Government debt management and monetary policy in Britain since 1919

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Abstract

The enormous increase in the United Kingdom's national debt during the two world wars of the 20th century meant that government debt management, which had hitherto been regarded as a matter of 'budgetary convenience', acquired great macroeconomic significance. The paper examines and compares four episodes in the management of the national debt since 1919 and in each case explores the relationship between debt management and monetary policy. In some episodes, debt management and monetary policy were mutually supportive, but in 1932–38, they were not. In the past few years the macroeconomic significance of government debt management has increased again, and the paper discusses the current policy of quantitative easing from the perspective of the earlier episodes.

Keywords: Government debt management, monetary policy, central banking, United Kingdom

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1. Introduction

This paper discusses several episodes in British government debt management since 1919 in order to cast some light on the relationship between government debt management and monetary policy. The end of the First World War brought with it a change in the significance of debt management. The United Kingdom had a vastly enlarged national debt and, as Hicks (1963, page 180) explains, 'debt management became a matter of national balance, not merely of budgetary convenience'. And in 1959, 14 years after the end of the Second World War, the Radcliffe committee was in no doubt about the macroeconomic importance of debt management:

> *Thirdly, monetary policy must take its influence upon the structure of interest rates as its proper method of affecting financial conditions and eventually, through them, the level of demand. There is no doubt that it has, and can, exert this influence through the management of the National Debt which, if burdensome to the financial authorities in other respects, affords in this respect an instrument of singular potency. In our view debt management has become the fundamental domestic task of the central bank. It is not open to the monetary authorities to be neutral in their handling of this task. They must have and must consciously exercise a positive policy about interest rates, long as well as short, and about the relationship between them.*[2]

The use of government debt management as a weapon of macroeconomic policy was also analysed in the United States after the Second World War (see, for example, Wallich 1946 and Tobin 1963). And Operation Twist, undertaken in 1961, was an attempt to reshape the yield curve by altering the maturity of outstanding government debt.[3]

In the UK, things changed a lot in the three decades following the Radcliffe report. In 1995, the Treasury and the Bank of England conducted a review of debt management policy. The report (page 8) commented that 'debt management is not a major tool of monetary policy; nor is monetary policy the main objective of debt management, although the Government and the Bank of England take monetary policy considerations into account to ensure consistency, particularly when formulating the Government's strategic issuance policy'. In 1998, the Bank of England held a conference on 'Government debt structure and monetary conditions'. It did so in response to a question from the then-Governor about whether decisions about monetary policy should be influenced by the government's debt management policy, responsibility for which had recently been transferred from the Bank of England to the newly-created Debt Management Office, which was and is constitutionally part of HM Treasury. The conference concluded that government debt management had only a minor relationship with monetary policy:

'Taking in turn each of the three channels through which government debt structure might influence monetary conditions:

- 'Effects of the quantity of debt:…new issuing techniques and new capital markets since the 1980s have all helped to reduce concerns about how the quantity of debt impinges on monetary control, to the point where the two issues could now be seen as almost distinct.
- 'Effects of the composition of debt: Changes in the composition of debt might affect expected asset returns and the incentives facing the central bank. But the

[2] Committee on the Working of the Monetary System (1959, paragraph 982).

[3] For a recent review of Operation Twist, see Alon and Swanson (2011).

consensus at the conference appeared to be that the size of these effects was small, at least in response to marginal shifts in government portfolios.

- 'Effects from the ownership of debt: For the United Kingdom, the available evidence was consistent with the view that there was little impact of debt sales to banks on either money supply growth or bank lending.'[4]

In other words, by the 1990s, conventional opinion had reverted to the pre-1918 view that debt management was 'a matter of budgetary convenience'.

Much more recently, interest in the macroeconomic aspects of government debt management has been revived in the wake of the banking crisis, as debt issuance by governments has increased and as private credit markets have contracted. Turner (2011) provides an excellent review of the issues.

This paper discusses four episodes in British monetary history between 1919 and the 1990s in which there clearly was a close relationship between government debt management and monetary policy. The episodes are:

(i) The inter-war period.

(ii) The immediate aftermath of the Second World War.

(iii) The period after the 'reactivation of monetary policy' in 1951.

(iv) The period of 'overfunding' of the government deficit in the 1980s.

In addition, the paper measures the main debt management actions in these episodes and compares them with the recent quantitative easing conducted by the Bank of England.

The vast deficits incurred during the two world wars of the 20th century threatened the sustainability of government debt. Had the debt become unsustainable, which it did not, there would of course have been very serious consequences for monetary policy. How a loss of confidence in government debt was avoided is a very interesting question, but it is beyond the scope of this paper.

2. The inter-war period

Sterling-denominated government debt amounted to about 120% of GDP at the end of the First World War.[5] Much of it was short-term. Howson (1975, page 161) estimates that private sector holdings of the national debt were £6.6 billion at the end of March 1919, of which £865 million was in the form of Treasury bills and a further £937 million in the form of bonds with less than 5 years to maturity (see Table 1). Nearly £2 billion was in the form of bonds with over 25 years to maturity; almost all of this was represented by the 5% War Loan issued during the war, which could be called by the government from 1929 onwards and had a final maturity date in 1947.

The overriding objective of monetary policy from 1919 to 1931 was, first, to restore the gold standard at the pre-war parity (which happened in 1925), and then to maintain it. After 1931, when the gold standard was abandoned, the new objective of monetary policy was to secure

[4] See Chrystal (1998, page 9).

[5] In 1919, private sector holdings of national debt were £6.6 billion (Howson 1975, appendix 2, table 1) and GDP was £5.5 billion (www.measuringworth.com).

a recovery in prices so as to stimulate expansion of business and employment.[6] Short and long-term interest rates from 1919–38 are shown in Figure 1.

Restoring the gold standard at the pre-war parity after the First World War was a tall order, in the light of the inflation that had taken place during the war. In order to secure the necessary deflation, interest rates were kept at a higher level than purely domestic considerations would have dictated, and unemployment was generally high. The country made a bad start in 1919–20, when there was an inflationary boom supported by rapid growth in money and credit. Bank deposits expanded at an average rate of 12% a year in 1919 and 1920, and loans, advances and other accounts at an average rate of 35.6% a year (see Table 2). The growth was facilitated by the government's willingness to take ways and means advances from the Bank of England when it could not sell enough Treasury bills at it desired yields to meet its needs, and by the commercial banks' large holdings of liquid assets (45.6% of total assets at the end of 1918, of which 19.4% consisted of Treasury bills – see Table 2), which they could run off at their discretion in order to finance commercial lending. The boom was ended by a sharp rise in interest rates in 1920, but the episode made it clear that debt management policy was intimately connected with monetary policy, in the sense that a large amount of liquid government debt could support an inflationary boom.

In the circumstances, it was understandable that the Treasury and the Bank of England regarded it as important to reduce the amount of short-term debt outstanding. Although the boom and bust of 1919–20 had been contained, it had caused some economic instability, and containing it had required an increase in Bank Rate to 7%, which implied a large increase in the cost to the Treasury of servicing its heavy short-term debts.

The policy of 'funding' – ie extending the average maturity of the outstanding debt - was pursued throughout the 1920s with some success, so that by 31 March 1930 the amount of Treasury bills and under-five-year bonds held by the private sector was less than half of what it had been eleven years earlier, even though the total debt had increased (see Table 1).

The UK abandoned the gold standard in September 1931, under pressure from both depressed economic conditions and the drain of liquidity from the UK which followed the banking crises in Austria, Hungary and Germany earlier that year. At that point, the earlier objectives of monetary policy became obsolete, and with a floating exchange rate it became possible for the UK to pursue policies directed towards domestic objectives. With unemployment very high[7] and nominal GNP having fallen by 5.1% between 1930 and 1931, it was abundantly clear that monetary policy needed to be eased, and so it was, as a policy of 'cheap money' was adopted. The Exchange Equalisation Account, introduced in June 1932, was (and still is) a device which enabled the Treasury (rather than the Bank of England) to buy and sell gold and foreign exchange so as to manage fluctuations in the exchange rate. In practice, the EEA was used in 1932–33 mainly to buy gold both to finance debt repayments and to prevent the pound from appreciating too much. And, also in June 1932, Bank Rate was reduced to 2%.

The main event in debt management policy after the abandonment of gold was the War Loan conversion of 1932. Although the issue had been callable since 1929, the Treasury had not previously seen any attractive opportunities for conversion.[8] Nevertheless, as interest rates

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[6] See the statement by the Chancellor of the Exchequer, Neville Chamberlain, to the House of Commons on the Finance Bill, 9 May 1932, http://hansard.millbanksystems.com/commons/1932/may/09/finance-bill#S5CV0265P0_19320509_HOC_269.

[7] Feinstein's data (1972), used by Benjamin and Kochin (1979) in their attempt to characterise UK unemployment in the interwar period as voluntary, and quoted by Ormerod and Worswick (1982), puts unemployment in 1932 at 22.1%. Matthews, Feinstein and Odling-Smee (1982, page 81) estimate that the average unemployment rate in 1920–38 was 10.6%.

[8] See Howson (1975, pages 71–74).

fell, the probability of conversion as seen by the market increased and the expected maturity of the issue shortened. The reduction in short-term interest rates to 2% opened up the possibility of a conversion of the entirety of War Loan (the total of which was the equivalent of 49% of 1932's GNP) to a bond bearing a much lower coupon, and War Loan was converted in 1932 to a new issue, 3½% War Loan, redeemable in 1952 or after (ie it had no final redemption date; needless to say, it is still outstanding at the time of writing).[9] The War Loan conversion saved about £30 million a year (0.7% of GDP) in debt servicing costs; it also substantially lengthened the average maturity of the outstanding debt. Other debt management actions reinforced the maturity lengthening. In Table 1, the War Loan conversion appears as a large switch between the '15–25 years' column (since the last possible redemption date of 5% War Loan was in 1947) and the 'repayable only by government option' column. In addition, from 1932 to 1937, the total of Treasury bills and under-5-year bonds also fell, even though the EEA's acquisition of gold and foreign exchange was routinely financed by new Treasury bill issues.

