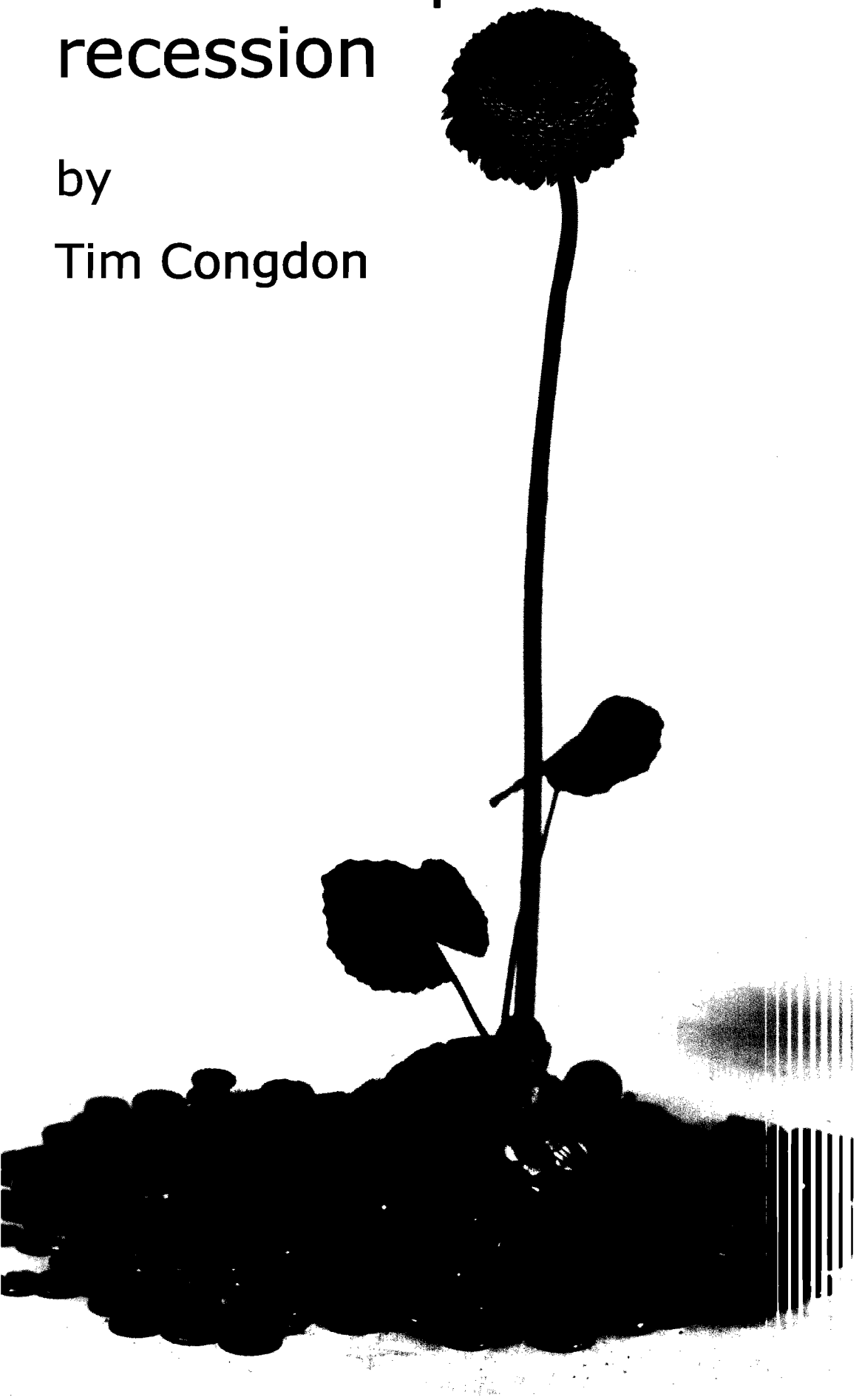
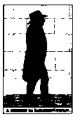
How to stop the recession

by

Tim Congdon





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Preface

Professor Tim Congdon is one of the UK's foremost economic commentators. An economic advisor to the last Conservative government and the founder of Lombard St. Research (from which he retired in 2005), he has long been characterized (indeed, caricatured) as an out-and-out monetarist. Even as an 'Austrian'. In fact, his positions are more nuanced; in the present circumstances, for instance, he argues that he is "very Keynesian" in the alleviation of recessions by monetary means – and he has the footnotes to prove it.

In this paper (for which we are pleased to have received support from Lombard Street Research), Tim argues that the present recession can be stopped, indeed reversed, by large-scale government borrowing from the banks to create more money. He believes the present crisis was largely created by a sharp squeeze in monetary conditions last year, and that this could be reversed by the government borrowing £100 billion form the banks – to be spent gradually (to finance the budget deficit) or suddenly (in a buy-back of government securities).

This obviously has something in common with the present focus on quantitative easing. What it contrasts with is this government's futile (in his view) belief that the answer lies in trying to push the banks to restore lending. As he puts it, "an over-indebted private sector, hit by a slump in housing and share prices, does not want to borrow more from the banks". What the economy needs is an increase in the quantity of money, not more bank debt.

This is a rare venture for the CSFI into the world of macroeconomics. But these are rare times, and the health of the financial sector – in the UK and globally – depends crucially on engineering an early end to what has variously been described as the worst recession since the War, the Great Depression, or the nineteenth century. We are delighted to publish Tim's more-than-modest contribution.

Andrew Hilton
Director
CSFI

Foreword

It is now widely accepted that, in the long-run, "inflation is always and everywhere a monetary phenomenon" in the sense that increases in the domestic price level are ultimately caused by increases in the stock of money. However, there remains considerable disagreement about the role of money in explaining business cycle fluctuations.

The current macroeconomic consensus has no place for monetary aggregates. Money has largely been swept under the carpet, particularly so by academic economists who have come to dominate the major central banks. Money is assumed to have no independent effect on real activity or to offer any incremental information on future demand or price pressures beyond that captured by market interest rates. The transmission mechanism of monetary policy is primarily concerned with the price of credit.

But any representation of the economy without a role for the quantity of money is materially deficient, a point made forcefully by Professor Congdon. He argues that national income can only be in equilibrium when the aggregate demand to hold money is equal to its aggregate supply. Moreover, he says, the supply of money does not adjust passively to the demand for it, as mainstream economic thinking suggests. Instead, shocks to the money supply from the banking system or from the funding choices of the government can be significant, independent sources of macroeconomic volatility.

In the case of the UK, there is considerable evidence that excessive growth in the money stock has in fact been central to explaining business cycle dynamics in recent decades. In each boom-bust phase, the economic upswing has been characterised by excessive monetary growth, followed by buoyant asset prices and above-trend output growth. By contrast, during the subsequent recessions, a collapse in monetary growth led significant declines in asset prices and economic activity.

The current boom-bust episode has been no different. Monetary growth picked up sharply in the early part of 2005 and remained in double digits until the end of 2007. Asset prices, particularly housing and real estate, benefited hugely, quickly followed by robust growth in real GDP. But since the early part of last year, monetary growth has collapsed, with the stock of broad money actually shrinking in real terms by 2% in the year to December, the most significant monetary squeeze since 1980.

UK policymakers believe that re-establishing the flow of bank credit will bring an end to the recession; hence the decisions to provide the banks with fresh equity capital, massive liquidity support and guarantees of newly-issued debt securities. This is perverse. A drought in bank lending is exactly what is expected in an environment of collapsing property prices and limited private sector credit demand. The real problem is a shortage of money.

'Quantitative easing' that directly boosts the stock of broad money is the quickest (and most easily reversed) method of beating the recession. Cuts in the policy rate may help in transferring income to an overly indebted household sector, driving down the currency and boosting bank profitability via a steeper yield curve. But with the transmission mechanism via the banking system impeded, policy must try to bypass it.

The stock of broad money can be expanded directly in different ways. The government can borrow from the banking system to finance immediate purchases of existing UK government debt from the non-bank private sector. Alternatively, the central bank could be charged with carrying out asset purchases, which can be extended to include private sector securities (e.g. commercial paper, corporate bonds), as the Bank of England seems set to do under the recently announced Asset Purchase Facility.

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This is a step in the right direction, after several months in which UK policymaking has lurched from merely ineffective to potentially highly damaging. The scheme could boost the stock of broad money by £50bn (i.e. roughly 3%) and help push up prices in key corporate securities markets, but there are significant risks that it is used too cautiously. With the prospect of outright declines in the outstanding stock of lending to the private sector, 'quantitative easing' on a much larger scale may be needed to prevent an ongoing slump in broad money and a more severe recession. Professor Congdon prescribes his preferred measures in this timely report, and Lombard Street Research is proud to support its publication.

Jamie Dannhauser
Senior Economist
Lombard Street Research

1. The role of money in the UK's boom-bust cycles

"Inflation is a monetary phenomenon"

Most people have heard the proposition that "inflation is a monetary phenomenon" and, in general terms, understand that the control of inflation involves limiting the quantity of money. But in truth both inflation and deflation are monetary phenomena. Rising prices are associated with, and arguably caused by, an excessive rate of money supply growth; falling prices are accompanied by contractions in the quantity of money. As Milton Friedman and Anna Schwartz demonstrated in their classic *A Monetary History of the United States 1867 – 1960*, it was the almost 40 per cent collapse in the money supply between 1929 and 1933 that led to the worst deflation of modern times in the US's Great Depression.

Money in a typical boom-bust cycle

These large monetary truths imply that a stable rate of money supply growth is vital to the avoidance of big swings in economic activity, with all the damage they create. But in the 20 years from the early 1970s, the UK suffered extreme volatility of money supply growth and three pronounced boom-bust cycles. The characteristic pattern in the upswing was that an easing of monetary policy (with a cut in interest rates and measures of financial liberalization) was followed by an increase in money growth and a phase of buoyancy in asset markets, notably in housing, commercial property and the stock market. The next stage was an upturn in "the real economy" with higher spending and more employment. But excess demand resulted in over-heating and rises in inflation. Inflation continued moving upwards until an increase in interest rates checked the economy. In the downturn the process went into reverse. Money supply growth declined, asset prices fell (or at any rate stopped rising), spending weakened and employment dropped.

