepted. We are prepared to conclude that the trend of involuntary weakening of balance sheets is proven.

Stronger incentives required for recovery

The combination of the secular trend of weakening balance sheets and inadequate internal cash generation makes companies progressively more reluctant to spend money on capital formation and stockbuilding, especially in a recession. In the past there have been many attempts by the UK authorities to persuade industry to increase its investment. There is a history of stronger and stronger incentives—investment allowances, grants, and free depreciation. There is also a history of complaints by politicians, and of exhortations to industry to heed the 'national good', the 'public interest', or whatever. Nevertheless, following a recession, the recovery in manufacturing investment in the UK has progressively tended to lag by a successively longer duration, and to be less strong. This reluctance by companies to spend has been a further reason why the authorities have had to apply ever-increasing stimuli to produce an economic recovery and, hence, have expanded the money supply by progressively larger amounts. Dr. J. A. Boeckh in *The Bank Credit Analyst*[1] has shown that monetary and credit stimuli per dollar recovery in US national income

[1] *The Bank Credit Analyst*, edited by Storey, Boeckh & Associates, Montreal, Canada, especially 'The Outlook 1976'.

TABLE IV

BALANCE-SHEET RATIOS, 1952-74

	Long-Term Debt to Short-Term Debt	*Liquid Assets to Short-Term Debt*
1952	2.2	3.5
1953	2.7	4.7
1954	2.8	4.5
1955	2.7	3.7
1956	2.6	2.9
1957	2.7	2.7
1958	3.0	3.0
1959	2.8	2.9
1960	2.1	2.1
1961	1.9	1.6
1962	2.1	1.4
1963	2.1	1.3
1964	1.8	1.1
1965	1.6	0.8
1966	1.7	0.7
1967	1.9	1.0
1968	2.0	1.3
1969	1.7	1.1
1970	1.6	1.0
1971	1.8	1.2
1972	1.8	1.5
1973	1.5	1.3
1974	1.0p	0.8p
Averages for business cycles:		
1952/7	2.6	3.7
1958/61	2.4	2.4
1962/6	1.8	1.1
1967/70	1.8	1.1
1971/4	1.5p	1.2p

p = provisional

Source: Business Monitor M3, Department of Industry.

have progressively increased in successive US cycles. The same appears to have happened in the UK. The fastest monetary growths in the UK have occurred in recessions and the early stages of economic recovery (despite then easy sales of gilt-edged stock). These factors all suggest the importance of the deteriorating trend in corporate balance sheets.

The weakening of balance sheets is due to inadequate corporate profits and 'crowding out'. Inadequate profits reduce the proportion of reserves to balance-sheet liabilities.

'Crowding out' reduces the proportion of long-term to short-term debt and the ratio of liquid assets to short-term debt.

It has been explained (p. 40) how the gradual prolonged recession advocated by Professor Friedman would solve 'crowding out'. Indeed, in recessions companies have always managed, on average, to rebuild their proportion of long-term to short-term debt and the ratio of their liquid assets to short-term debt. The remedy of controlled recession restores these two ratios. This is, unfortunately, not true for the proportion of reserves to balance-sheet liabilities, for profits cannot be rebuilt sufficiently in a recession. There must be some concern whether the balance sheets of British companies are now so weak that even a controlled recession would produce so many bankruptcies that a chain reaction leading to a financial crash would be inevitable.

If market forces prevailed . . .

In 1974, if market forces had been allowed to operate, a financial crash would have occurred. Such an outcome was prevented only by the extremely efficient rescue operation organised by the Bank of England. It should be noted that such a financial crash would have written off past debt—all too efficiently—and so would have restored balance sheets. This is an example of market forces finding their own solution to a problem that governments have so far failed to solve. Another all-*too*-efficient way of writing off debt is by hyper-inflation, which would reduce the cost of servicing previously incurred debt to negligible proportions. Neither of these solutions, of course, is desirable.