The saving in debt servicing costs was obviously highly desirable, but the lengthening of the maturity of the outstanding debt was not consistent with the objective of promoting economic recovery. Commercial banks' loans, advances and other accounts fell by 17.8% from the end of 1931 to the end of 1933 (see Table 2); the monthly London clearing bank data show a fall in advances from £912 million in August 1931, just before the gold standard was abandoned, to a low point of £738 million in January 1934, a fall of 19.1%. From 1934 onwards commercial banks' loans (all banks) recovered, but they did not get back to their end-1930 levels until 1939. According to Capie and Webber (1985), UK commercial banks' deposits (all banks) had fallen by 5.8% during 1931; they increased by 11.4% during 1932, but changed little in 1933 and 1934.[10] In the magisterial assessment of Nevin (1955, page 119), 'Movements in the money supply during the period 1933–39 are not *a priori* consistent with the statements of official spokesmen that the authorities were pursuing a policy of cheap money'. What was going on?

In some degree, the weakness of bank credit after the abandonment of the gold standard can no doubt be explained by low demand for credit in depressed business conditions. But the supply of credit was also inhibited by the following factors:

(a) Shortage of liquid assets

The effects of official debt management policy in restricting the supply of Treasury bills was compounded by the contraction of the supply of commercial bills, which was the result of declining prices and declining volumes of trade. The banks' holdings of Treasury and commercial bills fell from £450 million at the end of 1932 to £300 million at the end of 1936 (see Table 2). Bearing in mind that the London clearing banks maintained a minimum ratio of cash and liquid assets to deposits, the shortage of bills will have constrained balance sheet growth and commercial lending.[11]

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[9] The conversion was announced on 30 June 1932 and holders had until 30 September to choose to be repaid in cash. If they did not respond, they were deemed to have opted to convert into the new 3½% issue. See Sayers (1976, pages 430–440).

[10] See Capie and Webber (1985, table III.4). The quoted percentage changes are from fourth-quarter average to fourth-quarter average. Capie and Webber provide data for bank liabilities but not assets.

[11] Nevin and Davis (1970, pages 142–146) discuss the origins of the minimum liquid asset ratio, and how far it represented a choice of the London clearing banks and how far an imposition by the Bank of England.

(b) The availability of large amounts of longer-term government securities at relatively attractive yields

Commercial banks, like other holders of War Loan, were subjected to heavy 'moral suasion' to accept the conversion offer of 1932.[12] And the yields were relatively attractive: for example, in the fourth quarter of 1932, 2½% Consols (an undated issue) yielded 3.35% on average, whereas Treasury bills yielded just 0.86%. Banks' holdings of gilts increased by £226 million (53%) in 1932, and continued to increase in the following years (Table 2). Between 1932 and 1938, banks invested three quarters of the increase in their deposits in gilts.

(c) The oligopoly in banking

The London clearing banks agreed among themselves in the 1930s that the normal minimum rate for advances would be 5% during the cheap money period, regardless of the Bank Rate. Nevin and Davis (1970, page 175) comment that:

> *Throughout the decade [the 1930s] the normal minimum was kept at 5 per cent, although it appears that the fall in market rates produced a decline in bank advance rates from between 5 and 6 per cent in 1931 to between 4½ and 5½ per cent in the mid-1930s. The rate charged would vary, of course, according to the credit and standing of the customer and the nature of the loan and the collateral offered.*[13]

Bank rate declined from 3.97% on average in 1931 to 2% from mid-1932 onwards. It is impossible to believe that lower lending rates would not have done something to stimulate the demand to borrow and thus the economic recovery.

Could a different debt management policy have made a difference? The amounts of debt outstanding, and in particular the scale of the War Loan conversion, were so enormous relative to GNP that debt management policy could not fail to have large macroeconomic effects. A policy of borrowing more at the short end, eg through Treasury bills, would have meant that the banks were not constrained from lending by a shortage of liquid assets. Moreover, it would have meant that the supply of longer term government debt was less ample, and the yields somewhat less attractive to the banks. In those circumstances, it might have been harder for the London clearing banks to maintain their cartel, and lending rates might have been lower.

It seems clear that debt management policy and monetary policy pursued consistent objectives from 1919 to 1931, but that from 1931 onwards debt management policy was not well-adapted to the changed objectives of monetary policy.[14] Nevertheless, it has also to be said that the long average maturity of the national debt probably made the management of the government's finances in the Second World War much easier.[15]

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[12] See Sayers (1976, pages 441–445).

[13] Nevin and Davis (1970, page 175) also report that 'According to the Chairman of the Midland Bank in 1934, a reduction of 1 per cent in the rate charged on advances by that bank would have entailed either a one-third cut in salaries or an almost complete suspension of dividend payments.' See also Collins (1988, page 254).

[14] This is not an original conclusion, having been reached by Nevin (1955, especially pages 149–154) and Howson (1975).

[15] See Nevin (1955, page 151).

3. The immediate aftermath of the Second World War

At the end of the Second World War, as at the end of the First World War, the UK had a vastly enlarged national debt, much of it short term. The ratio of private sector holdings of sterling government debt to GDP was about 170%. In the first couple of years after the war, the government's objective was not to lengthen the maturity of the debt, but to entrench a pattern of low yields. This objective reflected the widespread expectation of a return to depressed economic conditions after the war, and the perceived success of the 'cheap money' policy in stimulating economic recovery in the 1930s. The Treasury commissioned a National Debt Enquiry in early 1945, which recommended that the government should establish a term structure of yields on government securities, and allow the maturity structure of the government's debt to be determined by investors.[16] The level of interest rates should be:

> *fixed from time to time in the light of experience and should pay attention primarily to (a) the effects of Government policy on the market for borrowing by private institutions, companies and individuals and on the problem of controlling and maintaining the desired rate of investment at home and abroad, (b) to social considerations in the wider sense, and (c) perhaps especially to the burden of interest charges on the Exchequer and other State funds and on Local Authorities.*[17]

In effect, the proposal was to continue the wartime method of financing the government. However, whereas long-term yields had been pegged at 3% during the war, the Labour government elected in July 1945 aimed to reduce them to 2½% – 'ultra-cheap money'. The principal proponent of the policy was the Chancellor of the Exchequer, Dr Hugh Dalton.

The attempt to get long-term yields down to 2½% was made by refusing to offer government securities at yields higher than those which the government deemed acceptable.[18] Issues by non-government borrowers were subject to official control. The result of the policy was an increase in short-term financing of the government, as investors concluded that 2½% was not an adequate long-term yield against the background of extensive pent-up demand and ample liquidity, both in the banking system and elsewhere. The attempt resulted in the authorities becoming net buyers of gilts (including redemptions), as Table 3 shows. The 2½% objective was abandoned in 1947, when the Treasury's instinctive preference for 'sound financing' overcame its loyalty to the ultra-cheap money policy, though net purchases of gilts continued until 1948. Table 4 shows how yields rose during 1947 to levels well above 2½% at the long end, and Figure 3 shows interest rates and long-term gilt yields from 1945–61.

The effect of these operations on the maturity structure of government debt is shown in Table 5. The total of Treasury bills in the market increased by £1,026 billion in the three years after 31 March 1945; however there was a fall of £568 million in Treasury Deposit Receipts.[19] It is true that the amount of over-15-year gilts outstanding increased by £2,936 million in the six

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[16] See Fforde (1992) and Howson (1993, pages 45–54). At this time, the Treasury, not the Bank of England, was in effective control of both short-term interest rates (determined by the rate on Treasury bills) and debt management policy. The Bank of England was not invited to participate in the National Debt Enquiry, whose members did include the famous economists Lord Keynes, James Meade and Lionel Robbins.

[17] As quoted by Howson (1993, page 52).

[18] Fforde (1992, pages 330–359) and Howson (1993, chapter 3) provide detailed accounts of the episode.

[19] Treasury Deposit Receipts, introduced in 1940, were deposits placed by banks with the Treasury on the latter's instructions. They were not negotiable and matured after six months, but the holder could request repayment at any time for the purpose of subscribing to gilt issues, or for emergency purposes. They were therefore less liquid than Treasury bills.

years from 31 March 1945 (see Table 5), but £2,107 million of that amount was accounted for by gilts issued as compensation to owners of securities of companies that were nationalised in that period (in the transport, coal, electricity, gas, iron and steel, and telecommunications industries, as well as the Bank of England). In nationalising private companies, the government exchanged one long-term security (gilts) for others (equities and corporate bonds). The nationalisation programme therefore cannot be said to have changed the maturity structure of the government's balance sheet.

There was thus a significant shortening in the average maturity of government debt in the ultra-cheap money period 1945–48. And when proper adjustment for the nationalisation programme is made, it becomes clear that there was no real lengthening over the entire period of the Labour government (1945–51), despite the overhang of short-term debt at the end of the war (compare the adjusted figures for 1951 with those for 1945).

The large volume of liquid government debt outstanding at the end of the war, and its expansion during the ultra-cheap money period, facilitated rapid expansion of money and credit, as Table 6 shows. Bank credit expanded by more than 20% in both 1946 and 1947, and deposits increased by 16.2% in 1946. Inflation began to rise despite widespread price controls and rationing.

The period 1945–47 was one in which debt management policy was indistinguishable from monetary policy, and the structure of interest rates throughout the yield curve was managed as a single enterprise. Moreover the criteria for determining interest rates were clearly articulated. The experience showed, however, that pegging long-term bond yields at a level determined by the government, based on a mistaken economic forecast, and not endorsed by the market, was not a sustainable policy. The time for cheap money had passed.

4. The reactivation of monetary policy after 1951

The strength of demand after the war and the emergence of inflationary pressures made it clear to the incoming Conservative administration that a tighter monetary policy was needed.[20] Pursuing a tighter monetary policy was difficult, however, for two reasons. First, increases in short-term interest rates automatically caused increases in government expenditure on debt servicing and an automatic fiscal easing. Second, the banks had large stocks of Treasury bills which they could easily liquidate to finance commercial loans. Controls on bank lending, in the form of official 'requests', could contain the pressure to some degree, but their continuing effectiveness could not be taken for granted. Short-term interest rates would have to rise.