Table 1: Growth of M4: average rates and variability, 1964 - 2005

	M4 growth, % annual growth	
	Average	Standard deviation
1964 Q2 to 1971 Q2	9.0	2.5
1971 Q3 to 1992 Q4	14.3	4.0
1993 Q1 to 2005 Q4	7.7	2.5

Table relates to quarterly data

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By mid - 2006, monetary data "playing with fire"

The sorry sequence of booms and busts, which caused worry and pain to millions of people, ought to have persuaded policy-makers of the overriding need to stabilize the rate of money supply growth at a low, non-inflationary rate. In the 13 years from the start of 1993 to the end of 2005, money growth was indeed moderate on average, and was marked by far less turbulence than in the preceding 20 years, as Table 1 shows. (The average growth rate halved between the two periods, while the standard deviation of the growth rate dropped sharply.) Inflation was low and impressively stable in the 13 years to end-2005, and demand and output grew without interruption. However, by mid-2006 the monetary data signalled that, once again, policy-makers were playing with fire. The broadly-defined M4 measure of money went up by 14.0 per cent in the year to the third quarter of 2006 and continued to advance at a double-digit annual rate in early 2007. Given the UK's history of monetary mismanagement, the Bank of England ought to have paid closer attention to this development and taken restrictive action.[1]

Money in the latest cycle

Instead, the Bank's publications and speeches from members of the Monetary Policy Committee more or less ignored the high rate of money growth.

Money supply growth has been accommodated

As in other cycles, technical complications arising from financial innovation clouded interpretation of the numbers. In a misguided effort to bypass the Basel rules on their capital requirements, banks had set up artificial vehicles (usually known as "conduits", but with arcane variations) into which they channelled business. Conduits were funded partly by issues of securities, many to other banks, and partly by inter-bank loans, including loans from their parents. They should not have been regarded as standalone financial institutions and were really quasi-banks, with inter-bank loans on the liabilities side of their balance sheets and inter-bank deposits on the assets side. A long-standing convention is that inter-bank deposits are not included in money supply measures, because they are not held by genuine non-bank agents and so have no bearing on the decisions that such agents take. (As we shall soon see, it is these decisions that affect spending and investment portfolios, and matter to macroeconomic outcomes.) However, the conduits' bank deposits were and still are deemed to belong to non-bank financial institutions, and so are included in the official M4 number. Over the last three years, they have given a misleading impression by exaggerating the growth rate of the money supply, properly understood.

Anyhow, it is a simple enough exercise for the Bank of England's statisticians to identify the conduits' alleged "money holdings" and to strip them out of the total. The result is shown on p. 11 of its November 2008 *Inflation Report*, which contains a chart of broad money growth, excluding entities called "intermediate OFCs" (i.e.,

1. Is this said with the benefit of hindsight? In July 2006, the author started to organize a letter, which was eventually signed by nine monetary economists and appeared in the *Financial Times* on September 27, expressing concern about the inflationary consequences of the then high rate of money supply growth. On September 3, 2006, he wrote an article for *The Sunday Telegraph*, again emphasizing the dangers of high money growth. This anticipated by two years the rise in consumer price inflation to over 5 per cent in autumn 2008.

Late - 2008, money supply static - or falling

the conduits mostly). In 2006 and early 2007, the annual growth rate of this money measure was between 12 and 14 per cent; by late 2008, it had slumped to under 4 per cent. Although the data are not yet finalized, it seems likely that in the second half of 2008 the quantity of money was either static or actually falling.

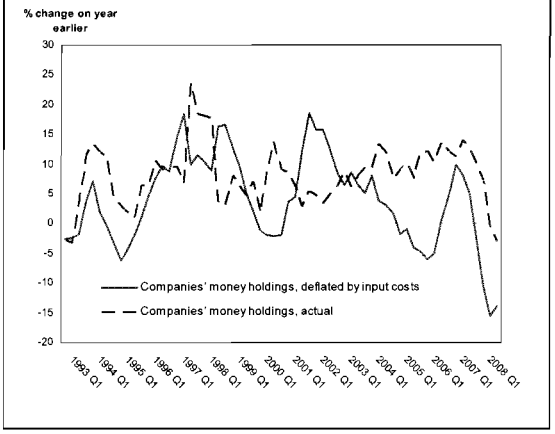
These data constitute a severe indictment of the UK's policy-makers, particularly of the Bank of England and the members of the Monetary Policy Committee. Although recent history gave them a clear warning to avoid large swings in money growth at all costs, broad money lurched from a double-digit annual rate of increase to outright decline in little more than 18 months. Many other influences on the violent swing in business conditions can no doubt be identified, but here was the most compelling.

The corporate liquidity squeeze

Trouble is particularly obvious in the corporate sector. The Bank of England compiles separate monetary data for the three parts of the private sector, households, companies and financial institutions, and these provide powerful insights into behaviour. From the recession of the early 1990s until 2008, companies' money holdings increased in every twelve-month period. But in 2008, that came to an end. In the year to November 2008, company money holdings went down by 6 per cent. Indeed, the decline was concentrated in the final six months of that period, when the annualised rate of fall was 9 per cent. The financial pressures on British companies were intensified in the spring and summer of 2008, by increases in raw material and fuel costs, and especially by a leap in the oil price to $140 a barrel which affected the entire energy complex (including gas and coal prices, and electricity costs). Chart 1 shows two series, the annual change in companies' money holdings and the annual change in the same series deflated by input costs (as measured by an index of raw material and fuel costs in manufacturing). In the middle of 2008, the cost-deflated series showed falls of 15 per cent, signifying the most savage squeeze on company liquidity since the mid-1970s.

Savage squeeze on corporate liquidity . . .

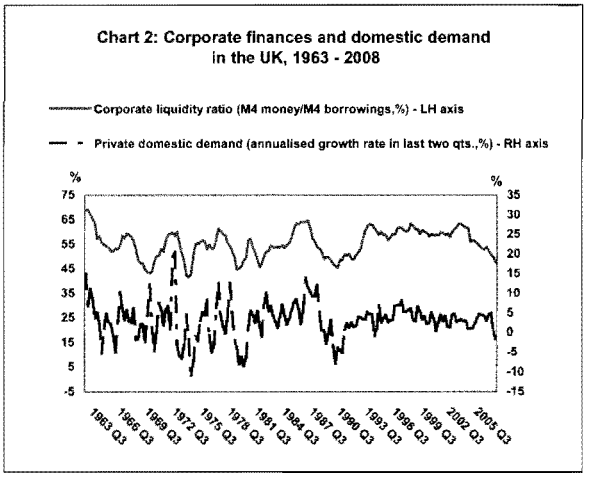
Chart 1: The squeeze on British companies' money holdings



Most observers of the financial scene accept there are relationships between the change in the quantity of money on the one hand and inflation or deflation on the other, and also between movements in real money and real economic activity. But they then ask "how?". In the jargon, "what is the transmission mechanism?". The plight of the British corporate sector in 2008 provided a clear and simple illustration. Every company has to have some money in the bank in order to pay its bills, and so watches closely the size of its bank deposits relative both to future outgoings and debts. No company can forecast precisely what its cash flow will be over the next month, three months or six months, but every businessman must think forward and frame a budget of some sort. If cash inflow is less than expected, the bank balance is lower than budget, and probably lower than agreed with the bank manager. That may be acceptable for a month or two, but – when shortfalls are recorded repeatedly and on a sizeable scale – there has to be a response. If the bank balance falls far beneath plan, the company and its bank may have a discussion, and usually agree that action must be taken to keep the situation under control. That action may include the sale of stocks (raw materials, finished goods and so on), buildings, land and subsidiaries. Of course, if every company in the land is "short of cash" (i.e., their bank deposits are "too low"), they all want to sell stocks, buildings, land and subsidiaries, with the inevitable result that the values of these assets decline. Once the slide in asset values hits sales and output, employment is next in the firing line.

This is exactly what was happening to the British economy in late 2008.

Most companies have both bank deposits and bank borrowings, and monitor the ratio of their deposits to their borrowings in managing their businesses. Chart 2 below shows the relationship between what might be termed "companies' liquidity ratio" (i.e., the ratio of their bank deposits to bank borrowings, in sterling) and the change in real private sector domestic demand since 1964. As might be expected from the chart, the relationship does meet standard tests of statistical significance. (See Box 1.) The relationship will be used later in this paper to criticise UK officialdom's recent pressure on banks "to lend more". It will be shown that, on the contrary, a return to financial strength requires that companies add to their deposits and keep their borrowings under control.



Box 1: Relationship between corporate liquidity and domestic demand

y variable is % change, at an annualised rate, in private sector domestic demand in last two quarters

x variable is % ratio of industrial and commercial companies' M4 money to their bank borrowings

y = -20.20 + 0.42 x

The relationship is unlagged, i.e., y for two quarters to Q4 2002 is regressed on the value of x for Q4 2002.

r^2	0.25
Standard error of equation	4.20
t statistic of regression coefficient	7.60
Standard error of regression coefficient	0.06

2. The need to raise money growth in the short term

What is "money"?

Chapter 1 showed how important fluctuations in money growth can be to the British economy. But – before exploring the implications of that statement for policy in Chapters 3 and 4 – it is necessary to pin down basic points of definition and usage. In particular, the concept of "money" is awkward and needs to be clarified. Of course, people can use words in any way they wish, as long as they explain what they are doing. But in economics the term "money" has a fairly precise meaning which is respected throughout this pamphlet. The reader must be warned against two misunderstandings.

Money and credit must not be confused

The first is to confuse "money" and "credit". The phrases "the quantity of money" and "the money supply" do generally refer to the same thing, and tend to be used interchangeably. Unfortunately, when someone says "the money supply", there is a temptation to think that something is being "supplied", presumably by the banks. Indeed, the notion of "money being supplied by a bank" sounds like a loan being extended by a bank manager. An apparent connotation is that "the money supply" is equivalent to "bank lending".

This chain of thinking about the definition of money is slipshod and wrong. The phrases "the quantity of money" and "the money supply" refer to those assets that can be used to make payments. In a modern economy, there are three such assets;

coin, notes and bank deposits. Nowadays, coin is so trivial that it is commonly bracketed with notes in "notes and coin", and together they are labelled "cash". Cash has the attribute that it has been given legal-tender status by the government and so cannot be refused as a means of payment. Bank deposits are money because an instruction to pay against a deposit (by cheque, standing order or whatever) is, strictly speaking, an instruction to move cash to someone else's account. As long as banks can carry out such instructions, bank deposits are "as good as cash" in the making of payments and so are money.

A bank loan is *not* money. Full stop. True enough, when a bank extends a new loan, it adds a sum to the borrower's deposit and the borrower can make payments against the deposit. But it must be emphasized that the *payment is against a deposit*, just like the millions of transactions being carried out every day against bank deposits where no new loan is involved. Money consists of those assets that serve as means of payment; a loan is not a means of payment. Bank deposits are liabilities that the banks owe to us, the money-holders; bank loans are sums that borrowers owe to the banks and are banks' assets. Bank deposits are different from bank loans, and money is different from credit.