Although we have had doubts, we conclude that an orderly solution is possible. The restorations of the proportion of long-term to short-term debt and the ratio of liquid assets to short-term debt, which are certainly possible in a recession, should be a sufficient holding operation. Everything that can be done should be done to increase corporate profits in a recession (but higher prices may merely deepen the recession). For example, prices should not be controlled; industry should not be forced to employ unnecessary labour. Tax rebates are a way of increasing net profits. But the main restoration of corporate profits must wait for economic recovery. At that stage of the business cycle, companies simply must be allowed a larger share of the national income.

VI. SUMMARY AND CONCLUSIONS

The evidence that there must be a continually excessive expansion of the money supply before continuing inflation can occur is now overwhelming. That statement places us among those economists loosely termed monetarists. But it is not satisfactory to stop at the assertion that excessive monetary expansion is the cause of inflation. We must also ask why the money supply has expanded. Unless the reasons are understood, there is little hope of preventing excessive monetary expansion and, therefore, inflation in the future.

We have argued that successive UK governments since 1945 have permitted excessive monetary expansion for several separate reasons. There have been persistent errors of timing in the authorities' efforts to 'fine tune' the economy. The result has been the now notorious 'stop-go' cycle. When errors have been made on the side of over-expansion, excessive monetary growth and inflation have been caused directly. When the errors have been made on the side of contraction, the authorities have tended to over-react in the subsequent recession, so causing inflation to accelerate in due course. The errors have not balanced out because of the emphasis governments have placed on high employment over price stability. In future, governments must stop trying to tune the economy more finely than the state of economic knowledge really permits. Governments must also recognise that unemployment cannot permanently be reduced below a certain rate called the 'natural rate' by macro-economic policy; micro-measures such as improving the efficiency of labour markets can reduce the 'natural rate' and are therefore the only ways in which unemployment can be reduced permanently.

A. Technical errors

(i) *Fiscal policy*

There have been technical errors in economic management. Fiscal policy has been consistently eased by methods which produce a cumulative expansion of demand as the economy recovers. To avoid this result, fiscal policy should not be eased by tax reductions of a continuing nature. Tax reductions designed to stabilise a recession should be temporary.

(ii) *'Competition and Credit Control' defective*

The second technical error was that a defective system of monetary control ('Competition and Credit Control') was adopted in 1971. The system was reinforced in December 1973 (by the constraint on the growth of the interest-bearing eligible liabilities of the banks), but it is still not fully satisfactory.

(iii) *Problem of surplus liquidity*

The third technical problem is more deeply rooted. In a recession confidence inevitably is low. People are reluctant to spend, and savings accumulate in a highly liquid form. As economic activity starts to recover, confidence returns and the accumulation of liquid funds tends to be spent. This building up and subsequent sudden release of funds makes the timing and extent of recovery very hard to forecast and control. One method of absorbing surplus liquidity in a recession without delaying the economic recovery is for the authorities to issue variable coupon gilt-edged stock. In addition, very soon after confidence returns the authorities should take action, aggressive if need be, to neutralise most of the remaining surplus liquidity, for example by a large call for special deposits.

B. Fundamental difficulties

(iv) *Inflationary expectations*

On more fundamental difficulties, Professor Friedman in *Full Employment versus Inflation?* has described the important influence of inflationary expectations on wage claims. Wage earners attempt to negotiate wage increases in real terms. Since wage claims are made in money terms, these claims increase if the expected rate of inflation increases between one wage demand and the next—the 'Phillips Curve' shifts. The authorities then increase the money supply to prevent the consequent rise in unemployment.