Against this background it is understandable that the main objective of debt management policy after 1951 was to sell more gilts, run down the stock of Treasury bills, and thereby extend the average maturity of the outstanding debt. However, the desire to spare the Treasury increased debt servicing costs as interest rates rose implied imposing costs on someone else, and government securities were a notoriously bad investment for nearly three decades. The price of 3½% War Loan, which had been issued in 1932, fell from 103 7/16 at the end of 1946 to 77 5/8 at the end of 1952 to 56 at the end of 1962, as Figure 2 shows.[21] Had exchange controls not been in operation, and had bank balance sheet expansion not been restrained by controls, the fall in prices would have been faster. At the same time, the

[20] The Chancellor of the Exchequer was Mr R A Butler.

[21] Therefore it would not have been in the Treasury's interest to consider calling the issue at the first option date on 1 December 1952.

retail price index rose steadily, as Figure 2 also shows. The national debt-to-GDP ratio fell from 241 per cent in 1948 to 111 per cent in 1962, a fall of 54%, but it would have been only 23% in the absence of inflation, on the wholly unrealistic assumption that other things would have been equal.

An example of the way in which funding policy imposed losses on the private sector is provided by the very large Serial Funding operation of November 1951. Bank Rate, which had been unchanged at 2% since 1932 (apart from a short-lived increase on the outbreak of war), was increased to 2½% on 8 November.[22] In order to absorb surplus liquidity, and reduce the cost to itself of raising short-term interest rates, the Treasury simultaneously offered three new government securities, with 1-, 2- and 3-year maturities, known as Serial Funding stocks. They were issued in exchange for Treasury bills and were aimed principally at banks and discount houses, who were subjected to 'moral suasion' to subscribe. The total sold on first issue was £1 billion, which thus absorbed more than a quarter of the Treasury bills outstanding outside the public sector (as estimated by the Radcliffe committee).They were sold at yields of 1.245%, 1.495% and 1.750% per cent respectively for 1, 2 and 3-year maturities.[23] The increase in Bank Rate from 2½ to 4% in March 1952 caused the prices of the Serial Funding stocks to fall heavily and imposed large losses on the holders.[24] The resentment engendered by this episode among the leveraged and undiversified discount houses persisted until at least the late 1980s, as the author can testify.[25]

The authorities had some limited success in lengthening the maturity of the outstanding debt. As Table 7 shows, the volume of Treasury bills held in the market fell sharply in the year ending 31 March 1952 as a result of the Serial Funding operation, although the reduction was partly reversed in the following few years. Moreover, the banks' holdings of gilts increased sharply in 1952–54 (see Table 6).

Gilt-edged issues in the 1950s were concentrated at short and medium maturities, and there were few long-term (over 15-year) issues, as Table 7 shows. Why was this? Fforde's history of the Bank of England demonstrates that the main concern of monetary policy at that time was to restrain bank credit, and gilt sales helped achieve that objective by absorbing liquid assets (Treasury bills) from the banks and thereby reducing their cash and liquid asset ratios and their capacity to lend.[26] Debt management policy thus rested heavily on the London clearing banks' minimum ratio of roughly 30% of cash and liquid assets (including Treasury bills but not gilts) to deposits. From that standpoint, gilt sales to banks were highly desirable and it would have been natural for new issues to have been at short/medium maturities, with bank investors in mind.

However, this cannot be a complete explanation. Sales of long-term gilts to non-banks, such as pension funds, would have absorbed bank deposits and reduced the banks' liquidity ratios in a different way; they would have been no less effective in achieving the objectives of monetary policy. But sales of long-term gilts were quite small, and the amount of over-15 year gilts outstanding[27] fell from £8.6 billion at the end of March 1951 to £6.6 billion

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[22] For an account of the tightening of monetary policy in November 1951, see Fforde (1992, pages 398–412). The account makes it clear that debt management was an integral part of monetary policy.

[23] Source: Pember and Boyle (1976).

[24] The rise in Bank Rate to 4% is described by Fforde (1992, pages 445–448). On a very rough calculation, the total losses of investors in serial funding stocks over the three years they were in issue will have been 0.06% of one year's GDP.

[25] See also Cleaver and Cleaver (1985, page 86) and Kynaston (2002, page 48).

[26] See Fforde (1992, chapter 10).

[27] Other than those held by the National Debt Commissioners.

ten years later (see Table 7). It was in the 1950s that the 'cult of the equity' became fashionable among fund managers. Equities were attractive not only because of their positive attributes but also because of the negative attributes of gilts. George Ross Goobey, an influential fund manager who was the leading advocate of equities, put it as follows:

> *In the actuary's calculations it is assumed that the capital value of the investment is sacrosanct, but this does not necessarily mean that the value of each investment is sacrosanct. What is intended is that the capital value of the fund must not be reduced in one way or another. Even in the most respectable funds, of course, we do get capital depreciation. How many funds, for instance, in the old days invested in Daltons at par? It will be a long while before we see them back at what they were purchased at – if ever. Yet we have criticism of investment in Ordinary stocks and shares on the grounds that one is going into this class of security with the contemplation that certain of them may create a loss.*[28]

Although the authorities were concerned to sell gilts to banks in order to absorb bank liquidity and thereby contain credit growth, there was nothing, except official requests to restrain lending, to stop banks selling gilts in order to finance additional bank advances. That is exactly what the banks did after lending controls had been withdrawn in 1958 (temporarily, as it turned out) and replaced with Special Deposits, which were an instruction to banks to place funds with the Bank of England.[29] Banks' holdings of gilts fell by £1.1 billion (45.0%) between 1959 and 1961, and advances to customers increased by £1.4 billion (55.9%). Special Deposits were £0.2 billion at the end of 1961.The banks' cash and liquid assets ratio actually increased by 1.5 percentage points in 1959–61 (data are from Table 6).

The objective of monetary policy in the 1950s was to contain private sector demand sufficiently to keep aggregate demand and supply roughly in balance, and thereby protect the exchange rate parity and contain inflation. Debt management and official controls were regarded as weapons of monetary policy, along with variations in short-term interest rates, which were used rather sparingly, perhaps because of their effects on the government's debt servicing costs. The policy was barely sufficient to protect the exchange rate parity; there were a number of crises and the pound had ultimately to be devalued (in 1967) after a long struggle. The heavy reliance on controls on bank lending stifled competition in banking and eventually became unsustainable.

5. Overfunding

The inflationary experience of the 1970s led to a desperate search for a method of managing an effective anti-inflationary monetary policy. The result was monetary targets, which were initially adopted in 1976. The target was for the growth rate of broad rather than narrow money. The Bank of England knew at the time that the demand for broad money was not a stable function of income and short-term interest rates, and short-term interest rates were not an effective means of controlling broad money growth.[30] The choice of a broad rather than a narrow target was made partly on the grounds that it was superficially easier to relate

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[28] See Ross Goobey (1956, pages 29–30). 'Daltons' was the market's name for the 2½% undated stock issued in January 1947 by Dr Dalton in pursuit of ultra-cheap money. Mr Ross Goobey was right: the price of Daltons has not returned to par since they were issued; moreover, the currency in which the price is expressed has been greatly inflated.

[29] See Capie (2010, pages 253–257).

[30] See Hacche (1974) and Allen (1981).

monetary growth to the budget deficit in the case of broad money than in the case of narrow money, so a broad money target offered a better prospect than a narrow one of influencing fiscal policy.[31]

The stakes were raised with the advent of the Thatcher administration in 1979. The new government, anxious above all to subdue inflation, introduced a Medium Term Financial Strategy whose centrepiece was a sequence of decreasing targets for the annual growth of broad money over five years. This was based in the idea that a commitment to reducing monetary growth was a necessary condition for bringing inflationary expectations down.

Short-term interest rate management, as already noted, was not effective in controlling broad money. Debt management, however, was effective. By selling government securities to non-banks, the Bank of England (which was the government's debt manager) could exert some control on broad money growth by absorbing from the non-bank private sector liquidity created by bank credit. Table 8 shows how overfunding of the budget deficit offset the expansionary effects of bank credit on broad money growth. For the purpose of controlling broad money, the maturity of the debt that was sold was largely immaterial, except that sales of shorter-dated debt were more likely to be to banks and therefore not to contribute to containing broad money growth, and that of course the shorter the term of the debt sales is the sooner they need to be refinanced. The maturity structure of debt sales is shown in Table 9.

Overfunding meant selling more than enough long-term debt (mainly gilts and National Savings instruments) to finance the government, so that the stock of Treasury bills was run down to the minimum amount compatible with keeping the market in existence, and the Bank of England built up a large holding of commercial bills, those being the assets which it chose to buy in order to relieve shortages of cash in the market. This was known as the 'bill mountain', which reached £15.1 billion, or 4¾% of GDP, at the end of March 1984,[32] at times within financial years exceeding £20 billion. These developments are shown in Table 10.

Despite the difficulties of meeting monetary targets, the rate of inflation and inflationary expectations fell sharply in the first half of the 1980s, and long gilts were, for the first time for many years, an attractive investment, particularly during 1982 (see Figure 4).

The inflationary expectations of the government were higher than those of the market, and long gilts were accordingly unattractive to the government as an issuer; it was partly for that reason that index-linked gilts were introduced in 1981. Nevertheless, there were also substantial sales of long conventional (ie not index-linked) gilts; in addition, there were sales of convertibles ie short-dated stocks convertible at the holder's option and at a pre-determined price ratio into longer maturities. The available data are shown in Table 9.

There was scope for debate about whether overfunding indirectly caused additional bank lending and was therefore less effective than it appeared to be in containing monetary growth. Certainly there was evidence of some amount of 'round-tripping' operations in which companies drew bills which could be sold to the Bank of England, and placed the proceeds on deposit with a bank, earning a positive interest margin. However it is hard to dispute that overfunding was effective in draining liquidity from the economy.

Overfunding was brought to an end in 1985 by Chancellor of the Exchequer Nigel Lawson.[33] In his memoirs, he comments that

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[31] The constraints normally imposed by the International Monetary Fund on Domestic Credit Expansion had the same quality. See Fforde (1983).

[32] See Coleby (1983) for further discussion.

[33] At the same time, the broad money target was supplemented with, and thus diluted by, an additional monetary target for the monetary base (M0).