Bank deposits main form of money nowadays

The second misunderstanding, which has its roots in the Currency School of the early 19th century, is the notion that cash is the only genuine money. An extension of this view is that bank deposits are not really money, since they have validity in payment solely because of their convertibility into notes. The objection here is that, in many contexts, cash is more inconvenient and expensive to use as a means of payment than deposits, and deposits are preferred to cash as a means of holding wealth. (Imagine the cost and bother of having to pay for a house or a sequence of share transactions in cash, with the bundling and weighing of notes, moving them from place to place, arranging for security, and so on.)

In fact, bank deposits are much larger than cash in terms of both holdings and payments. At the middle of 2008, holdings of notes and coin in the UK (by people and companies, but excluding banks' own cash) amounted to £43.2 billion, whereas their bank deposits were almost £1,740 billion or roughly 40 times larger. Data on the relative size of transactions in cash and across bank deposits are more elusive, but – according to a 1998 Bank of England paper – the value of "cash turnover for individuals" in 1997 was £238 billion. By contrast, bank clearings totalled over £36,000 billion, which were therefore about 150 times higher than cash transactions. (If the value of transactions in non-bank clearing systems – such as those for securities and commodities – were included, non-cash transactions would exceed cash transactions several thousand-fold.)

Bank deposits are an overwhelmingly more significant form of money in the economic life of the United Kingdom, and indeed of all advanced industrial nations, than notes and coin.

How money affects national income and wealth

To summarize the argument so far, money must be distinguished from credit and bank deposits are the main form of money in today's circumstances.

What does standard economic theory say about the relationship between money, understood in this way, and other economic variables? In all serious textbooks, the centrality of money to macroeconomic outcomes is represented by an equation which can be expressed in words as follows:

- The nominal values of national income and wealth are in equilibrium only when the demand to hold money balances is equal to the quantity of such balances actually in existence.

The equation is what economists call "an equilibrium condition". The equilibrium condition may not hold at all times. Consider someone who has just won the National Lottery. He or she plainly has more money than was formerly the case (in "equilibrium"), and it will take at least a few months – perhaps even a few years – before most of the money has left his or her bank deposit, and been reflected in new high equilibrium levels of expenditure, housing wealth, unit trusts, golf clubs, jewellery and so on. In that period, the equilibrium monetary condition does not hold for this particular individual. Indeed, the equilibrium condition may be violated for all individuals and companies in the UK because of sudden and large changes in the quantity of money or its rate of growth. (Such changes were all too familiar in the boom-bust cycles of the 1970s and 1980s, as discussed in Chapter 1.) Two statements can therefore be made:

- Because the demand to hold money is *not* equal to the quantity of such balances in existence, national income and wealth are not in equilibrium,

And, more controversially:

- Strong forces will exist in the economy to change the values of asset prices, expenditure and national income so that the demand to hold money is again equal to the actual quantity of money.

The power of these forces was illustrated in Chapter 1 by the discussion of how companies have responded to the recent brutal squeeze on their own money holdings. The slump in money growth from a double-digit annual rate in early 2007 to virtual stagnation in late 2008 transformed the UK's economic situation. Whereas in early 2007 many people and companies were, to a limited degree, like the person who had just won the National Lottery and had "excess money balances", by late 2008 the money had gone and they suffered from "a shortage of money balances".

If the economy is to recover in 2009, the rate of money growth needs to increase.

". . . the rate of money growth needs to increase"

As money is dominated by bank deposits, this is tantamount to saying "the rate of growth of bank deposits needs to be higher in 2009 than it was in 2008". More specifically, "the apparent halt to the growth of bank deposits in mid-2008 needs to be replaced by a resumption in the growth of bank deposits in 2009". To avoid misunderstanding, it should be emphasized that this is not a recommendation for hell-for-leather monetary expansion. Excessive monetary growth in 2006 and early 2007 was the fundamental cause of the unwelcome rise in inflation in 2008 and the current boom-bust cycle. Policy-makers must try to prevent a return to a *trend* double-digit rate of growth of bank deposits. Raising the annual growth rate of bank deposits towards, say, 5 per cent over the medium term would be sensible and prudent. But – given the severity of the downturn now under way – a case might be made for administering a sudden, once-for-all injection into the economy of 5 per cent more money. Arguably, an injection along these lines would mitigate the financial pressures on companies and check the recessionary tendencies in the economy, without risking a later rise in inflation.

How is the desired upturn in money growth to be achieved? What can policy-makers do to help promote a resumption of growth in bank deposits at a moderate but positive rate?

3. How is more money to be created? The strategy

Where does money come from? It seems such a naïve question. In fact, it is a good and important question, and the answer may initially come as a great surprise. In a modern economy, an economy which has abandoned a commodity basis for its monetary unit, both the main forms of money come "out of thin air".

Money from heaven . . .

Two types of money: cash and bank deposits

Nowadays, it has value because legislation has been passed saying that notes issued by the central bank are legal tender and must be accepted in the settlement of debts. New cash can be created very easily, by the central bank printing notes and using them to acquire assets, such as government securities. The notes are liabilities of the central bank, while the government securities are its assets. This may sound like magic, but the new assets are exactly matched by new liabilities. In a net sense, nothing has been added to the economy. In terms of value, assets and liabilities are identical on any balance sheet. However, the creation of new cash and the expansion of the central bank's balance sheet can have hugely powerful effects on the economy. The potency of

"money printing" as a macroeconomic weapon is not in doubt, since all hyperinflations have been caused by over-issuance of cash by the central bank. However, an appeal to the printing presses as the answer to deflation would be rather drastic. The focus in this and the next chapter is on the second form of money, bank deposits, and the commercial banking system. (We shall return to the central bank in Chapter 6.)

How, then, are bank deposits created? The answer is that – like the central bank with cash – commercial banks add identical amounts to both sides of their balance sheet. Suppose, for example, that a small company wants to borrow, say, £100,000 from its bank. The bank does not have a big pot of bank notes, amounting to £100,000, in its vaults which it somehow transforms into an entry on its balance sheet. Instead it makes two offsetting book entries, one for £100,000 in the company's deposit (i.e., extra liabilities) and another for £100,000 to a new loan account (i.e., exactly equal extra assets). The company can now write cheques against the new £100,000 deposit. The resulting sums are debited from the £100,000 sum, and credited to the bank accounts of other people and companies. These other people and companies in turn use the balances in their accounts to make future payments. Commercial banks create new deposits by expanding their assets, and adding identical amounts to assets and liabilities.

The creation of new deposits – the dominant form of money in contemporary circumstances – is as simple as that. In a well-known phrase, bank deposits are "fountain-pen money".

In qualification, the process of money creation by commercial banks is subject to two key constraints, namely the adequacy of their cash (relative to deposit liabilities) and capital (relative to the risks in their assets).[1] The effects of the cash and capital constraints on banks' balance sheets are vitally important topics in the real world, and have been prominent in recent debates on banking policy in the leading industrial nations. However, to simplify exposition, it is assumed that the constraints are not binding and that banks are able to create deposit liabilities by the addition of new assets in the usual way. What assets are potentially available? (As we shall see, the constraints are anyhow unlikely to matter much in the proposal soon to be made.)

Assets to match the extra deposits

Two kinds of assets need to be mentioned and three types of borrower are relevant. The two kinds of assets are loans (usually resulting from a particular negotiation with

1. The need for cash is obvious enough, since all deposits can in principle be converted into cash. Strictly speaking, when the company borrowing the £100,000 writes out a cheque to a supplier, it is instructing its bank to pay cash to the supplier. The supplier could either deposit the cheque in its own bank account (as we assumed in the text) or ask the borrower company's bank for the full £100,000 in cash on the nail. In practice, nowadays, such behaviour is unusual, with most payments being across bank accounts via the clearing system. However, individual banks can be caught short at the bank clearing, if their customers are making net payments to other banks' customers, and so need to maintain a cash balance at the central bank in addition to their vault cash. The need for capital is more complex, but of course banks need a buffer against the risk of bad loans and other losses.

the borrower concerned and intended to stay on bank balance sheets until repaid) and securities (usually purchased in a financial market and sale-able in that market before redemption), while the three types of borrower are the public sector, the overseas sector and the private non-bank sector. The overseas sector is of great importance in the UK's situation, because London has traditionally been the centre of the international banking system and much business is done in lending, both in sterling and other currencies, to foreign companies. However, discussion of UK banks' overseas assets would complicate matters needlessly. The analysis will, therefore, concentrate on two types of domestic borrower, the UK public and private sectors, and their respective roles.

In the last 20 years, UK banks' assets have been dominated by claims on the private sector. Indeed, such claims have been between 94 and 100 per cent of their UK assets for all of this 20-year period, and the bulk of the claims have been loans rather than securities. The similarity of the levels of UK banks' deposits (which are roughly 90 per cent or more of their liabilities) and their loans to the private sector may be part of the explanation for some economists' tendency to regard "money" and "credit" as equivalent, and to believe that, when they are talking about "money", they are referring to "bank credit to the private sector". This is a mistake.

Banks sometimes hold large claims on government

The easiest way to demonstrate that it is a mistake is to carry out comparisons across time and space.

In the UK's own past, claims on government have preponderated in banks' assets over extended periods running into decades. This was particularly true in the 20th century, when heavy military expenditure in two world wars was financed largely from the banks. Indeed, in 1945, banks' claims on the public sector were over 80 per cent of their total assets and lending to the private sector was a relatively minor part of their business. After the nationalisations under Attlee's Labour government from 1945 to 1951 enlarged an already high national debt, the banks remained major holders of that debt throughout the 1950s and 1960s. As late as 1970, the banks' claims on the UK public sector were over 70 per cent of their total domestic claims. It needs to be emphasized that for much of the 25-year period from 1945 to 1970, the government imposed restrictions on bank lending to the private sector, sometimes by clampdowns on all new loans, in an inflationary macroeconomic context. Inflation persisted despite the restraint over lending to the private sector, because government borrowing from the banks caused continued growth in the quantity of money (i.e., of bank deposits).

The watershed between the characteristic post-War structure of UK banks' balance sheets, in which public debt overshadowed lending to the private sector, came with banking

Banking reforms in 1971 . . .

reforms in September 1971 known as "Competition and Credit Control". The aim of these reforms was to end restrictions on lending to the private sector as part of a wider move to a more competitive financial system. As a result, bank lending to the private sector grew faster than banks total domestic assets with few interruptions over the next 35 years. By 1988, towards the end of the Thatcher premiership, the ratio of banks' claims on the public sector to their total domestic assets had dropped to under 3 per cent. This was an astonishing change compared with the 70 per cent ratio in 1970, a mere 18 years earlier.

What about comparisons over space?