(v) *'Crowding out'*

The next fundamental difficulty has been discussed at length under the heading 'crowding out'. If the demand for finance from the public sector and industrial and commercial companies exceeds the supply of savings from the personal sector, the public sector and industrial and commercial companies

will tend to borrow from the banks, their residual source of finance. The money supply will increase as a result. An extremely important factor influencing the demand for finance is inflation. The cost of financing accelerating inflation can be enormous. Inflation itself thus increases the pressure for monetary expansion, and hence, makes inflation worse in the future. This is an important factor in the dynamics of accelerating inflation. Further, attempts to conceal inflation are also very costly to finance; they exacerbate the problem.

(vi) *Balance-sheet weakness*

The final fundamental problem is the deteriorating trend of balance sheets, caused by inadequate corporate profits and 'crowding out'.

C. The remedy: 'controlled recession'

The remedy, which Professor Friedman has advocated to reduce inflationary expectations, is a controlled recession—shallow but possibly prolonged. Somewhat higher unemployment in the short term is an essential condition for preventing an uncontrollable rise in unemployment in the longer term, however much the former may be regretted. The remedy that Professor Friedman has advocated to solve the first problem would also solve the second—'crowding out': accelerating inflation aggravates 'crowding out'; decelerating inflation is the remedy.

In company balance sheets, the proportion of long-term to short-term debt and the ratio of liquid assets to short-term debt would on average improve in a controlled recession. Unfortunately, however, profits are reduced in a recession. There must be a certain amount of concern about whether the balance sheets of British companies are now so weak that many companies could not survive a prolonged recession of even shallow depth. In spite of the political difficulties, everything possible should be done to improve cash flow (but higher prices may merely deepen the recession). The main restoration of corporate profits must await the end of the recession.

The corporate sector must be allowed to raise prices as soon as market forces permit, i.e. when the economy starts to recover. Any attempt by the government to prevent this rise in prices will almost guarantee that inflation will once more

accelerate. Not only is high unemployment in the short term an essential condition for preventing an uncontrollable rise in unemployment in the longer term; a rise in prices in the short term is also absolutely essential to prevent inflation in the future. The reason why the UK's economic problems have become worse and worse is that the short-term palliatives have a perverse effect in the longer term. The solution is for the government, and the electorate, to take a longer-term view: the preoccupation with the short term has been a disaster.

APPENDIX

*Research into the Use of Financial Statistics: The Evolution of W. Greenwell & Co's Monetary Bulletins**

Reasons for the Research

The Radcliffe Committee report was published in 1959. As a result the Bank of England began to publish their *Quarterly Bulletin* in 1960 and the Central Statistical Office followed by publishing the monthly *Financial Statistics* in 1962. Both publications have been improved and extended gradually, the most important extension occurring in December 1963. *Financial Statistics*, as with most other statistics, were of limited use when they were first published. The trend of the data is often more important than its absolute quantities. Thus a series of data for the past was required. In September 1967 we considered that sufficient statistics were available to warrant a thorough investigation into their use, particularly for gilt-edged investors. Further, our own statistics, on the yield curve of British Government stocks, together with fluctuations around the curve, started in 1957.[1] Thus the time was also appropriate for research into the medium- and long-term aspects of the yield curve statistics.

Part I—Preliminary Economic Investigation

It soon became apparent that, before the full benefit could be obtained from the financial statistics, further investigation was required into the relationship between the yields on gilt-edged stocks and the economic cycle, especially as various published works were based mainly on annual economic data. Part I of the research became an investigation into the economic statistics for the 10 years 1957 to 1966, based on monthly and quarterly data. The objective, at that stage, was to establish more closely than previously the leads and lags between the cyclical movement in interest rates and the economic cycle, and to isolate, where possible, the periods of the cycle when external forces (exchange rates, gold and foreign exchange reserves, balance of payments and trade figures) were dominant in contrast to periods of dominant domestic forces (internal inflationary pressures, etc.). This part of the project was completed in March 1968. The conclusion was:

> 'Following devaluation, external forces are out of phase with domestic forces. Whilst this remains so, the results of this economic investigation are of relatively little use for forecasting movements in the gilt-edged market. In a year or so external and domestic forces ought to be back in phase, and the results may be of considerable use. In the meanwhile, the research has assisted greatly our own general understanding of the economic forces operating on rates of interest.'