> *By the time of my Mansion House Speech of 17 October 1985, the position had become ridiculous. The bill mountain had grown to fresh heights; yet M3 [the targeted broad monetary aggregate] had in the latest twelve months grown by 14 per cent compared with a 5 to 9 per cent target rate. The conclusion I reached was that overfunding should be abandoned and net sales of gilts confined, as in the old days, to financing the Budget deficit.*[34]

In effect, the volume of gilt sales, and the maturity structure of the government's balance sheet, was being determined by the rate of bank credit extension, which was in turn determined by the banks and not the government. This was too much for the Treasury. The coordination of debt management policy with monetary policy had reached its outer limit.

6. Measurement of debt management policy initiatives

There is no comprehensive one-dimensional measure of debt management policy, since any shift in the distribution of debt between any pair of maturities across the entire maturity spectrum, or any shift in the distribution of debt between different types (eg having different tax status), in principle represents a change in policy.

However it is possible to measure the effect of debt management actions crudely by their effect on the volume of Treasury bills and other short-term government debt outstanding in the market. This section sets out such a measure for the main debt management actions in the episodes described above, and compares them with the recent quantitative easing conducted by the Bank of England. The results are summarized in Table 11.

(a) The War Loan conversion

Measurement is difficult in this case. The 5% War Loan was widely expected to be called before long and its price therefore could not rise much above par. It had a liquid market and behaved like a short-dated government security, though banks could not treat it as a liquid asset. In the conversion operation, £1,921 million of the £2,085 million outstanding was converted into 3½% War Loan 1952 or after, and the remainder of £163 million was redeemed for cash. Thus £2,085 million of a quasi-short-dated government securities disappeared, equivalent to 49.4% of GDP, and £163 million of new Treasury bills were created to finance cash redemptions, equivalent to 3.9% of GDP.

(b) Ultra-cheap money

In the three years after 31 March 1945, the total of Treasury bills held in the market increased by £1,026 million, or 9.6% of average GDP. The total of Treasury Deposit Receipts fell by £568 million (5.3% of GDP) over the same period, however.

(c) Reactivation of monetary policy

Section 4 and Table 7 show that the effect of the debt management component of post-1951 monetary policy was at its strongest after the Serial Funding operation of November 1951. Later debt management operations were largely aimed at refinancing the Serial Funding

[34] Lawson (1992, page 459).

issues and their successors as they matured. The Serial Funding operation absorbed £1 billion of Treasury bills, equivalent to 6.8% of GDP, and that is the measure of its scale.

(d) Overfunding

In measuring the scale of overfunding, it is necessary to include not only the fall in Treasury bills outstanding but also the accumulation of commercial bills by the Bank of England. Between the end of March 1978 and the end of March 1984, the estimated total was £12.4 billion, or 4.9% of average GDP.

The recent quantitative easing has involved the purchase of £198.3 billion of gilts by the Bank of England in exchange for deposits in the Bank of England, which may be regarded as liquid assets. The scale of the operation is 13.9% of average GDP in 2009–10, and this is the amount shown in Table 11. It is clear from Table 11 that, on the chosen measure, the recent quantitative easing is the largest debt management action since 1932.

7. Comparison of debt management policy initiatives

Both the National Debt Enquiry (1945) and the Radcliffe Committee (1959) attached great importance to government debt management as a weapon of macroeconomic policy. Both reports recommended that in implementing debt management policy the authorities should have an objective for the level of interest rates, not just at short maturities but at all maturities (see, for example, the Radcliffe committee's recommendation quoted in section 1 above). The authorities did indeed have an objective for interest rates at all maturities in the ultra-cheap money period of 1945–47, though they were unable to achieve it. At other times, however, their policy was quantity-driven. Thus, in the 1950s the immediate objective was to keep down the stock of Treasury bills and contain the scale of liquid assets available to banks, and in the 1980s it was to absorb from the non-bank private sector the liquidity created by bank lending.

There were at times problems in managing the pace of official gilt sales, particularly when gilt prices were falling and yields rising (see Goodhart 1998, pages 56–61, and Capie 2010, pages 468–482 and 689–695). Those problems had their origin in the microstructure of the gilt market, in which market-making services were provided within the stock exchange by a small number of jobbing firms which had relatively little capital and were in no position to underwrite a government auction. Analysis of this issue is beyond the scope of this paper; moreover, the problem disappeared with the 'Big Bang' in the London stock exchange in 1986 and the advent of broker-dealers in the gilt market.

It is possible to discern two distinct channels through which government funding operations *were thought to* support monetary policy at different times. One of them (the 1950s model) was through the effect of funding operations on the stock of Treasury bills and bank liquidity. Until 1971, the London clearing banks were, in effect, required to maintain a minimum ratio of cash and liquid assets to deposits of about 30 per cent. For this purpose, bills, including Treasury bills, counted as liquid assets, but gilts did not. Therefore selling gilts to absorb Treasury bills made the banks less liquid and effectively tightened monetary policy. This channel depended on selling gilts to banks and was based on the idea that a reduction in credit expansion, rather than in monetary growth, constituted a tightening of monetary policy.

The second channel (the 1980s model) depended on selling gilts to non-banks, which paid for them by drawing down bank deposits, and which, as a result of purchasing gilts, had smaller money balances. The liquidity of the banks and their ability to lend were not much affected because the supply of commercial bills, which could be sold to the Bank of England, proved to be very elastic. The second channel was based on the idea that a reduction in monetary growth, rather than credit expansion, constituted a tightening of monetary policy.

The workings of these two channels of influence are summarized in Table 12, together with a summary of the workings of quantitative easing (discussed in section 8).

The distinction between the two channels is more about the way in which the monetary authorities saw their policy working than about the way in which it actually worked. For one thing, the Treasury and the Bank of England could not of course determine who would be the buyers of the gilts they sold. And more fundamentally, as noted by Tobin (1963) and Friedman (1992), any sale of gilts in exchange for bills will have led to adjustments in relative yields and set off a chain of portfolio adjustments in both banks and non-banks; the Treasury and the Bank of England were however never able to measure or estimate these adjustments. The biggest difference between the 1950s and the 1980s was that the main banks observed the 30% minimum cash and liquid assets ratio in the 1950s, whereas by the 1980s, liability management had become normal practice and banks were no longer bound by any liquid asset ratios. It was in that environment that the Treasury's willingness to use debt management to support monetary policy was exhausted in 1985. This was the background to the UK debt management review of 1995 and the Bank of England conference of 1998, which were mentioned in the introduction.

8. Bank liquidity, quantitative easing and central bank independence

After the financial crisis, and with the advent of minimum liquid asset ratios imposed by regulators as part of Basel III, the environment has changed again.[35] Until the recent crisis, highly-rated banks could fund lending readily by interbank borrowing. The liquidity provided by government debt was of minor significance, as the debt management review of 1995 and the Bank of England conference of 1998 concluded. During the crisis, however, it suddenly became a matter of immense significance as banks could not borrow readily in commercial markets and needed emergency liquidity assistance from central banks, and as government debt was one of the assets regarded as safe even during the crisis.[36] Now, after the crisis, banks still cannot borrow nearly as readily to finance lending, and this is one reason why monetary and debt management policies are now once more interconnected. Another reason is the liquidity provisions of Basel III. These provisions make it unattractive to finance lending by short-term inter-bank borrowing, since liquid assets have to be held against 100% of inter-bank liabilities falling due within a month. Moreover, they require banks to hold their minimum quantities of liquid assets in large part in the form of government debt or other sovereign claims.

It has become common for debt management agencies to be assigned the objective of minimising the cost of the debt to the public finances, subject to not taking unacceptable risks.[37] The objective is an understandable one, and is consistent with the pre-1918 view of debt management in the United Kingdom as 'a matter of budgetary convenience' (see

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[35] The Basel III Liquidity Coverage Ratio will not become formally effective until 2015, and the Net Stable Funding Ratio not until 2018, but they have already begun to affect banks' behaviour.

[36] See Allen and Moessner (2011, section 5).

[37] The stated objective of UK debt management is "to minimise, over the long term, the costs of meeting the Government's financing needs, taking into account risk, while ensuring that debt management policy is consistent with the aims of monetary policy." See H M Treasury (2011, page 10). The objective has been unchanged since the financial year 1998–99, immediately after responsibility for debt management had been transferred from the Bank of England to the newly-created Debt Management Office. The reference to monetary policy has been a dead letter for many years, and there are no institutional means of implementing it, since monetary policy is managed autonomously by the Bank of England, and the Debt Management Office is part of the Treasury.

reference to Hicks above). It is impossible to know in advance which debt management strategy will minimize cost, or, after the event, to assess the degree to which cost minimisation has been achieved, except over very long periods of time. Therefore the objective cannot provide very precise guidance to debt managers. For example, the debt management policy of the 1930s achieved a massive and much-needed reduction in debt servicing costs. Even though the cost saving would, as it turned out, have been greater if more Treasury bills and fewer gilts had been issued, that was not certain at the time the policy was implemented, and the policy actually pursued was entirely defensible at that time on cost minimisation grounds. Yet the analysis of this paper, and that of earlier commentators, suggests that it was not ideally adapted to promoting economic recovery. In present conditions, therefore, it is questionable whether cost minimisation is on its own a sufficient objective for debt management agencies.

The recent adoption of quantitative easing by the Bank of England and other central banks is a form of debt management (the replacement of gilts with deposits in the central bank) and is *ipso facto* tacit acknowledgment of the importance of debt management. In an economic sense deposits in the central bank are obviously much more liquid than, say, 30-year gilts; in that economic sense, quantitative easing obviously does provide more liquidity to the economy.

However, banks' decisions about liquid asset holdings are largely driven by regulation (or anticipation of future regulation), and in current circumstances this is what matters for portfolio behaviour. From the regulatory viewpoint, quantitative easing has no immediate effect on the supply of liquid assets to banks, because gilts are defined as liquid assets for regulatory purposes; thus quantitative easing involves exchanging one liquid asset (deposits in the central bank) for another (gilts), and does not affect the total amount of liquid assets available. However, quantitative easing may nevertheless induce a shifting of liquid assets (as defined for regulatory purposes) from non-banks to banks. Sales of gilts by non-bank investors such as pension funds leave gaps which may be partly filled by newly-issued corporate securities, the proceeds of which may be used to repay bank loans. To the extent that this happens, bank liquidity ratios improve.[38]

It is too soon to assess the effects of quantitative easing (short- and long-term interest rates since 2007 are shown in Figure 5: Yields on 2.5% Consols and 3-month Treasury bills, 2007–11).