An almost universal pattern since the late 1980s has been for governments to limit their budget deficits, to lower the ratio of public debt to gross domestic product and to liberalise their financial systems. In most countries, one by-product of these trends has been for banks' lending to the private sector to rise faster than their total assets, just as in the UK. However, the pattern has not been uniform in scale, and some countries have bucked the trend. For example, Japan's public debt has increased relative to national income over the last 20 years, while Italy has been unable significantly to lower its debt/GDP ratio. Whereas in the early 1980s, Japan's banks held only limited claims on their government, such claims now amount to about a quarter of total assets. Since it joined the European single currency area in 1999, Italy has tried to limit the extent of government borrowing from its banking system. Nevertheless, at the end of 2007, its principal monetary institutions (mostly banks) had extended loans to central and local government of € 223.1 billion and held government securities to the value of € 164.7 billion, compared with total assets of € 2,870.5 billion.[2] In other words, Italian banks' claims on government amounted to almost 14 per cent of their total assets.

Money created when banks lend to government

Government borrowing from banks creates new deposits

The main point here is straightforward. In the past, British banks had vast claims on the state, while today banking systems in many other countries continue to hold a significant chunk of their assets in the form of government securities and loans to government. Our own government can therefore without doubt borrow from the UK banking system. Indeed, if need be it can borrow heavily. Further, the extra claims on government on the assets side of the balance sheet would be matched, largely, by extra deposits on the liabilities side. Government borrowing from the banks could create new deposits, in just the same way as bank lending to the private sector or any other kind of bank asset acquisition. *It is not necessary for the banks to lend more to the private sector for the quantity of money to increase.* The quantity of money can increase if the government replaces the private sector and becomes a significant borrower from the banking system in its own right.

2. Both the Japanese and Italian information is drawn from the International Monetary Fund's *International Financial Statistics* database.

This is the punch line of the present chapter. Chapter 1 showed that a sharp drop in money growth was a key causal influence on the slide into recession in late 2008; Chapter 2 argued that a higher rate of growth in the quantity of money was therefore needed to promote recovery, and this was quantified and made more specific as an annual rate of growth of bank deposits of about 5 per cent. Chapter 3 has now established that, even if banks' private sector customers are repaying their loans, a higher rate of growth of bank deposits can be achieved if the government borrows on a sufficient scale from the banks.

No solvency or liquidity constraints on bank lending to government

To wind up the chapter, does anything need to be said about the two constraints on bank balance sheets, cash and capital – or, in more formal terminology, their "liquidity" and "solvency"?

When it is the government that is borrowing from the banks, neither constraint is of much significance. If the banks expand their claims on the government by 10 per cent of their previous balance sheet totals, they need 10 per cent extra cash (both vault cash and their reserve at the Bank of England) to prevent possible shortfalls in their the daily inter-bank settlement. (Note that they need 10 per cent extra cash, not cash equal to 10 per cent of extra assets. If cash were equal to 1 per cent of assets beforehand, the implied requirement is cash equal to 0.1 per cent of total original assets.) But the Bank of England could lend that amount to the banks, adding the new loans to assets and the banks' new cash reserves to liabilities in the usual manner. Alternatively and perhaps more plausibly, the government could itself borrow from the central bank, increasing its assets and liabilities. To the extent that the central bank's extra liabilities are cash assets in the banks' hands, the liquidity constraint has been removed. The capital constraint is even less of a concern. The British government cannot go bust within its own borders because it is the only institution in a modern society that has the power to tax. But banks need capital only against the risk that its debtors cannot repay. Since the government always can repay in sterling, banks do not need to allocate capital against default risk in this case.[3] Solvency is hardly an issue when they expand by lending to public sector borrowers.

3. Bank managements ought to hold capital against possible changes in the value of long-dated government bonds, if their banks hold such bonds. But banks do not usually hold long-dated government bonds. See Chapter 5 for further discussion.

4. How is more money to be created? The mechanics

Easy for government to create money

The punch line of the last chapter was that the growth of deposits, the main form of money in a modern economy, can occur as a result of government borrowing from the banking system. Further, the process of money manufacture is in essence very simple. Since the banks are hardly constrained by either cash or capital when they acquire claims on the public sector, money can be created by the simultaneous addition of an identical sum to banks' assets (a new claim on the government) and liabilities (a new government deposit). In principle this addition could be any figure the government and its policy-makers feel is appropriate for the economic situation.

Can a more specific plan be proposed?

How a £100b. loan facility to the government could add 5% to M4

At the time of writing (January 2009), British companies – particularly small- and medium-sized companies – are suffering from a severe cash squeeze. Companies are holding up payments to each other in order to protect their own bank balances, while insurance companies are demanding high premiums for guaranteeing inter-company credit. Each individual company believes that, by clinging on to the money in its bank deposit, it is improving its own position. There is a natural temptation to believe that, if all companies are tight-fisted and cautious in this way, their aggregate financial position will improve. But that is not so. If one company defers payments and hangs onto its cash, that does not increase the aggregate amount of money in the economy. The aggregate amount of bank deposits in the economy must, by definition, be equal to the total deposit liabilities of the banking system. That total is determined by other considerations altogether, particularly the banks' preparedness and capacity to add assets. If banks are shrinking their assets and companies defer payments to each other, the result is certain to be an appalling recession.

Suppose – and this is purely a supposition – that an increase in bank deposits of 5 per cent of the existing total would significantly ease the corporate liquidity squeeze and bring the economy closer to cyclical normality. Suppose, in other words, that a 5 per cent increase to the quantity of money would go a long way to ending the recession. (This increase might be administered gradually or suddenly, and the difference between the two approaches will be discussed later in the chapter.) At present, the quantity of money, on the broadly-defined M4 measure, which includes virtually all bank and building society deposits, is approaching £2,000b, of which notes and

coin are about 2 ½ per cent of the total. Let us, for ease of exposition, assume that the quantity of money is £2,000b, and ignore the notes and coin which are trivial anyway. Then, to add 5 per cent to bank deposits the government needs to borrow £100b from the banks by the usual procedure of adding an identical sum to assets and liabilities. In the first instance, the £100b is credited to its deposits with the banks.

A minor definitional complication has now to be noted, but need not long detain us. As the government can command resources at will from taxpayers, and so is quite different from any private sector agent, the government's money holdings are unlikely to have any meaningful effect on its behaviour. Government deposits are therefore excluded from the M4 money measure and indeed all money measures. But, if and when the government spends the £100b sum in its own balances, the bank deposits of private sector individuals and companies are increased. Indeed, if the government spent £100b from its balances in one fell swoop, the quantity of money would then jump by the desired 5 per cent. The guts of the financial operations being recommended here are as straightforward as that. However, there would be practical and logistical difficulties in the real world, some of which arise from the need to respect the profit motivations of privately-owned banks and other investors. These difficulties may be discussed under three headings:

- the need to persuade banks voluntarily to hold £100b of claims on the government;
- the purposes for which the government uses its £100b of newly-created deposits; and
- the reconciliation of the proposal with the UK's current institutional arrangements for public finance.

Our conclusion will be that – despite the complications – policy-makers can organize a sudden once-for-all 5 per cent increase in the quantity of money if that is what they want to do.

What sort of claims on the government do banks like to hold?

It is all very well to advocate that the government should borrow from banks in order to create more money. But why should banks want to lend to the government? It takes two to tango. In a free society, where the banks are not subject to government dictation and can choose the composition of their assets, banks' acquisition of claims on the government should be worthwhile and profitable for them as well as serving the wider purposes of public policy. How do we ensure that?

a. Treasury Deposit Receipts and Treasury bills

The crudest operation is that just described, in which the banks lend £100b to the government, and £100b is credited to newly-created government deposits. As in

the Second World War, the government could pay for the deposits by handing over "Treasury Deposit Receipts" to the banks. The receipts, the TDRs, would then appear as £100b on the assets side of their balance sheets. (In 1945, TDRs amounted to 40 per cent of the UK clearing banks' assets.[1])But the banks might not be altogether happy with these arrangements. What interest rate would they receive on the "deposit receipts"? Could the TDRs be sold to other banks, including the Bank of England? And would there be any need to hold capital against them?

In the Second World War, the interest rate on TDRs was 1 1/8 per cent a year, a figure which was reduced to 5/8 per cent in 1946. As the banks did not at that time have to pay interest on the bulk of their deposits, an interest rate as low as this would have given them a profit as long as the cost of collecting and administering deposits was less than ½ per cent of assets. Since such costs were in fact rather more than ½ per cent of assets, TDRs were not a remunerative asset for the banks to hold. Banks also disliked official restrictions on their ability to trade TDRs between themselves or with non-banks. Although they were virtually risk-free and so needed no capital, TDRs were, therefore, unpopular with the UK banking system. Between 1946 and 1952, TDRs were gradually replaced on bank balance sheets by Treasury bills, which were also claims on government, but carried a higher interest rate and were saleable in a recognised secondary market. Because this secondary market was efficient and extensive, and included the Bank of England, Treasury bills could be bought and sold easily, and were banks' most liquid asset after cash itself. Today, banks are generally prepared to hold Treasury bills, even if the yield is little different (or perhaps even slightly beneath) their cost of funds, because of the bills' convenience in their own cash management operations.

b. A technical argument

Two important characteristics of interest-paying securities now need to be emphasized. To explain these characteristics a slightly technical argument has to be developed. (This can be skipped by readers, if they are prepared to accept the conclusions on trust.)

Market forces ensure that the expected returns on all interest-paying securities tend to be similar after allowing for risk. If expected returns vary, investors buy the attractive, relatively high-return securities and sell the unattractive, relatively low-return securities, altering prices until the expected returns move closer together. Attempts to equalize returns, therefore, have a major bearing on the market price of *fixed-interest* securities which had different coupons *at issue*.

Suppose, for illustration, that we are comparing fixed-interest securities which will never have their principal repaid. Suppose, in other words, that they are like the UK government's "undated securities", the real-world Consols and War Loan. Suppose, further, that the prevailing yield on these securities is 5 per cent, but that one stock (a hypothetical "Consols" stock) pays a coupon equal to 2 ½ per cent on £100 nominal held by investors and that another stock ("War Loan") pays a coupon of 10 per cent

1. Edward Nevin and E. W. Davis *The London Clearing Banks* (London: Elek Books, 1970), p. 153.

also on £100 nominal. (In other words, at issue investors paid £100 for the income stream of £2 ½ a year offered by "Consols", whereas with "War Loan" they paid £100 for an income stream of £10 a year. If this seems mad, remember that "Consols" and "War Loan" may have had quite different issue dates, say, 1944 for "Consols" and 1917 for "War Loan".) What market prices of "Consols" and "War Loan" equilibrate the yield at 5 per cent today? The answer is that the "Consols" price has to be 50 (since 2 ½ divided by 50 multiplied by 100 is 5 per cent), while "War Loan" has to be 200 (10 divided by 200 multiplied by 100 is again 5 per cent). The price variation between the two government securities – both free from default risk – is clearly drastic.