This part of the research was described at the first Advanced Seminar on Investment Analysis and Management, organised by Giles Taylor Limited, at the University of Sussex in July 1968.

[1] These statistics are described in G. T. Pepper, 'Selection and Maintenance of a Gilt-edged Portfolio', *Journal of the Institute of Actuaries*, 90,63.

* Except where stated to the contrary, quotations are from various privately circulated papers by W. Greenwell & Co.

Part II—Flow of Funds Statistics

Flow of funds statistics are the data showing the quarterly transactions in securities mainly by the banking sector, the non-bank financial sector and the public sector. The statistics given in *Financial Statistics* are amplified elsewhere (e.g. Business Monitor Series M5). This part of the research compared the flow of funds data with changes in the shape of the yield curve. Our conclusions in November 1968 were:

> 'Although about 90 per cent of the general *level* of interest rates appears to be explained by economic factors, about 90 per cent of the *shape* of the yield curve is explained by the flow of funds. Further, about 60 per cent of the deals in the gilt-edged market by particular groups of institutions are carried out not for investment reasons, but for internal financial reasons. For example, the Clearing Banks often invest in bonds because their deposits are increasing but their advances are static, rather than because they consider gilt-edged prices are likely to rise. On the majority of occasions the yield curve alters its shape because a group, or groups, of investors (including the authorities) are transacting large deals for internal financial reasons. It is only on a minority of occasions that expectations of general moves in the market dominate the shape of the yield curve. These occasions usually occur when market turnover is low. Expectations may be an important factor in determining the general level of the market, but the size of transactions undertaken due to expectations compared with those undertaken for other reasons, appears to be small as far as causes of changes in the shape of the yield curve are concerned.
>
> 'The above conclusions are very promising for active gilt-edged investors. If the majority of transactions were for investment reasons, one enters the realm of expectations of expectations, and expectations of expectations of expectations, and so on. Some investors have long been puzzled about who makes the losses corresponding to their profits. The answer probably is those investors dealing for internal financial reasons.'

The next field of our research was to investigate if it were possible to forecast 'internal financial reasons'. Unfortunately, most of the statistics are published too late. The quarterly flow of funds data are two to three months out of date when first published. However, we have found them of considerable internal use, best illustrated by a comparison with ordinary share analysis. If an analyst is about to visit an industrial company, he does considerable preparatory work. He researches into both the industry and the company. He is then able to obtain more information and a better perspective from his visit, because he knows what to look for and the right questions to ask. The flow of funds data and the associated statistics on internal financing are in some degree the equivalent preparatory work for the gilt-edged analyst.

Part III—Leading Financial Indicators

The next stage was to graph all possible relevant financial statistics to investigate whether any of them, either singularly or in combination, tended to lead gilt-edged prices. The real world is complicated and we found it very helpful to superimpose on the graphs the relevant remarks

from the commentaries of the Bank of England *Quarterly Bulletins*. It became apparent that different indicators would be needed for different phases of the gilt-edged market. For example, an indicator that a bull market would continue would probably be different from an indicator that a bear market would continue. Further, different indicators might be needed at the turning points of the market and they might alter according to whether domestic or external forces were dominating the market. Assuming that the phase of the market could be defined, the type of favourable result obtained was that an indicator A confirmed by another indicator B, provided that a third indicator C was not suggesting the opposite, might be reasonably efficient at forecasting gilt-edged prices. However, the real world changes constantly and the indicators also alter. The eventual conclusion was that indicators were likely to work only on comparatively rare occasions and a thorough understanding and 'feel' of the whole financial system was essential at other times. The main benefit of this part of the research was what we learnt about the financial system and also that some statistics we had thought important had never led gilt-edged prices (e.g. forward sterling). The latter was useful information as the real world is too complicated without adding irrelevancies.