However, quantitative easing is thought of as a policy weapon to be used in exceptional circumstances, when short-term interest rates are so low that they can go no lower. Debt management continues, whatever the level of short-term interest rates, and its renewed importance for monetary policy is likely to persist even after interest rates have begun to rise.

The conclusion that debt management is once more highly relevant to monetary policy raises an awkward question about the independence of central banks from governments, and of governments from central banks. If, as in the past, government debt management is to be an integral part of monetary policy, who is to manage it? The possibilities are:

(i) For governments to delegate debt management to independent central banks. However, since governments could not dismiss central bankers for poor debt management performance, or easily recruit an alternative debt manager, they would not find this option attractive.

[38] If the non-bank sellers of gilts to the Bank of England simply leave the proceeds on deposit in the bank, the bank's liquidity is increased, but its liquidity requirement under the Basel III Liquidity Coverage Ratio may also increase, by an amount depending on the nature of the depositor and the maturity of the deposit.

(ii) For governments to take decisions about debt management (possibly after discussion with their central banks), and leave it to central banks to react as they see fit, as they do in the case of fiscal policy. However this leaves open the possibility that the central bank might want to conduct very large operations in government debt, but find that the financial risks involved would be so great that it was unable to do so without a government guarantee, and therefore unable to pursue the monetary policy that it thought best adapted to the needs of the time without government support. This involves a compromise of central bank independence.

(iii) For monetary and debt management policies to be managed jointly by the central bank and the government. This too would compromise central bank independence.

None of these possibilities is entirely satisfactory. Quantitative easing has the attraction, from the central bank's point of view, that it can be conducted without any coordination with the debt management office, and therefore avoids raising the question of independence directly. But the Bank of England needed an indemnity from the Treasury for any losses incurred in its recent quantitative easing operations. Had the Treasury not agreed with the policy, there would have been no indemnity and no quantitative easing. The Bank obtained the indemnity, and solution (ii) was adopted. The question will need to be answered permanently if debt management comes again to be treated as an enduring integral part of monetary policy, even after short-term interest rates have risen from the floor.

Statistical annex

Note on data

Statistics on debt management are not easy to come by for all periods of the 20th century. For much of the time, the Treasury and the Bank of England were anxious not to disclose information about their operations, normally wanting the market to think they had sold more debt than they actually had. Until the extensive recommendations of the Radcliffe report about collection and publication of statistics had been implemented, not much information was therefore available from official sources. The stockbrokers Pember and Boyle published an admirable compendium of information called 'British Government Securities in the Twentieth Century' in two volumes, covering 1900–1950 and 1951–1975 respectively (see Pember and Boyle, 1950 and 1976). They provide information about the maturity structure of government debt in issue, and of gilts (but not other government securities) held by the National Debt Commissioners (an internal government fund). However, they do not provide (and did not have) information about debt held by other bodies within the public sector, such as the Issue Department of the Bank of England, whose holdings and transactions were kept secret. Therefore the total debt figures they report overstate the holdings of debt outside the public sector.

Howson (1975) contains estimates relating to the inter-war period, and I have used them in this paper. As regards the post-war period, the Radcliffe report included some very useful statistical information on government financing. The government debt data used in this paper for the period 1945–1951 are taken from the Radcliffe data. For the period after 1951, I use the Pember and Boyle data, supplemented with some information from Radcliffe. During the overfunding period of the 1980s, more official data were published (thanks to Radcliffe) and I use them.

Estimates of nominal GDP for the period up to 1947 are taken from Officer (2011). For 1948 onwards, the estimates of the Office for National Statistics are used.

Note on terminology

'British government securities' are debt securities of all kinds issued by the British government. There were also some securities issued by nationalized industries and guaranteed by the government; for the purposes of this paper, they are indistinguishable from British government securities.

'Gilt-edged securities' are bonds issued by the British government with original maturities of a year or more and listed on the London stock exchange. They are thus a subset of British government securities[39]. Treasury bills are discount instruments which can have maturities as long as a year but have normally been issued with maturities no longer than six months. They are not listed on the London stock exchange.

The British government's financial year begins on 1 April, so that, for example, the financial year 1946–47 ran from 1 April 1946 to 31 March 1947.

[39] Some issues by borrowers other than the British government were also treated by the stock exchange as gilt-edged, but this complication is irrelevant to the present paper.

Table 1

Private-sector holdings of national debt, 1919–39

As at 31 March each year (£ millions)

	Gilts					Other debt			Total
	< 5 years	5–15 years	15–25 years	> 25 years	Repayable only by govt option	Floating debt	Other internal debt	External debt	
1919	937	1,027	56	1,954	237	865	248	1,293	6,617
1920	861	860	64	2,648	236	901	300	1,222	7,092
1921	841	811	79	2,593	236	935	309	1,129	6,933
1922	572	1,167	77	2,545	486	762	373	1,085	7,067
1923	693	774	2,067	686	905	514	375	1,156	7,170
1924	1,053	312	2,142	672	890	483	385	1,126	7,063
1925	951	292	2,213	657	914	486	390	1,122	7,025
1926	1,000	155	2,283	643	974	487	396	1,111	7,049
1927	733	212	2,352	631	1,097	535	396	1,101	7,057
1928	502	344	2,386	641	1,225	474	385	1,095	7,052
1929	472	194	2,402	613	1,360	507	388	1,085	7,021
1930	443	307	2,099	905	1,346	426	380	1,074	6,980
1931	366	397	2,070	897	1,323	446	409	1,067	6,975
1932	399	337	2,073	891	1,310	520	409	1,091	7,030
1933	112	558	259	885	3,263	654	409	1,060	7,200
1934	276	553	474	879	3,229	644	419	1,037	7,511
1935	184	557	284	1,008	3,191	612	311	1,037	7,184
1936	101	549	281	958	3,522	660	311	1,037	7,419
1937	67	533	732	754	3,163	561	303	1,033	7,146
1938	65	900	464	753	3,156	683	313	1,032	7,366

Source: Howson (1975)

Table 2

UK banks' assets and deposit liabilities, 1918–38

(£ millions, ends of year)

	Cash, money at call and short notice	Discounts	o/w Treasury bills	o/w commercial bills	Investments	o/w govt securities	Loans, advances and other accounts	Total assets/ liabilities	Deposits
1918	623.9	389.8	196.8	193.0	531.9	421.9	640.8	2,221.9	2,024.5
1919	594.3	320.7	172.1	148.6	617.0	513.6	1,055.4	2,611.8	2,398.2
1920 (a)	584.8	400.2	164.4	235.8	571.0	469.8	1,177.4	2,771.2	2,537.7
1920 (b)	551.5	392.9	159.5	233.4	508.2	417.5	1,115.3	2,604.1	2,397.6
1921	546.6	520.7	290.7	230.0	530.1	451.9	991.4	2,620.1	2,420.0
1922	523.4	353.4	207.3	146.1	610.4	516.1	939.7	2,461.2	2,261.2
1923	506.2	315.3	158.8	156.5	573.3	489.6	978.0	2,408.0	2,210.2
1924	525.7	269.2	115.9	153.3	526.9	441.6	1,039.1	2,397.9	2,194.2
1925	528.5	256.0	110.2	145.8	469.0	390.4	1,099.1	2,390.6	2,184.3
1926	528.3	265.1	123.4	141.7	453.5	374.9	1,145.8	2,432.6	2,222.9
1927	584.3	263.8	127.6	136.2	436.3	353.8	1,162.3	2,487.9	2,274.7
1928	591.3	287.6	128.3	159.3	441.8	373.1	1,199.1	2,570.9	2,351.7
1929	571.6	253.1	117.9	135.2	439.8	357.7	1,222.7	2,535.8	2,314.5
1930	570.7	371.0	190.5	180.5	507.5	420.6	1,125.1	2,622.9	2,396.0
1931	501.6	290.5	207.7	82.8	516.8	427.8	1,071.7	2,440.2	2,225.5
1932	546.9	450.0	349.6	100.4	754.7	654.3	924.4	2,722.2	2,509.6
1933	542.9	341.7	265.7	76.0	881.1	774.2	881.3	2,697.8	2,484.9
1934	583.3	267.6	187.7	79.9	919.0	811.4	916.8	2,744.9	2,525.9
1935	609.0	317.6	198.8	118.8	967.9	847.8	939.3	2,891.3	2,672.8
1936	677.0	300.4	196.9	103.5	1,026.5	904.7	1,016.4	3,072.2	2,855.8
1937	635.9	294.3	175.5	118.8	1,005.1	885.3	1,124.0	3,113.2	2,887.7
1938	613.9	244.3	143.9	100.4	996.0	875.8	1,121.9	3,034.3	2,810.4

Notes:

(a) Including Southern Ireland.

(b) Excluding Southern Ireland.

Source: Sheppard (1971, table (A) 1.1).

Table 3

Net official sales of gilts, 1945–49

(£ million)

Quarter	Net official sales (+)
1945Q2	141
1945Q3	166
1945Q4	655
1946Q1	30
1946Q2	200
1946Q3	-91
1946Q4	-40
1947Q1	-107
1947Q2	-25
1947Q3	-104
1947Q4	-81
1948Q1	-253
1948Q2	-32
1948Q3	-19
1948Q4	28
1949Q1	90

Source: Central Statistical Office (1961, table 1).