Now, by contrast, consider the price implications of the same requirement to equalize expected yields for two government obligations also paying 2 ½ per cent and 10 per cent coupons per £100 nominal, but due to redeem only one year from now. (We may call them Treasury 2 1/2% and Treasury 10%.) At a price of 97 ½, £100 nominal of the Treasury 2 ½% stock will yield 5 per cent, because it has income of £2 ½ and a £2 ½ uplift at redemption; at a price of £105, the Treasury 10% stock will also yield 5 per cent, because it has the income of £10 offset by a £5 loss at redemption. As with the example of the undated stocks, the prices of the 2 ½ and 10 per cent coupon stocks vary in the one-year-to-redemption area, but by much less than with the undated stocks.

What are the two important characteristics of interest-paying securities implied by the discussion?

The first is that the price volatility of fixed-interest securities is greater, the further they are from redemption. Banks are averse to holding any assets with an unpredictable price that may vary significantly from par. It follows that banks tend to restrict their holdings of government securities to the very short end. On the whole, they dislike government securities with a residual life of more than about five years, despite the virtual certainty that the government will repay the principal, because a sharp price decline before redemption (due to a jump in market yields) may damage profits and reduce capital. Government securities with a redemption date in, say, 2032 will not be bought by banks, except in very exceptional circumstances and then typically only briefly for speculative purposes. (The Basel rules on capital adequacy say that no capital needs to be held against government securities. But banks' own managements regard long-dated government securities as risky and, if they appear on their balance sheets, as absorbing capital.)

Secondly, a distinction between fixed-interest and floating-rate securities needs to be understood. The price volatility that deters bank holding of long-dated government securities applies only to fixed-interest paper. Governments can also issue securities where the interest coupon varies with the going rate of interest. The variability of the coupon implies that the interest return to the investor (expressed as a per cent of £100 nominal of stock held) is similar to the interest rate prevailing in the market. A variable-rate security ought, therefore, always to trade close to par. One result is that variable-rate government securities can be attractive to the banks, even if the period to redemption is ten years or more, as long as the running yield is above banks' cost of funds.

c. So what kinds of government securities do banks want to hold?

If policy-makers want the banks to hold more government debt on a voluntary basis, they must design and organize new issues of such debt so that it is attractive to the banks. A clear message from the argument just set out is that, in current circumstances, policy-makers must ensure that a sufficient quantity of any newly-issued *fixed-interest* stock has only a few years to redemption. Treasury bills, which usually have a life of only three months in the UK, are obviously appropriate. So, in early 2009, are government securities due to be redeemed before 2014 or, at the outside, say, 2016.

But banks would also be prepared to hold variable-rate government paper, perhaps with a residual life running into the 2020s or later, as long as the margin over the cost of funds were adequate. Banks are handicapped relative to other investors in government debt by their susceptibility to capital losses, but they benefit from the effect of their high gearing on returns on capital. Short-dated variable-rate government paper has virtually no risks – of either default or capital value fluctuation – to a bank holding it. Suppose that a bank's management regards as sufficient (to anticipate the tiny risks) a capital allocation equal to a mere 2 per cent of the value of the short-dated variable-rate government paper in its portfolio. Then, if the return over the cost of funds is a mere 10 basis points, the hypothetical return on the bank's capital allocation is 5 per cent. (The 10 basis points, i.e., 0.2 per cent, is 5 per cent of 2 per cent.)

Surely the government could come to some arrangement with the banks in which it could issue, virtually at will, a large quantity (say, £50b.) of a multi-year floating-rate Treasury securities carrying a coupon that was, say, 10 basis points over the banks' cost of funds. (In normal circumstances, the cost of funds would be approximated by sterling inter-bank rate, but at the time of writing these have been out of kilter with retail deposit rates for about 18 months.) The 10-basis-point margin implies that the FRNs would not be very profitable assets as far as the banks are concerned, but there would be hardly any risk of loss. FRNs with a reasonable interest margin would be less objectionable to the banks than Treasury Deposit Receipts had become by the early 1950s. Crucially, the arrangement would give the government the ability to create new money almost at the drop of a hat. In the kind of situation now apparently emerging (in which banks' private sector customers want to repay debt and banks are worried about customers' credit-worthiness), officialdom needs a mechanism to create money quickly and on a large scale.[2]

It is very important here to anticipate a common confusion. By acquiring claims on the government the banks do *not* need to reduce their lending to the private sector.

2. Of course, the government could borrow from the Bank of England by a large expansion in Ways and Means Advances. If the government spent the proceeds of a loan from the Bank of England on supplies from non-banks (or on transfer payments with non-banks as beneficiaries), the effect would be to expand *both* the monetary base *and* the quantity of deposits held by non-banks. Like central bank purchases of assets from non-banks (discussed in Chapter 6), government borrowing from the central bank is very stimulatory and – if taken too far – it is inflationary. It is rumoured (January 2009) that Mervyn King, the present Governor of the Bank of England, has resisted "quantitative easing", perhaps because he has understood quantitative easing to be direct government borrowing from the central bank. However, government borrowing from the central bank is a valid weapon against a serious debt deflation. If an outright deflation is destroying tens of thousands of jobs a month, why not do everything possible to stop it? Regular monitoring of money supply numbers should be sufficient to warn when the borrowing from the central bank has become excessive. At any rate, government borrowing from the commercial banks, as proposed here, ought to be less objectionable to a central bank governor.

As already discussed, banks grow their balance sheets by adding identical amounts to their assets and liabilities, with the only constraints being the adequacy of cash and capital. Further, again as already discussed, these two constraints hardly apply with government financing of its budget deficit because of the special nature of government debt. (Do we need to say again that such debt, when in sterling, is free from default risk?) So extra claims on government can be matched entirely by extra deposit liabilities. When a government borrows from the banking system, there is no "crowding-out" of lending to the private sector.

None of the discussion so far should be understood as challenging the principles that, in the long run, banks must be free to choose assets according to their own priorities and that they ought to receive an acceptable return on capital. A great advantage of traditional "open market operations", the operations in which the central bank (and sometimes the government) transact with the commercial banks, is that they are "open" (i.e., with a number of institutions all competing in a transparent market setting) and governed by "the market" (i.e., with the free play of supply and demand). There is room for debate about how close to a deflationary emergency the UK economy finds itself in early 2009. If there is indeed an emergency, the banks themselves ought to be willing to lend on a very low-return basis to the government, by taking up enormous issues of Treasury bills, short-dated gilts, low-risk FRNs and so on. By spending the balance in its new deposit, the government can then create more money held in the private sector. As we shall see in the next chapter, the banks will benefit at a further remove, as the extra money in the economy boosts asset prices and strengthens borrowers' financial positions.

How would the government use its £100b?

We take it for granted that, by suitable adjustment of the terms of its debt issues and negotiations with the banks, the government can establish a new bank deposit for itself of £100b at any time. The government could use this deposit in two main directions:

- it could cover its budget deficit over the next year or so (i.e., for the purchase of goods and services, including capital expenditure, plus its transfer payments to citizens, grants and so on, in its annual budget control totals); or
- it could buy assets from private sector agents in the economy.

Any asset purchase from non-banks would add to the private sector's bank deposits and so have the targeted monetary effect. However, in practice, purchases of assets traditionally in private ownership (such as corporate equity) are controversial in a market economy, since questions arise about the proper boundary between private and state action.[3] The

3. The UK government's nationalization of Northern Rock and Bradford & Bingley in 2008 was effected with legislation which proposed to pay negligible compensation to shareholders, even though both banks had substantial positive book value when they came into public ownership. There were obvious implications for property rights, and indeed the rule of law, which would not be overlooked by potential future investors in the UK banking system.

discussion may instead be restricted to purchases of existing government debt, including the redemption of debt maturing over the coming 12 months.

a. Financing this year's budget deficit and maturing debt

The government, like any organization, has to finance its operations on a day-by-day, month-by-month and year-by-year basis. At first glance, a sensible approach to the question would be to relate its cash position to such operations. In fact, if a serious debt deflation process were to develop in the UK, this would be too timid and limiting. However, it provides a start and helps in thinking about the larger problem. Table 2 below shows how the UK's central government was financed in 2007/8. It had to raise cash to meet the excess of its expenditures over receipts in that financial year, a total known as the "central government net cash requirement", amounting to £32.6b. However, it had also to refinance £29.2b of gilt redemptions, while technical changes in its cash position deducted £4.0b from its overall financing requirement. The net financing requirement was therefore £52.0b.

Table 2: The government's financing arithmetic 2007/8 and 2008/9

£b.

	2007/8	2008/9
CGNCR	32.6	152.9
Gilt redemptions	29.2	18.3
Buy-backs	0.1	0
Planned short-term financing requirement	-4.1	-2.5
Financing requirement	57.8	168.7
Less: National Savings & Investment	5.8	11
Net financing requirement	52.0	157.7
Treasury bills	2.0	14.5
Gilt-edged issuance: Short-dated conventionals	10.1	62.8
Gilt-edged issuance: Medium-dated conventionals	10.0	33.1
Gilt-edged issuance: Long-dated conventionals	23.4	30.5
Gilt-edged issuance: Index-linked	15.0	20
Ways & Means advance from Bank of England	-6.0	-3.2
Other	-2.5	0
Total financing	52.0	157.7

Source: Debt Management Office website

The task of debt management is delegated in the UK to a government agency, the Debt Management Office. In 2007/8, the DMO arranged for the sale of £58.5b of government securities (known as "gilt-edged securities" in the UK), split between:

- long-dated (£23.4b) "conventionals" with their redemption planned more than 15 years from their date of issue;
- medium-dated conventionals (£10.0b) with redemption five to 15 years from issue; and

- index-linked (£15.0b), where investor returns are protected against inflation by adjustment for the increase in retail prices.

It is important for my later argument to notice that none of these securities could have been safely bought by the banking system because none of them were short-dated. Although there were some purchases of government securities by the UK's banks in the 2007/8 year, UK banks' net holdings (i.e., purchases minus sales) contracted. In other words, the effect of the government's financial transactions – as orchestrated by the DMO – were to reduce bank deposits held by private sector agents (i.e., the quantity of money).[4]

If policy-makers had organized a big bank financing for the UK government at the start of the 2007/8 financial year, with £100b in its bank balances in the way suggested above, the central government could have covered both its "net cash requirement" of £32.6b and the £29.2b of gilt redemptions from that £100b *without any issuance of conventional gilt-edged securities (whether short- , medium- or long-dated) or index-linked gilts whatsoever.* Civil servants in the Treasury and other government departments would have had to write out *net* payments to government employees' and suppliers' bank accounts, the bank accounts of pensioners and welfare recipients, and a host of other relevant bank accounts, of £32.6b to match the CGNR, and a further £29.2b to the bank accounts of the former holders of the government debt being redeemed.