Part IV—Money Supply Research, phase 1: The Government Broker's Tactics

Our researches into the money supply were a continuation of the main project; they started in earnest in August 1968, partially inspired by meeting Beryl Sprinkel of Harris Trust & Savings Bank of Chicago, one of the most vocal of US monetarists. We were particularly impressed by his record of accurate forecasts, which he had documented. As a result we had had several months' progress by the time the IMF delegation arrived in the UK on 15 October, 1968, after which the money supply became topical. Our first money supply note was circulated three days later and the second on 5 November, 1968. These notes were the basis of a lecture at the Annual Investment Seminar organised by Investment & Property Studies and the *Investors Chronicle* in January 1969. Subsequently, the lecture was written up as a formal paper presented for discussion at the Institute of Actuaries in October 1969.[1]

We realised that monetarism was becoming more influential in the US and that the Federal Reserve would probably start placing more emphasis on the behaviour of the monetary aggregates than on interest rates. The possibility of similar developments in the UK was very important for gilt-edged investors. But we were also anxious that the Bank of England should not withdraw support for the gilt-edged market (it was in the event withdrawn in May 1971) unless such withdrawal would significantly contribute to a slackening of inflationary pressures.

In the US only about 6 per cent of GNP was exported—the US can be described as a closed economy. In contrast about 23 per cent of GNP in the UK was exported—the UK can be described as an open economy. Because of this difference, and because the UK is subject to 'stop-go' fiscal policy, in 1969 we doubted whether the relationship between the

[1] G. T. Pepper, 'The Money Supply, Economic Management and the Gilt-edged Market', *Journal of the Institute of Actuaries*, 96, 1.

growth of the money supply and the business cycle observable in the US applied to the UK. Our conclusion then from the statistical evidence of the relationship between money supply and economic activity in the UK supported our doubts as follows:

'1875 to 1914: There is some evidence that changes in the money supply and economic activity oscillate together. There is no evidence that the money supply cycle preceded the business cycle.
1919 onwards: There appears to be little connection.'

We argued that a possible reason for the lack of positive results before 1930 was the use of annual rather than monthly data. We thought that after 1930 the variation was too wide to be explained by the lack of monthly data. However, we had reported in October 1968: 'We are at present reworking the investigations since 1921 on a monthly basis' and, in 1969, 'we have investigated the last ten years on a monthly basis and can find no evidence that changes in the money supply preceded the business cycle'. We waited two years hoping that someone else, probably in the academic world, would process the full data and publish the results.

Part V—Money Supply Research, phase 2: The Economic Cycle

Two events spurred us on. First, Sprinkel's most recent forecast proved to be correct. A live forecast proved correct is much more impressive than historical evidence. Secondly, we had copied Sprinkel and documented a monetarist forecast for the UK. Our oral reply to the discussion at the Institute of Actuaries on 27 October, 1969 contained the following comment:

'. . . a Friedman follower in the United Kingdom . . . would forecast a very bad slump indeed about the spring and summer of next year. However, if that person turned to an independent measure of the velocity of circulation, he would see that the velocity of circulation in the United Kingdom had expanded at a truly dramatic rate during the last four or five months, and that more or less illustrated that the City of London was too efficient for the money supply argument to work.'

The rapid shake-out in the labour markets which culminated in a million unemployed during the winter of 1971-72 started in the summer of 1970 and the equity market fell substantially. The monetarist forecast was right; the neo-Keynesian forecast was wrong.

The results of our subsequent statistical analysis were published first in Part I of 'The Historical Importance of Money in the UK'[1] and in the May 1972 edition of *The Banker*, and subsequently in March 1973 in G. T. Pepper and R. L. Thomas, 'Cyclical Changes in the Level of the Equity and Gilt-edged Markets', *Journal of the Institute of Actuaries*, 99, 195.