Table 4

Government bond yields, 1945–47 (%)

End of	Short	Medium	Long	Consols
Jul-45	2.41	2.64	2.96	2.83
Aug-45	2.39	2.66	2.95	2.82
Sep-45	2.45	2.63	2.98	2.82
Oct-45	2.55	2.62	2.98	2.70
Nov-45	2.56	2.68	2.99	2.76
Dec-45	2.54	2.70	2.97	2.73
Jan-46	2.34	2.55	2.78	2.71
Feb-46	2.24	2.50	2.68	2.70
Mar-46	2.28	2.40	2.69	2.67
Apr-46	1.96	2.17	2.51	2.60
May-46	2.13	2.38	2.62	2.50
Jun-46	2.15	2.39	2.60	2.57
Jul-46	2.09	2.36	2.53	2.58
Aug-46	2.04	2.33	2.52	2.59
Sep-46	2.05	2.23	2.48	2.56
Oct-46	1.68	2.05	2.28	2.54
Nov-46	1.78	1.97	2.27	2.53
Dec-46	1.73	1.99	2.29	2.54
Jan-47	1.55	1.91	2.22	2.54
Feb-47	1.74	2.04	2.36	2.58
Mar-47	1.90	2.23	2.52	2.64
Apr-47	1.97	2.19	2.48	2.63
May-47	1.92	2.16	2.47	2.62
Jun-47	2.08	2.35	2.66	2.68
Jul-47	2.53	2.75	3.00	2.78
Aug-47	2.60	2.69	2.97	2.99
Sep-47	2.69	2.78	2.99	2.99
Oct-47	2.41	2.59	2.79	2.90
Nov-47	2.42	2.76	2.98	2.87
Dec-47	2.54	2.91	3.00	3.01

Short	2.5% Nat War Bonds 1952/54
Medium	2.5% Funding 1956/61
Long	3% Savings 1960/70
Consols	2.5% Consols

Source: Howson (1993, table 3.4)

Table 5

Market (ie non-official) holdings of government debt, 1945–52

£ millions (% of total holdings in italics)

	Treasury bills	Treasury Deposit Receipts	Gilts			Small savings	Tax Reserve certificates	Total
31 Mar			**< 5 years**	**5–15 years**	**> 15 years and undated**			
1945	2,099	1,859	1,297	2,649	5,691	2,273	683	16,551
	12.7	*11.2*	*7.8*	*16.0*	*34.4*	*13.7*	*4.1*	
1946	2,731	1,559	966	3,071	6,623	2,565	648	18,163
	15.0	*8.6*	*5.3*	*16.9*	*36.5*	*14.1*	*3.6*	
1947	2,993	1,457	1,300	2,610	7,024	2,783	529	18,696
	16.0	*7.8*	*7.0*	*14.0*	*37.6*	*14.9*	*2.8*	
1948	3,125	1,291	1,736	1,869	7,925	2,775	426	19,147
	16.3	*6.7*	*9.1*	*9.8*	*41.4*	*14.5*	*2.2*	
1949	2,521	1,136	2,401	1,188	8,405	2,713	359	18,723
	13.5	*6.1*	*12.8*	*6.3*	*44.9*	*14.5*	*1.9*	
1950	3,245	465	2,100	1,172	8,627	2,669	318	18,596
	17.4	*2.5*	*11.3*	*6.3*	*46.4*	*14.4*	*1.7*	
1951	3,576	284	1,724	2,320	8,226	2,644	386	19,160
	18.7	*1.5*	*9.0*	*12.1*	*42.9*	*13.8*	*2.0*	
1951 (1)	3,576	284	1,724	2,320	6,119	2,783	529	17,335
	20.6	*1.6*	*9.9*	*13.4*	*35.3*	*16.1*	*3.1*	

Note: (1) adjusted to exclude nationalisation compensation issues.

Source: Central Statistical Office (1961, tables 2b, 3 and 4), Howson (1993, page 199 ff)

Table 6

UK banks' assets and deposit liabilities, 1945–66

(£ billions, ends of calendar year)

	Cash, money at call and short notice	Treasury Deposit Receipts and Special Deposits	Discounts	o/w Treasury bills	Investments	o/w gilts	Loans, advances and other accounts	Total assets/liabilities	Deposits
1945	1.2	1.6	0.4	0.3	1.9	1.8	0.9	6.1	5.8
1946	1.4	1.6	0.6	0.5	2.2	2.0	1.1	7.1	6.8
1947	1.5	1.3	0.8	0.7	2.3	2.1	1.4	7.4	7.1
1948	1.3	1.4	0.8	0.6	2.2	2.1	1.5	7.7	7.3
1949	1.4	0.8	1.1	1.0	2.2	2.1	1.7	7.7	7.3
1950	1.4	0.5	1.4	1.3	2.2	2.1	1.9	7.8	7.5
1951	1.4	0.1	1.0	0.8	2.6	2.5	2.2	7.8	7.5
1952	1.4		1.3	1.2	2.8	2.6	1.9	7.9	7.6
1953	1.4		1.5	1.4	2.9	2.8	1.9	8.2	7.8
1954	1.4		1.3	1.2	3.0	2.9	2.1	8.5	8.2
1955	1.4		1.4	1.3	2.6	2.5	2.0	8.1	7.8
1956	1.4		1.5	1.3	2.6	2.4	2.1	8.2	7.8
1957	1.5		1.6	1.5	2.6	2.5	2.1	8.5	8.1
1958	1.5		1.4	1.2	2.7	2.5	2.5	8.7	8.4
1959	1.6		1.4	1.2	2.2	2.0	3.3	9.3	8.9
1960	1.8	0.2	1.2	1.0	1.7	1.6	3.8	9.5	9.0
1961	1.9	0.2	1.4	1.2	1.6	1.4	3.9	9.7	9.2
1962	2.0		1.4	1.1	1.7	1.6	4.2	10.1	9.5
1963	2.1		1.4	1.0	1.7	1.5	4.9	10.8	10.2
1964	2.1		1.2	0.8	1.5	1.3	5.5	11.3	10.6
1965	2.4	0.1	1.3	0.8	1.6	1.4	5.7	12.1	11.3
1966	2.7	0.2	1.2	0.7	1.6	1.4	5.7	12.2	11.4

Source: Sheppard (1971, table (A) 1.1).

Table 7

Government debt by type of instrument, 1950–61

(£ billions; figures in italics are percentages of the total amount of gilts outstanding as at 31 March of each year)

	Treasury bills (1)	Ways and Means advances from Bank of England	Gilts (2)					Other
31 Mar			< 5 years	5–15 years	15–25 years	> 25 years and undated	Total gilts	
1950	3.2	0.4	2.3	1.3	2.8	6.0	12.4	8.2
			18.9	*10.5*	*22.4*	*48.3*		
1951	3.6	0.4	1.8	2.4	3.3	5.3	12.8	7.9
			13.9	*18.8*	*25.8*	*41.5*		
1952	2.3	0.3	3.1	2.1	3.5	5.2	13.9	7.8
			22.6	*14.8*	*25.2*	*37.4*		
1953	2.7	0.3	3.4	2.7	3.0	5.3	14.3	7.6
			23.6	*18.6*	*20.7*	*37.1*		
1954	2.8	0.3	3.2	3.4	2.9	5.4	15.0	7.5
			21.4	*23.0*	*19.5*	*36.2*		
1955	2.9	0.3	3.2	3.6	2.8	5.5	15.1	7.3
			21.4	*23.9*	*18.3*	*36.5*		
1956	2.9	0.3	3.7	4.7	2.4	4.8	15.7	7.2
			23.8	*30.0*	*15.6*	*30.6*		
1957	2.6	0.3	4.3	4.0	2.6	5.1	16.0	7.4
			26.6	*25.2*	*16.5*	*31.7*		
1958	2.9	0.3	3.5	4.5	2.7	5.1	15.8	7.3
			22.0	*28.6*	*16.9*	*32.5*		
1959	4.9	0.3	2.9	5.0	2.5	4.8	15.3	7.5
			19.3	*32.7*	*16.4*	*31.6*		
1960	5.2	0.2	2.7	5.2	2.1	5.1	15.1	7.7
			18.2	*34.3*	*13.6*	*33.9*		
1961	4.6	0.3	4.5	4.9	1.3	5.3	16.0	7.6
			28.4	*30.5*	*8.0*	*33.1*		

Notes:

(1) Estimated market holdings up to 1958 (sources: CSO 1961; Radcliffe Committee Principal Memoranda of Evidence vol I, table III); including public sector holdings after 1958 (source Pember and Boyle, 1976).

(2) Excluding holdings of National Debt Commissioners but including holdings of other public sector bodies (source Pember and Boyle, 1976).

Table 8

Overfunding and broad money growth, 1977/78 to 1984/85

	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85
Target set for sterling M3 (% increase)	9 - 13	8 - 12	7 - 11	7 - 11	6 - 10	8 - 12	7 - 11	6 - 10
£ billions								
Actual growth in sterling M3	6.2	5.3	6.4	10.3	9.7	9.8	7.6	12.0
Increase in bank lending to UK private sector	3.7	6.3	9.3	9.2	14.9	14.4	15.4	18.8
PSBR	5.5	9.2	9.9	12.7	8.6	8.9	9.8	10.1
UK non-bank residents' net purchases of public sector debt	6.9	8.5	9.2	10.8	11.3	8.4	12.6	12.4
Net funding (overfunding +, underfunding -)	1.4	-0.7	-0.7	-1.9	2.7	-0.5	2.8	2.3

Source: Temperton (1986), tables 2.2 and 3.11.

Table 9

Net and gross official sales of gilts, 1978/79 to 1989/90

(£ millions)

	Net official sales		Redemptions (1)		Gross official sales				
						Conventional			
FY	**Index-linked**	**Conventional**	**Index-linked**	**Conventional**	**Index-linked**	***Total***	**1–5 years**	**5–15 years**	**> 15 years and undated**
1978/79	**-**	**6,454**	-	-1,700	-	*7,956*	2,192	1,441	4,323
1979/80	**-**	**9,433**	-	-3,657	-	*12,634*	2,659	2,969	7,006
1980/81	**-**	**12,453**	-	-2,566	-	*15,673*	3,030	6,831	5,812
1981/82	**1,906**	**5,959**	-	-4,677	1,906	*8,730*	3,285	4,217	1,228
1982/83	**2,621**	**5,306**	-	-5,363	2,621	*7,882*	3,841	4,035	6
1983/84	**1,931**	**11,511**	-	-3,686	1,931	*13,432*	6,551	5,941	940
1984/85	**1,833**	**11,053**	-	-5,034	1,833	*13,424*	4,861	6,164	2,399
1985/86	**709**	**5,216**	1	-6,006	708	*10,972*	3,286	3,102	4,584
1986/87	**2,569**	**5,884**	-	-8,563	2,569	*12,132*	2,558	5,124	4,450
1987/88	**63**	**6,956**	-886	-5,452	949	*12,462*	3,879	4,917	3,666
1988/89	**751**	**-13,328**	-193	-8,322	944	*-5,757*	-655	-1,691	-3,411
1989/90	**-476**	**-15,792**	-439	-9,492	-37	*-5,824*	-669	-3,626	-1,529
			Maturity changes on conversion						
			1–5 years	**5–15 years**	**> 15 years**				
1978/79			-	-	-				
1979/80			- 1	-	1				
1980/81			-	-	-				
1981/82			-2	2	-				
1982/83			-1 320	817	503				
1983/84			- 294	-	294				
1984/85			-313	-	313				
1985/86			-11	- 5	16				
1986/87			-1 015	332	683				
1987/88			-386	3	383				
1988/89			-343	-	343				
1989/90			-	-	-				

Note: (1) And official purchases.