If the government had done this, its transactions would have increased the quantity of money in the economy. In fact, the difference between what actually happened (a reduction of about £10b in bank deposits because of the government's financial operations) and what might have happened (an increase of about £60b from the same source) would have amounted to about 5 per cent of bank deposits. The quantity of money would have grown about 5 per cent faster in the period, with major repercussions on macroeconomic outcomes.[5]

Let us now look on to the 2008/9 and later financial years.

Everything changed in 2008/09 . . .

To say that 2008/9 was a calamity for the British economy is understatement. Output, employment and inflation were all disastrously worse than expected, and these setbacks hit the public finances. Whereas in April 2008, the CGNCR was forecast to be £59.3b, the latest number in the government's *Pre-Budget Report* is £152.9b! On top of this, gilt redemptions and technical adjustments add £15.8b and give a total financing requirement of £168.7b. Evidently, if the government had organized its £100b of bank finance at the start of the 2008/9 financial year, all of its deposits could have been absorbed in covering the CGNCR and the flow of gilt redemptions,

4. Given that the economy was quite buoyant in late 2007, the reduction in bank deposits was appropriate for the wider purposes of macroeconomic policy.

5. The relevance of debt management to demand and inflation comes as a surprise to some macroeconomists, but it is well-recognised by monetary specialists. See footnote (10) below for references.

Nothing added to UK bank deposits . . .

and that would have implied a big addition to the quantity of money. Although the 2008/9 year still has some weeks to run at the time of writing (January 2009), it is already clear that the issuance of short-dated government stock will be sharply higher than in 2007/8. In fact, the latest plans are for £62.8b of short-dated conventional issues in 2008/9, higher than any of the other three categories. (Issues of £33.1b of medium-dated and £30.5b of long-dated conventionals, and £20.0b of index-linked issues, were intended by the DMO at the time of the *Pre-Budget Report.*) Unfortunately, in the first three quarters of the 2008/9 financial year, much of the newly-issued short-dated stock seems to have been sold to foreigners or used to finance equity injections into the UK banking system. As a result, by the end of 2008, nothing had been added to bank deposits held by UK private sector agents. This may change in the first quarter of 2009.

. . . but it could be done

What about the future? The latest official estimates for the CGNCR and gilt redemptions over the next four years are set out in Table 3. The key message from this table is that – if policy-makers wished to borrow £100b at the start of each fiscal year from the UK's banks and to use the resulting deposit to increase the quantity of money held by the private sector – it could be easily done. The ongoing budget deficit and the volume of maturing gilts will be so large that a £100b deposit, created by the so-called "stroke-of-the-pen" transactions we have described, could be taken up on every occasion. The conclusion has to be that – even if the government were unambitious, and focussed its debt management operations only on financing the CGNCR and maturing gilts – over time a substantial positive effect on the quantity of money could be easily organized. (But notice that this would not guarantee that money growth was positive overall, because the negative effect of repayments of bank loans by the private sector could exceed the positive effect of the government's debt management activities.)

Table 3: The government's total financing requirement over the next four years

£b.	2009/10	2010/11	2011/12	2012/13
CGNCR projections	126	108	97	80
Gilt redemptions	17	39	38	24
Financing requirement	143	147	135	104

Source: Pre-Budget Report documents on DMO website

6. Expansionary debt management *à outrance*

The analysis so far has shown that the plunge into deficit on the UK's public finances has been so drastic that a £100b-a-year bank borrowing facility would come in quite helpful for whoever is Chancellor of the Exchequer! The facility could be arranged at the start of each financial year and drawn month by month, as the

government's expenditures and maturing debt exceeded its tax revenues. On average, the government's deposits would drop by about £8b a month and the private sector's deposits would increase by (roughly) the same amount, equating to an increase in the quantity of money of almost ½ per cent a month. That would cause money growth to be higher than would otherwise have been the case, helping the financial position of cash-strapped British companies and mitigating the recession. This approach would certainly be worthwhile compared with financing the budget deficit entirely from non-banks. However, the impact of the government's finances and debt management policy on the economy would clearly not be dramatic.

Fortunately, another much more powerful option is available. Here too, the initial step is for the banks to lend £100b to the government, and for £100b to be credited to its deposits with them. But, instead of the government using this balance to finance the CGNCR and maturing debt over a period of years, it would deploy the full £100b in the space of a few weeks (or perhaps a few months) to buy in its own debt *from private sector non-banks.*[6] As a result, these private sector non-banks receive £100b in their bank deposits, and so have extra money. The government takes in £100b of its own long-dated and medium-dated debt, but there is no point holding claims on itself. So the £100b of debt can be cancelled. If the debt is in the form of paper certificates, the certificates could be pulped. (Notice that the size of the national debt has not changed. The change is in its pattern of financing. Before the operation, the £100b of debt under consideration was held by non-banks and not ultimately matched by a bank deposit or other money asset; after the operation, the £100b is held by banks and matched by money held by non-banks.)

It is clear that the debt management operation suggested in the last paragraph would lead to a 5 per cent jump in the quantity of money in short order. If policy-makers had the gumption to carry out the steps proposed, a large boost to the total quantity of bank deposits held by UK private sector agents could quickly be achieved. In his *Treatise on Money*, Keynes referred to debt management operations of this kind as "monetary policy *à outrance*", because of the big punch that would be delivered to the economy.[7] (The phrase "*à outrance*" is French for "to the uttermost".) All being well, a £100b reflationary debt management operation would be a knock-out blow to the recession.

We have already explained – indeed we have explained several times – how £100b could be created in a new government bank deposit. But how would the £100b buyback of its own debt be organized?

6. Purchases from banks would increase banks' claims on the central bank (i.e., their cash reserves) because the central bank is the government's banker, but they would not directly increase the total of bank deposits in non-bank hands (i.e., "the quantity of money", as usually understood).

7. John Maynard Keynes *A Treatise on Money: 2. The Applied Theory of Money*, vol. VI, in Elizabeth Johnson and Donald Moggridge (eds.) *The Collected Writings of John Maynard Keynes* (London and Basingstoke: Macmillan for the Royal Economic Society, 1971), originally published in 1930, pp. 331 – 5.

How to do it...

Various procedures could be imagined, only one method is proposed here.[8] The DMO would announce a reverse auction (i.e., it would invite bids from existing holders to *sell* to the government amounts of the stock specified, and would accept the *lowest* price) of certain government debt issues which are known to be held mostly in the non-bank private sector.

At the end of December 2007, the UK national debt was £575.7b, of which conventional gilts amounted to £337.9b and index-linked gilts to £120.7b at the time of writing, the figure is nearer £650b, with conventionals probably at about £375b and index-linked £140b. Long-dated and medium-dated conventional gilts, virtually none of which are held by UK banks, constitute about 40 per cent (£260b) of the £650b, and long-dated and medium-dated index-linked a further 20 per cent (£130b). So there is a pool of almost £400b of stock which would be a suitable target for the reverse auction. (The selection of specific stocks is a relatively minor technical matter, with the guiding principle being that the planned buyback should be of stocks which at present are "cheap" relative to the yield curve.)

Would not the announcement of the reverse auction cause an abrupt leap in the prices of long-dated and medium-dated gilts? And would that not make the government worse-off? The answer is that the reverse auction might well lead to a fall in government bond yields and so in the yields of other bonds, including those issued by companies. If so, that would help ease the pressure on company finances and so be to the good. Sure enough, "the government" would be worse off in the sense that the £100b in its deposit would buy a smaller quantity (in terms of the nominal value outstanding) of government debt than might have seemed likely before the reverse auction was announced. But – frankly – the concept of "the government" is a legal fiction; it has no meaning apart from the citizens who are governed. There would indeed be redistributional consequences for the UK's citizens from the proposed operation, with government bondholders benefiting in the first instance; but – relative to the wider positive macroeconomic effects of a jump in the quantity of money – these are unimportant and should not impede policy-makers.[9]

8. If anyone doubts the technical feasibility of large-scale buybacks of government securities, perhaps it should be mentioned that such buybacks were being carried out in 1989 and 1990. Ironically, the buybacks – which increase bank deposits, and so boost economic activity and by themselves tend to be inflationary – were being undertaken when the government was trying to curb inflationary pressures by a very high short-term rate of interest. The author protested against the official idiocy in a number of *Monthly Economic Reviews* for the London discount house, Gerrard & National, as well as in evidence to the Treasury and Civil Service Committee of the House of Commons.

9. If the operations do boost the economy and defeat deflationary pressures, the eventual result should be a rise in government bond yields.

Do the proposals respect the UK's existing public finance arrangements?

The current proposals depend for their rationale on a theory and a policy principle.

The theory is that the nominal levels of national income and wealth depend on the quantity of money, which in modern circumstances is dominated by the level of bank deposits. The policy principle is that debt management operations should be organized with a view to influencing the rate of growth of money, which in practice means the level of bank deposits in private sector hands. Unfortunately, both the theory and the policy principle are controversial. As a result, some tension exists between the proposals and the current institutional arrangements for the UK's public finances. Rightly or not, this tension may lend plausibility to arguments against the proposals from sceptics or outright opponents. Space limitations prevent a full discussion, but two areas of potential difficulty may be noted here to anticipate criticism.

First, a long-standing objective of UK public finance has been to minimise interest payments on the debt. In part, this has been achieved by issuing debt in areas of the market where demand is particularly strong and yields are low. While the minimization of debt interest by such means is a valid policy desideratum, it needs to be emphasized that debt interest payments are to a large extent transfers between citizens of the same nation. In the current economic circumstances, it is far more important that all available weapons – and debt management is certainly an available weapon – be used for the promotion of demand, output and employment.[10]

Another aspect of official efforts to minimize debt interest is that Treasury civil servants have for many decades tried to keep as low as possible non-interest-bearing balances in government deposits. The explanation is obvious enough. There is a large amount of government debt outstanding at any time on which interest has to be paid. If non-interest-bearing balances can be kept as low as possible, that outstanding debt total is also reduced, less interest is due to the government's creditors and the tax burden is kept down.[11] Historically, this reasoning explains why surplus cash in the Exchequer's balance with the Bank of England was used to buy back Treasury bills (and so minimize the Treasury bill issue and interest costs on it) on a frequent, indeed daily, basis. On the face of it, the enormous £100b deposit in our proposal is an insult to official tradition. However, the problem of unnecessary interest costs is trivial in the wider scheme of things. The DMO would of course be right to negotiate hard

10. The relevance of public debt management for macroeconomic outcomes is, in fact, more a theme of Keynes's economics (and indeed of economists genuinely in the tradition of his thought, such as James Tobin) than of monetarist economics. Keynes's economics contain numerous unembarrassed references to "the quantity of money". On economists in the Keynesian tradition, see, for example, Tobin's 'An essay on the principles of debt management', pp. 378 – 453, in James Tobin *Essays in Economics, Vol. 1 Macroeconomics* (Rotterdam: North Holland Publishing Company, 1971), originally published in 1961 as a Cowles Foundation monograph.