The reason why the earlier analysis was wrong was that the earlier paper used the net deposits of the London Clearing Banks as a proxy for the deposits of the banking sector, and for broad money (M3). Before 1957 this was a satisfactory proxy, but after that date, which includes the monthly analysis of the earlier paper, the proxy broke down because of the rapid growth of the merchant and other non-clearing banks. Instead of net deposits, our subsequent researches used the current accounts of the London Clearing Banks as a proxy for narrow money (M1). The second

[1] A paper by W. Greenwell & Co. circulated privately.

reason for the different results was that in recent years the relationship between price inflation and unemployment in the UK had altered. If inflation persists at a high level in a recession, a higher rate of monetary growth is required to stimulate real economic activity than if inflation has subsided. This problem was avoided by adjusting the change in current accounts for the change in the retail price index to produce a series for the money supply in real terms. The conclusions of this analysis were:

'There is considerable empirical evidence in the UK that the money supply alters prior to a change in the level of economic activity, but the lag is long and variable. In general, the pattern appears to be very similar to that in the US.'

Our assessment of the March 1972 Budget was the second occasion on which our monetarist forecast for the UK proved correct and the neo-Keynesian (the Treasury's in the *Financial Statement*) forecast proved wrong. It should be noted that, like the earlier example, the economy was at a turning point. In general correct forecasts of turning points are much more difficult than correct forecasts of no change in the upswing or downswing of the economic cycle.

Part VI—Money Supply Research, phase 3: The Level of Capital Markets

Although we had been necessarily side-tracked into economic research, our objective throughout our money supply researches was to identify forces influencing the level of capital markets. The relationship between the money supply and economic activity was an essential preliminary but, as far as we are concerned, the relationship between the money supply and the level of capital markets is the really important subject. This research is described in Part II of the 'Historical Importance of Money in the UK' and in 'Cyclical Changes in the Level of Equity and Gilt-edged Markets'. The summary and conclusions of the latter were:

'The paper reviews the evidence of the relationship between the money supply and capital markets in the UK. However, it must be stressed that the patterns of the past may not recur in the future for two important reasons. The first is that in the past the Bank of England was not attempting to control the money supply. The second reason is that as knowledge of the relationship between the money supply and capital markets improves and becomes more widespread, the monetary forces are likely to be anticipated. For example, in the USA the publication in 1964 of 'Money and Stock Prices' by Beryl Sprinkel was probably responsible for reducing the lead of the money supply over common stock prices reported in Sprinkel's latest book in 1971.

Gild-edged market

'The relationship between the money supply and gilt-edged prices is complicated because the medium-term forces are in the opposite direction to the natural short-term forces. Further, if the authorities are following a money supply policy, action by the Bank of England will offset the natural short-term forces.

'The short-term relationship between the money supply and the gilt-edged prices is coincidental: there is neither lead nor lag. If the rate of growth of the money supply is increasing the *natural* forces will tend

to increase gilt-edged prices. Conversely, when the rate of growth of the money supply is decreasing the natural forces will tend to reduce gilt-edged prices. It must be emphasised that this relationship is coincidental; the money supply does not lead gilt-edged prices. Further, the money supply is only a powerful background force. There is not a close relationship between *monthly* changes in gilt-edged prices and those of the money supply because the gilt-edged market reacts to many other factors and news announcements. For example, expansionary monetary forces will not prevent gilt-edged prices from falling after the announcement of bad figures for international trade, but the fall will be less than might otherwise be expected. In the alternative circumstances of an announcement of favourable news, the rise in gilt-edged prices will be more than might be expected. The most important factor influencing very short-term fluctuations in gilt-edged prices is the stream of news announcements; the monetary forces simply bias the market's reaction. A knowledge of the current behaviour of the monetary aggregates assists in an understanding of the current behaviour of gilt-edged prices, which is of considerable value. However, the use of monetary analysis to forecast future gilt-edged prices depends on being able to forecast the future level of the monetary aggregates. In many circumstances it may be easier to forecast rates of interest directly than the behaviour of the monetary aggregates, and the use of monetary analysis will be strictly limited. On rare occasions a forecast of the money supply may be held with conviction and monetary analysis will be of more use.