Table 10

Government financing and the Bank of England balance sheet, 1978/79 to 1989/90

(£ billions)

	Bank of England cash flows							Offsetting operations			
	Central government net cash requirement	Net gilt sales (-)(1)	Other debt sales (ex treasury bills, -)	Currency circulation (-)	Reserves	Other flows	Total	B of E commercial bill holding	Treasury bills in market (-)	Total bills	Level of B of E commercial bill holding
Financial years											
1978/79	7.8	-6.3	-2.9	-0.1	-1.3	N/A	-2.8			2.8	
1979/80	8.1	-9.0	0.6	-0.1	0.6	N/A	0.2			-0.2	
1980/81	12.7	-13.1	-2.6	-0.6	0.8	-0.5	-3.4	2.5	1.1	3.6	8.4
1981/82	7.6	-6.0	-4.9	-0.2	-1.3	-0.1	-4.8	4.1	0.0	4.1	12.5
1982/83	12.7	-5.3	-4.1	-1.2	-1.6	0.3	0.9	-1.0	-0.3	-1.3	11.5
1983/84	12.2	-11.5	-3.0	-0.3	0.1	-0.5	-3.0	3.6	-0.1	3.5	15.1
1984/85	10.2	-11.1	-3.9	-0.9	-0.5	6.7	0.5	-2.7	0.2	-2.5	12.4
1985/86	11.0	-5.2	-2.5	-0.7	1.1	0.1	3.7	-2.0	-0.1	-2.2	10.4
1986/87	10.5	-5.9	-2.6	0.3	1.5	0.7	4.4	-3.3	-0.6	-3.7	7.1
1987/88	1.4	-7.1	-2.3	-1.9	11.4	-1.0	0.6	2.5	-0.8	1.7	9.5
1988/89	-9.7	13.3	0.0	-0.8	1.5	1.9	6.2	-5.7	-0.5	-6.2	3.8
1989/90	-5.6	15.8	1.4	-0.8	-5.8	-0.5	4.6	1.1	-5.7	-4.6	4.9

Source: ONS and Bank of England Bankstats, table 16 (1978/79 and 1979/80), Bank of England Bankstats table 17 (other years).

(1) Net of gilts sold to Bank of England on repurchase agreements.

Table 11

Comparison of debt management actions

Action	Scale (% of GDP or GNP; + = expansionary, - = contractionary).
War Loan conversion (1932)	-49.4 (disappearance of 5% War Loan) +3.9 (Treasury bills)
Ultra-cheap money (1945–48)	+9.6 (increase in Treasury bills) -5.3 (disappearance of Treasury Deposit Receipts)
Serial Funding (1951)	-6.8
Overfunding (1978–84)	-4.9
Quantitative easing (2009–10)	+13.9

Notes and sources: see text.

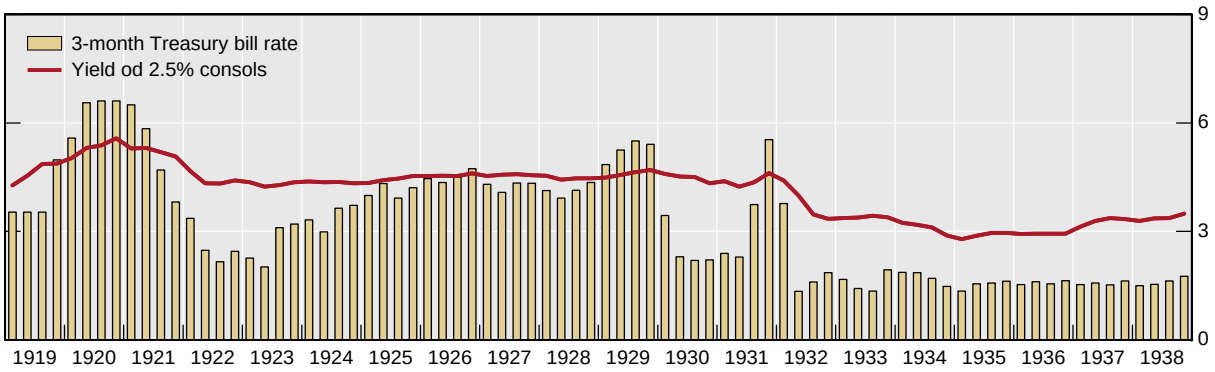
Table 12

Channels of influence of debt management policy

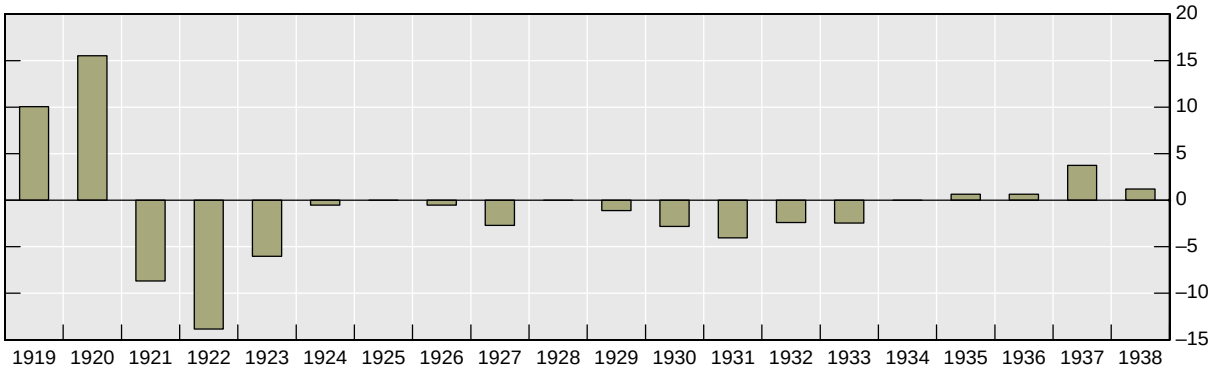
Period	Bank liquidity regulation	Effects on quantities	Effects on market prices
Up to 1971	30% liquid asset ratio. 'Liquid assets' include Treasury and commercial bills but not gilts.	Gilt sales absorb Treasury bills and squeeze banks' liquid assets, causing them to restrict commercial lending.	Gilt yields rise relative to other yields.
1980s – 1990s	None.	Gilt sales to long-term investors absorb money balances and restrict funds available for investment in equities, corporate bonds, foreign assets. Bank-liquidity squeeze relieved by official purchases of commercial bills.	Expected returns on gilts rise relative to other expected returns. Exchange rate strengthens.
2009 onwards	FSA regime (individual liquidity assessments) + anticipation of Basel III. 'Liquid assets' include gilts and Treasury bills but not commercial bills.	Quantitative easing replaces gilts with deposits in Bank of England. Both count as liquid assets for Basel III LCR. But QE may lead to gilt sales by long-term investors who replace gilts with corporate bonds or equities, facilitating debt repayments to banks and improvements in banks' liquidity ratios. Long-term investors may also use QE cash to buy foreign assets.	Gilt yields fall relative to other yields. Exchange rate weakens.

Figure 1

Yields on 2.5% Consols and 3-month Treasury bills, 1919–38

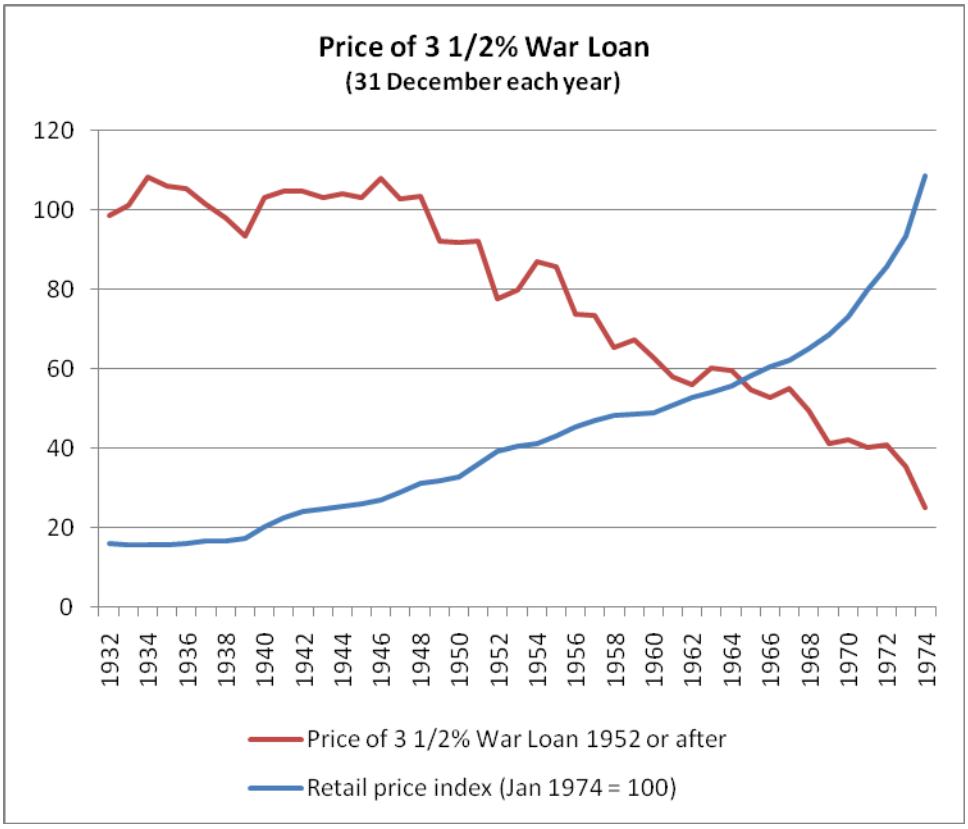


Change in retail price index



Sources: Howson (1975); national data.