11. S Herbert Brittain *The British Budgetary System* (London: George Allen & Unwin, 1959), p. 159 and p. 173.

with the banks for a meaningful interest payment on the government's deposits if the banks were making a large profit from the exercise, but that seems unlikely.

Secondly, the biggest buyers and holders of government debt in the UK are insurance companies and pension funds. Together, these two kinds of long-term savings institutions hold over £250b of UK government securities. They have put together their own asset allocation strategies on the basis of certain levels of gilt-edged issuance, and have also priced some of their products (such as annuities) assuming that government bond yields remain roughly as they are. Would not the vast buyback operation proposed here, with the resulting impact on yields, be a drastic disturbance to their business? Is there not a case for greater stability in debt management policy?

Since stability is of course desirable in itself, the DMO undoubtedly ought to communicate its general strategy to the long-term savings institutions. However, the administrative convenience of the DMO, the life offices and pension fund managers surely comes lower down the scale of official priorities than output and employment. If stability of the gilt-selling programme has to be balanced against extra demand and jobs, extra demand and jobs must have a higher weight.

The life offices and pension funds may, at the start of 2009, have had plans to commit, say, £50b of their annual inflows to new issues of long-dated government debt. If the government does not supply that debt, but instead concentrates on borrowing from the banks, the life offices and pension funds' plans are thwarted. Initially, they may let cash pile up in their own bank deposits. If their equities and commercial property investments are unchanged in value, the ratio of cash to their total assets then rises. If cash becomes excessive, each individual savings institution will want to buy more corporate bonds, pharmaceutical stocks, office buildings and so on. It may seem that the purchases will have no effect on asset values, because any one institution has to pay cash over to other institutions which are selling corporate bonds, pharmaceutical stocks, office buildings or whatever. The purchases and sales are within a closed circuit. But – if all institutions are in the same boat, if they all have excess cash – they can restore the desired ratio of cash to total assets only if their trading activity boosts asset values. In other words, the effect of the increase in the quantity of money arising from the gilt-edged reverse auction is to boost share prices, land prices and so on. In microcosm the processes involved exemplify the larger relationship between the quantity of money and the nominal value of national wealth.[12]

12. The ratio of "liquid" assets (mostly banks deposits) to the total assets of the UK's life insurance companies and pension funds was much the same at the start of the 21st century as it has been in the mid-1970s, even though both liquid and total assets climbed by over 50 times in the period. (See Tim Congdon *Keynes, the Keynesians and Monetarism* [Cheltenham: Edward Elgar, 2007], p. 287.)

Debt management matters

Debt management operations have major macroeconomic effects

Much is written about the kind of operations examined in this chapter – about the management of the public debt, in other words – as if the topic were of no relevance to macroeconomic outcomes. A common but unfortunate attitude needs to be mentioned. In the analysis here, the operations matter through their effect on the quantity of money, not on any "rate of interest". (This is not to deny that a change in the quantity of money has big effects on asset yields, as noted in the previous paragraph.) In some circles any mention of money is "monetarist", and is regarded as impolite or even offensive.

This attitude is downright silly. Everyone involved in the debates on economic policy surely wants to achieve the best outcomes for our society. Both inflation and deflation are monetary phenomena, and both inflation and unemployment respond to fluctuations in money growth. As it happens, Keynes himself wrote – at great length on numerous occasions – about the potential use of debt management operations in macroeconomic policy-making.[13] Can all macroeconomists please accept that debt management has important consequences for the major variables (output, employment, inflation) in which they are interested? The phrase "quantitative easing" is now being applied to a subject on which the economists of the 1930s, 1940s and 1950s wrote with understanding and wisdom. Some of that wisdom – including Keynes's own wisdom – needs to be recovered.[14]

13. Keynes wrote at length on the subject, but with a depressing lack of clarity. The index of *The General Theory* has two references to "open market operations", on pp. 197 – 9 and pp. 267 – 8. The first of these says on p. 197, "in normal circumstances *the banking system* is in fact always able to purchase (or sell) bonds in exchange for cash". So it is the banking system that does the work. The second, on pp. 267 – 8, remarks, "A change in the quantity of money...is already within the power of most governments by open-market policy or analogous measures". So now it is *most governments* that are relevant. Because of the veneration accorded to Keynes by so many economists, the muddles here have been a curse on the later deployment of debt management policy as a macroeconomic policy instrument. Keynes admitted that he had "slurred over" problems of definition. (Axel Leijonhufvud *On Keynesian Economics and the Economics* of Keynes [New York and Oxford: Oxford University Press, 1968], p. 152.)

14. Keynes's views were undoubtedly influenced by exchanges with Ralph Hawtrey, a Treasury civil servant who was then (in effect) the government's main economic adviser. Hawtrey in turn influenced Lauchlin Currie who analysed the US's Great Depression in monetary terms, almost 30 years before Friedman and Schwartz's *Monetary History of the United States*. David Laidler and Roger Sandilands have written several papers about the now largely forgotten contributions made by Hawtrey and Currie. See, for example, Roger Sandilands 'New light on Lauchlin Currie's monetary economics', pp. 171 – 93, *Journal of Economic Studies*, vol. 31, no. 3, 2004. Hawtrey's proposals in the early 1930s were very similar to those made in this pamphlet and, arguably, were a key reason for the mildness of the UK's downturn and the good recovery which followed in the mid-1930s.

5. How will it work?

Chapters 3 and 4 showed how government borrowing from the banks could expand the quantity of money – or, more precisely for current purposes, the quantity of bank deposits held by the private sector – either gradually by, say, ½ per cent a month (to cover the ongoing budget deficit and maturing debt) or suddenly by 5 per cent or even more (if the loan proceeds were used to buy back existing medium- and long-dated government debt held by non-banks). But how would a jump in the level of bank deposits boost economic activity?

Impact on economic activity . . .

A discussion towards the end of Chapter 4 hinted at the relationship between money held by long-term savings institutions and the level of asset prices, while the link between companies' lack of money holdings and the current corporate credit squeeze has already been mentioned once or twice. However, there is a lot more to say.

Some sceptics wonder why the level of bank deposits matters to any macroeconomic variable. They talk as if the ratio of bank deposits to national income could take any value whatsoever. The evidence is clear – indeed, overwhelmingly clear – that this is not so. Modern monetary statistics were first compiled in the UK in 1963. In the 45 years from the second quarter of 1963 to Q2 2006, the M4 measure of money rose by 98.5 times or at a compound annual rate of 11.3 per cent, while national output (more precisely, "gross value added at basic prices, in current price terms") by 40.6 times at a compound annual rate of 9.0 per cent. While the ratio of money to output rose substantially in the 43-year period, a number of explanatory influences – such as the removal of restrictions on bank lending and the intensification of competition in the banking industry – can readily be adduced. More pointedly, the changes in both money and national output are an order of magnitude larger (almost 100 times and 40 times) than the change in the ratio of money to output.[1]

Closer investigation of the data shows that the various sectors' money holdings grew at dramatically different rates. Whereas the money holdings of non-bank financial institutions (such as life insurance companies and pension funds) soared by over 1,400 times (yes, 1,400 times) between Q2 1963 and Q2 2006, the money holdings of industrial and commercial companies increased by 48.5 times. In fact, the increase in companies' money balances was much the same as that of national output. (The compound annual rates of increase were 9.4 per cent and 9.0 per cent respectively.) The relevance of companies' money to their behaviour was demonstrated graphically at the end of Chapter 1. Chart 2 there showed that the growth of demand was related – again over a period of more than four decades – to the ratio of companies' bank deposits to their bank borrowings. Can this relationship be utilized in a discussion of the likely impact of an immediate 5 per cent jump in the quantity of money on the UK economy?

1. See Tim Congdon 'UK inflation and the money supply: some more numbers', pp, 22 – 34, in *The Business Economist* (Watford: Society of Business Economists), vol. 39, no. 1, 2008, for further discussion.

How much would the jump in money boost companies' deposits?

The first step is to estimate the likely effect of a 5 per cent jump in the quantity of money on the level of companies' bank deposits.

Companies are only one of three types of money-holding agent in the UK economy, and their money balances (£237.3b at Q3 2008) are overshadowed – in terms of size – by those of households (£981.8b) and financial institutions (£620.2b). Nevertheless, companies are the dominant employers and the characteristic form of productive unit in our economy, and the analysis is to focus on them for the time being. Companies' money holdings are more volatile than money balances in total. In the boom-bust cycle of the early 1970s, there were even some quarters when companies' money balances leapt at annual rates of 30 to 50 per cent, whereas the total amount of money was up by 20 to 25 per cent. A reasonable generalisation is that company money fluctuates between one-and-a-half and two times as much as total money, in both directions.[2] So – if total money jumps by 5 per cent – a reasonable working hypothesis is that corporate money might increase, in just one quarter, by 10 per cent.

Is it possible to be more specific about the processes at work?

If the 5 per cent jump in total money reflected the ongoing budget deficit, it would be due to civil servants sending out cheques to government suppliers, including of course some companies. If, on the other hand, it reflected a vast debt management operation (i.e., the buyback of government securities discussed towards the end of Chapter 4), the extra money would in the first instance belong to financial institutions. However, transactions between financial institutions and companies are on a vast scale, and over time excess money in the financial system finds its way into the corporate sector. For example, the rise in asset values suggested at the end of Chapter 4 as a likely outcome of the debt management operation would facilitate money-raising (by rights issues and issues of corporate bonds) by companies. So the money would pass from the long-term savings institutions, which as we saw were thwarted in their plans to invest in gilt-edged securities, to financially hard-pressed companies.

2. In a regression of the annual rate of change of corporate money on the annual rate of change of total money (using quarterly data) over the 1964 – 2008 period, the regression coefficient took a value of 1.73 and had a t-statistic of 13.93. (The correlation coefficient was 0.53.)

How does companies' balance sheet strength affect demand?

Common sense tells us that, if companies have "too little cash" in the bank relative to their expectations and plans, they are likely to cut back on unnecessary spending and to sell assets. But, as we have seen, most companies have bank borrowings as well as cash in a deposit, and it is therefore a ratio – the ratio of their money holdings to their bank borrowings (their "liquidity ratio") – which is vital to their mood and behaviour. Table 4 below is based on an econometric relationship estimated from the data in Chart 2 and presented in Box 1. It shows the growth rates of private sector domestic demand associated with particular values of the corporate liquidity ratio.