'The medium-term relationship between the money supply and gilt-edged prices is the reverse of the natural short-term relationship. As the momentum of economic activity responds to the pressure indicated by the monetary aggregates, new forces start to operate on gilt-edged prices. An abnormally large increase in the money supply (which tends to increase gilt-edged prices in the short term) will in the medium term produce conditions under which gilt-edged prices will tend to fall. Conversely, a reduction in the money supply (which tends to reduce gilt-edged prices in the short term) will in the medium term produce conditions under which gilt-edged prices will tend to rise. The transition from the short term to the medium term depends on the response of economic activity.

'The US experience since 1970 illustrates how the short-term situation alters when a Central Bank is following a money supply policy. Many commentators fail to understand the extent to which short-term fluctuations of the money supply are outside the control of the Central Bank. The correct interpretation is usually to assume that the money supply is outside the Central Bank's control over the short term and that the Bank is reacting to it being off target. If the money supply is increasing above target, the mechanism by which the Bank attempts to reduce the monetary growth is by raising interest rates. Conversely, if the money supply is below target the Bank will induce a reduction in interest rates. The Bank of England at present appears to consider that the way in which the money supply should be influenced is through the price mechanism of interest rates influencing several of the components of the money supply, rather than by attempting to purchase or

sell specific quantities of gilt-edged stock. Recapitulating, if the money supply is growing too fast the Central Bank operates to increase interest rates. Conversely, if the money supply is growing too slowly the Central Bank operates to reduce interest rates. Monitoring the monetary aggregates is very important for interpreting and forecasting the authorities' actions in both the money and gilt-edged markets. There is a conflict between the natural short-term monetary forces operating on gilt-edged prices and the actions of the authorities when a Central Bank is operating a money supply policy. The authorities are usually more powerful than the natural forces in the short-dated gilt-edged and money markets. In the long-dated gilt-edged market the outcome is less certain and depends on the degree to which the Central Bank is prepared to be aggressive.

Equity market

'The historical evidence is that there is also a strong relationship between monetary forces and ordinary share prices. In general, the empirical evidence supports the hypothesis that ordinary share prices tend to rise when the money supply in real terms is growing faster than necessary to finance the current growth of economic activity. Conversely, ordinary share prices tend to fall when the rate of growth of the money supply in real terms is less than that required to finance the current growth of economic activity.

'Unlike the gilt-edged market, there is no conflict between short-term and medium-term forces. Further, at times it may be possible to use the money supply as a leading indicator for the equity market. Empirical evidence shows that in normal circumstances significant changes in the rate of growth of the money supply and turning-points of the equity index have followed the turning-points of the rate of growth of the money supply. This is because in the past the rate of change in the money supply has itself had a marked cyclical pattern; there has been a significant fall or rise as the case may be, following a clear turning-point. The historical evidence in both the UK and the US is that in the past the money supply could, subject to the variability of the time-lag, have been used as a leading indicator for the equity market.

'However, the authors wish to caution against the mechanical use of the money supply as an automatic indicator. The world is changing fast. As discussed earlier, the Bank of England is at present operating a money supply policy. Further, sterling is floating instead of on a fixed parity, which reduces the powerful influence on the money supply of variations in the balance of payments. A thorough understanding of the system as a whole and the underlying forces is essential. Subject to this, the use of monetary analysis is probably to warn that the equity market is entering a period when the background conditions are similar to those when a turning-point has occurred in the past. The analysis can probably also be used for identifying periods when the background conditions are similar to those in the past when a bull, or bear, market has continued. The authors are very sceptical about attempts either to quantify the relationship between the money supply and the equity market or to identify the turning-points precisely.