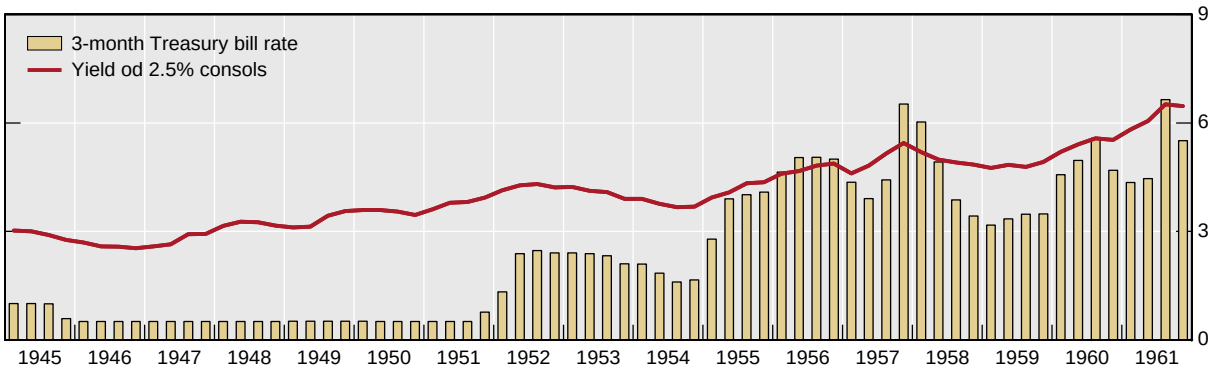
Figure 2



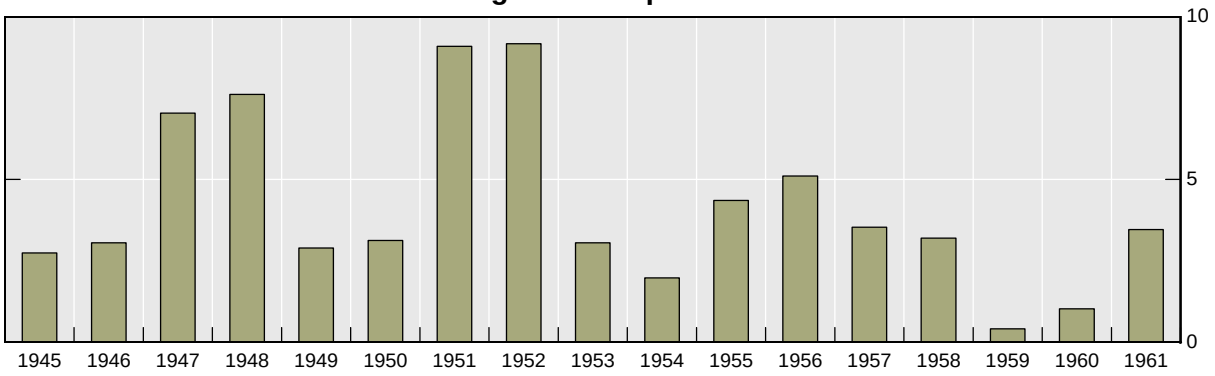
Sources: Pember and Boyle (1950 and 1976), ONS.

Figure 3

Yields on 2.5% Consols and 3-month Treasury bills, 1945–61



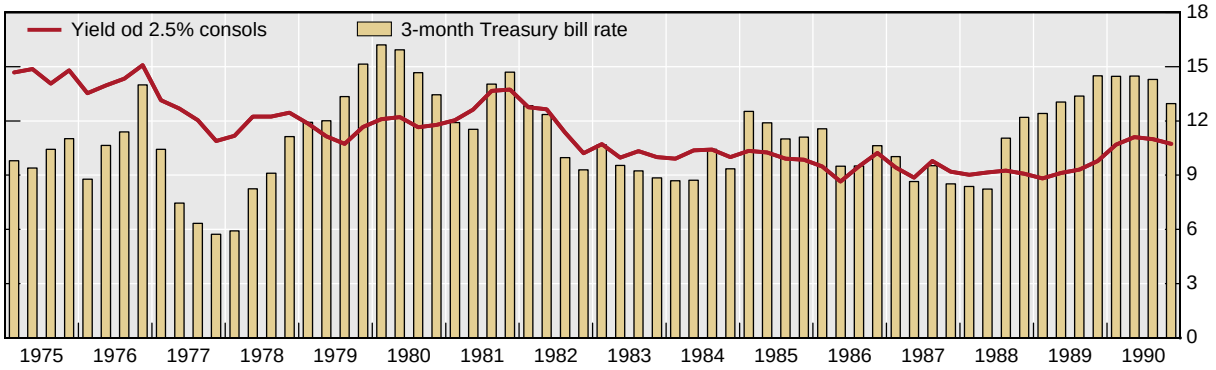
Change in retail price index



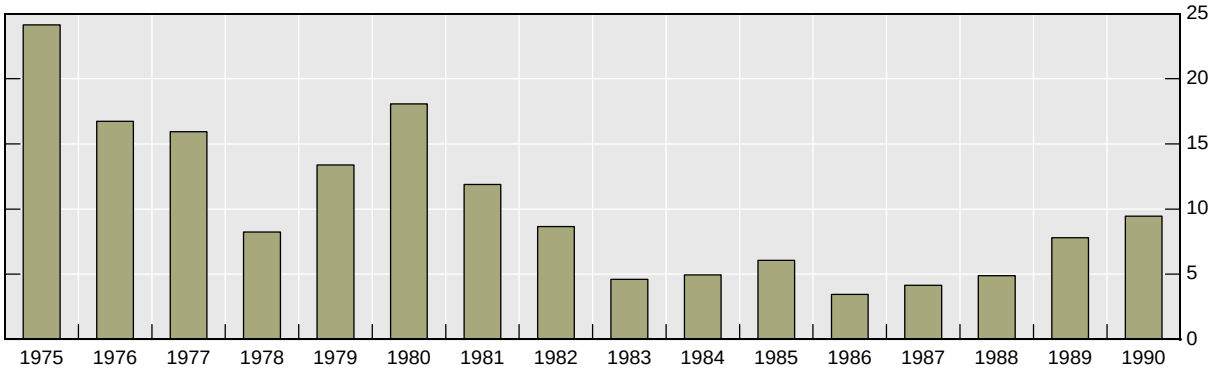
Source: BIS.

Figure 4

Yields on 2.5% Consols and 3-month Treasury bills, 1975–90



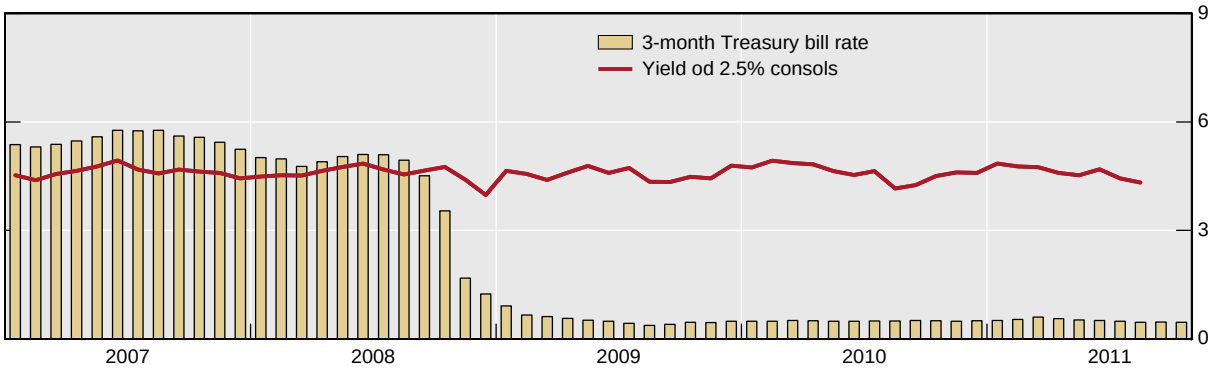
Change in retail price index



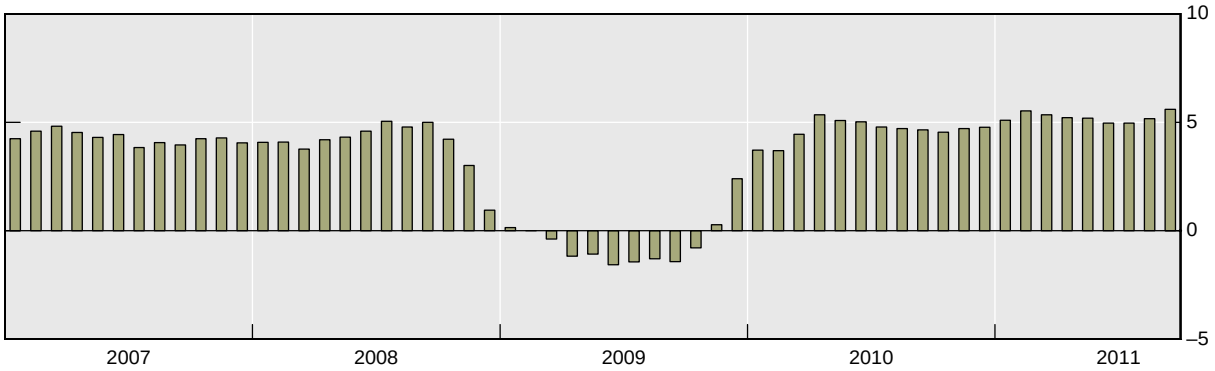
Source: BIS.

Figure 5

Yields on 2.5% Consols and 3-month Treasury bills, 2007–11



Change in retail price index



Source: BIS.

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