General

'The main theme of the paper is fundamental for investment. Many people, when assessing the prospects for the equity market as a whole, emphasise the expected growth of the economy, profits and dividends, etc. When assessing the outlook for the gilt-edged market they emphasise the expected rate of inflation, i.e. the expected real rate of interest. In the authors' opinion this is the wrong emphasis when forecasting cyclical movements in the level of a market. The paper establishes that a very important historical explanation of cyclical movements in the equity and gilt-edged markets is the balance between the supply and demand for investible funds, which can be measured in a rough and ready way by monitoring changes in the rate of growth of the money supply. Accordingly, forecasting methods should be developed that emphasise the anticipated supply and demand for investible funds, an assessment of which should be made both directly and indirectly by monitoring the money supply.'

Monetary Bulletins

The Bank of England's monthly banking statistical release giving the money supply data started in March 1972. Our research had indicated the importance of the behaviour of the money supply—up-to-date data had become available—so our *Monetary Bulletins* started in June 1972.

G.T.P.
R.L.T.

QUESTIONS FOR DISCUSSION

1. What were the stated objectives of the Bank of England's 'Competition and Credit Control' document? To what extent did it achieve these objectives, and why?

2. Why do you think the policy recommendations of the 'New Cambridge School' and of many 'Monetarists' coincide so closely?

3. Is the control of the rate of growth of the money supply necessary and sufficient to control inflation?

4. What are the implications of recent developments in Phillips Curve analysis for the role of an incomes policy as a means of controlling inflation?

5. Is it true that the UK authorities have lost control of the money supply in recent years? If so, why?

6. If the government thinks that unemployment at the 'natural rate' is too high, what should it do?

7. Why is there often a close connection between fiscal and monetary policy actions? What do you consider the significance of this to be for both economic analysis and economic management?

8. What is 'gearing'? What factors, both micro-economic and macro-economic, would you take into account when advising a company on whether to 'gear up'?

9. In what sense is the money supply the 'cause' of inflation and in what sense only the mechanism or instrument behind which there are ultimate causes?

10. Why has government allowed itself to succumb to pressures to stimulate inflation? Can you suggest methods of depriving government of the ability to yield to these pressures?

SUGGESTED FURTHER READING

The three most important items of further reading are:

Christ, Carl F., 'A Simple Macro-economic Model with a Government Budget Restraint', *Journal of Political Economy*, January/February, 1968.

Blinder, Alan, and Solow, R. M., 'Analytical Foundations of Fiscal Policy', in *Economics of Public Finance*, The Brookings Institution, Washington DC, 1974.

Bain, A. D., 'Surveys in Applied Economics: Flow of Funds Analysis', *Economic Journal*, December 1973.

Christ pioneered the economic analysis of the relationship between fiscal and monetary policy. This is developed (along with a very full statement of the current state of macro-economics) in Blinder and Solow's outstanding and comprehensive paper. A. D. Bain's paper is a very clear guide to the development and current state of flow-of-funds analysis.

The following five items are useful supplementary reading:

Bank of England, *An Introduction to Flow of Funds Accounting: 1952-70*, Bank of England, London, 1972.

Barrett, C. R., and Walters, A. A., 'The Stability of Keynesian and Monetary Multipliers', *Review of Economics and Statistics*, November 1966.

Kindleberger, C. P., *The World in Depression*, Allen Lane The Penguin Press, London, 1973, especially Chapters 1-3 and 5-7.

Morgan, E. Victor, *Monetary Policy for Stable Growth*, Hobart Paper 27, Institute of Economic Affairs, 1964 (3rd Edition, 1969).

Cornwall, John, *Growth and Stability in a Mature Economy*, Martin Robertson, London, 1974, especially Chapter 12.

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Estates Gazette

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Liverpool Daily Post