Table 4: Company finances and private sector spending

Corporate liquidity ratio (M4 holdings/M4 borrowings, %)	Implied % growth rate of real private domestic demand
70	9.2
65	7.1
60	5
55	2.9
50	0.8
45	-1.3
40	-3.4

At the end of Q3 2008, companies' money balances (i.e., their M4, nearly all bank deposits) totalled £237.6b and their bank borrowings £502.0b, giving a liquidity ratio of 47.3 per cent. It is clear from the table that this is consistent with weakness of domestic demand, in fact, with private sector domestic demand falling (roughly speaking) at an annual rate of about 1 per cent. That is rather better (i.e., less negative) than has actually been recorded in recent months, but it is in the same ballpark. Data are not yet ready for Q4 2008, but it seems plausible from October and November numbers that companies' money balances have dropped again, perhaps by £6b, while their bank borrowings have been flat. If so, the corporate liquidity ratio at the end of 2008 was just above 46 per cent. (This would still be above the extreme low touched by this series, of 41.5 at the end of 1974, but it would be similar to the values at the troughs in the recessions of 1980 and 1991.)

What would be the effect of a hypothetical 5 per cent jump in total money and a related 10 per cent surge in corporate money in Q1 2009, as proposed here? It is an easy piece of arithmetic that a 10 per cent increase in companies' money – with their bank borrowings unchanged – would take their liquidity ratio to 50.7 per cent. The numbers in Table 4 should not be pressed too hard. They are only estimates of the most probable outcome from the

past behaviour of a relationship which could change. Nevertheless, they argue that falls in demand would stop and that demand growth would resume, if at a beneath-trend rate.

Corporate liquidity rises - growth increases

And what would follow in Q2 if another 10 per cent increase in corporate money were registered very suddenly, perhaps as a result of a repeated exercise in monetary policy *à outrance* with a massive buyback of government debt? The answer is that the corporate liquidity ratio would advance to almost 56 per cent. (Again it is assumed that companies' bank borrowings are unchanged.) Companies' balance sheet strength – as measured in this particular way – would then be in line with long-run norms, since the average value of the corporate liquidity ratio between 1964 and 2008 was just over 55 per cent. Table 4 suggests that, if that were to happen, the growth of private spending would run at an annualised rate of over 2 ½ per cent. Since a 2 ½ per cent figure is usually regarded as the trend rate of output growth in the UK, the message is that the recession would be over.

How long would it take?

Even economists with great respect for the power of monetary policy – such as Milton Friedman – have warned about the unpredictability of the economy's response. One of Friedman's favourite phrases was that changes in money growth impact on inflation with "long and variable lags". Doubters about the current proposal might wonder about the claim that a large-scale stimulatory debt management operation could end the recession by the second half of 2009.

However, a surprise of the statistical work undertaken for this paper is that the lag between the corporate liquidity ratio and private sector domestic demand is remarkably short. It may help to explain the analytical procedure in more technical terms. One of the estimated equations (and in fact the equation the results of which were incorporated in Table 4) is a regression of the annualised rate of increase in real private sector demand in the two quarters to, say, Q4 2002 against the level of the corporate liquidity ratio at Q4 2002. In other words, not only is no lag assumed, but on the face of it companies are reacting during Q3 and Q4 2002 to their balance sheet strength (as measured by deposits divided by bank borrowings) at the end of Q4! At first sight, this may seem startling, but a little reflection suggests that the implied behaviour is plausible. Companies are constantly planning their cash flows ahead over the next few weeks and months, and what they do in October and November 2002 is very much influenced by what they expect their bank balance to be at the end of December 2002.

An alternative approach is to estimate an equation lagged one quarter. In other words, the annualised rate of increase in real private sector demand in the two quarters to Q4 2002 is regressed on the liquidity ratio at the end of Q3 2002. The results for this equation are much the same as for the equation without a lag. But – if the lags are

Companies respond first to cash and balance sheet positions

extended out to two or more quarters – the quality of the relationship deteriorates markedly. The message is that companies respond very quickly to changes in their cash and balance sheet positions. Yes, there are long and variable lags between changes in money supply growth and inflation, but – in the UK at least – the lags between corporate money and real economic activity are only one or two quarters.

Official action to increase the quantity of money in Q1 2009 would, therefore, help demand, output and employment before the end of the year.[3]

What about more bank lending to companies?

A novel feature of the current recession is the immense pressure on banks, from both officialdom and the media, to lend more. The Bank of England has even claimed that an increase in bank lending – by which is meant an increase in bank lending to the private sector – is essential if the recession is to be stopped.

The credit-determines-spending doctrine is false and dangerous. It seems to originate in the notion that agents can spend above income (i.e., "spend more") only if they borrow. This notion is simply wrong. Any agent can spend above income in a particular period by running down a money balance or by selling an asset and using the proceeds for current expenditure. Reliance on borrowing is unnecessary. Of course, if companies and individuals spend above income on a large scale indefinitely, they go bust. The relationships between money and asset prices, on the one hand, and expenditure on goods and services, on the other, would hold in an economy with no bank credit to the private sector whatsoever. (Banks' assets could consist entirely of government securities. As a matter of fact, UK banks' assets in the 1940s and 1950s were mostly claims on government, as noted in Chapter 3.)

Indeed, the analytical approach adopted here argues that – if companies increase their bank borrowings and no matching increase in deposits occurs – the recession would intensify. In this sense the Bank of England's emphasis on bank credit is thoroughly wrong-headed. It is true that, in the normal course of events, when banks lend more

3. The shortness of the lag between corporate money and demand may come as a surprise, but it also emerged in a separate but similar econometric exercise by Dr. Peter Warburton in an appendix to a 2006 paper by the author. "What is striking about the results is the shortness of the lag structure for real money balances. With no significant lags in real money balances beyond a single quarter, the regressions imply that the full impact of a disturbance to real money balances is absorbed quickly into real demand." (Peter Warburton 'Econometric analysis of one type of real balance effect', pp. 119 – 21, appendix to Tim Congdon 'Money, asset prices and the boom-bust cycles in the UK', pp. 103 – 19, in Kent Matthews and Philip Booth [eds.] *Issues in Monetary Policy: The Relationship between Money and the Financial Markets* [Chichester: John Wiley & Sons, Ltd., 2006]. The quotation is from p. 120.) The regression prompting Warburton's observation was of the change in real private domestic demand on the change in the sum of corporate and financial sector money (i.e., non-household) M4 balances in real terms, using quarterly data over the 1964 – 2002 period.

to companies, they create a new deposit and that deposit is money which circulates an indefinitely large number of times. But, clearly, the benefits of new bank credit are then attributable to the extra money created, not to the bank loan itself.

Once again using our equation, we can compare two cases:

- a sudden once-for-all increase in companies' bank borrowings by 5 per cent with no matching increase in their deposits; and
- a sudden once-for-all increase in companies' bank borrowings by 5 per cent with an increase in their deposits exactly equal to the increase in bank borrowings.

We start at Q4 2008, with companies having £231.6b of M4 holdings (i.e., bank deposits, mostly) and £502.0b of bank borrowings. A 5 per cent increase in borrowings takes the figure to £527.1b. So, to summarize the two cases:

Not just bank lending; it is deposits that matter

- If bank deposits were unchanged, the liquidity ratio at Q1 2009 would be 43.9 per cent. So the liquidity ratio would *fall* (from 46.1 per cent at Q4 2008) and the annualised growth rate of domestic demand implied by our equation would drop by about 1 per cent.
- If companies' bank deposits rose by exactly as much as their bank borrowing (i.e., £25.1b), the liquidity ratio would improve to 48.7 per cent and the annualised growth rate of domestic demand implied by the equation would go up by just over 1 per cent.

To conclude, more corporate bank borrowing *by itself* would aggravate the recession. Yes, aggravate it. Sure enough, an increase in bank borrowing by companies *accompanied by an identical increase* in *bank deposits* would ease the squeeze, but the help comes from the extra money in the economy, not the extra credit. If the Bank of England thinks that more bank lending to companies is a sufficient answer to the recession and that the quantity of money matters not a jot, it is plain wrong. Further, it must be emphasized that, while extra lending to companies would be helpful if accompanied by a matching increase in money, government borrowing from the banks is even more powerful. Government borrowing from the banks can boost deposits and corporate liquidity, even while companies' bank borrowings are unchanged.

6. Alternative approaches: good and/or interesting ideas

The harshness of the cyclical downturn in demand in late 2008 and early 2009 has stimulated much discussion – in both the UK and elsewhere – about so-called "quantitative easing". It is seen as a supplement, or even as an alternative, to more straightforward measures such as the reduction of interest rates. Unfortunately, the phrase "quantitative easing" is bedevilled by ambiguities. The proposal made in the previous chapters – that the government borrow from the banks in order to increase *the quantity* of money – is a kind of quantitative easing. However, the term is often used to refer to actions by the central bank, not by the government. As a potential actor on the monetary policy stage, the central bank has two characteristics which differentiate it from the government. It does not run a large "budget deficit" which has to be financed and therefore nearly always has macroeconomic significance, while – unlike the government – it has the constitutional prerogative to issue legal tender notes.[1]

Targeting quantities

Nowadays, the central bank sees much of its job as being the setting of interest rates in so-called "repurchase operations". In these operations, the central bank lends cash to one or more commercial banks, and agrees with them that they must return the cash (i.e., the central bank repurchases the money) plus an interest payment within a few weeks. The interest rate ("the repo rate") fixed in such operations is then a benchmark for all other short-term interest rates. Sometimes the central bank buys securities with cash and the commercial banks promise to repurchase it from the central bank at a later date, again with an interest rate implicit in the deal. It makes little difference to the economic substance of the matter whether the operations are loans or transactions in securities. The critical features of the operations are that they are to be reversed soon and involve little risk to either party, while they have little economic importance apart from the setting of the interest rate. Repo transactions and interest-rate setting are sometimes regarded as "conventional" central bank activity.

But central banks could try to influence quantities as well as a price (i.e., the short-term interest rate). Many discussions are confused, but the targeted quantities can be "credit", the central bank's own liabilities (i.e., the so-called "monetary base") or the quantity of money

1. Note that the constitutional prerogative could be withdrawn from the central bank and retained by the government. In the First World War, the Treasury issued legal tender notes under the signature of one of its Permanent Secretaries, Sir John Bradbury. They were nicknamed "Bradburys" and issued in large quantities. They circulated alongside Bank of England notes until 1928, when note issuance was consolidated at the Bank of England once more. The threat to strip the central bank of the note issue prerogative becomes understandable in deep cyclical downturns, when "printing money" is an obvious (and undoubtedly valid) remedy.

(i.e., the standard measure of money, nowadays dominated by bank deposits). Generally speaking, when a "credit" target is specified, it is of a *bank* credit total, but this is not always so. The last chapter showed how unsatisfactory, and indeed how counter-productive, an increase in bank lending to the private sector can be as an answer to a recession, even if it were a genuine policy variable. In fact, bank lending to the private sector is not a policy variable, since it depends on voluntary and autonomous decisions taken by banks and their customers. In a free economy, it is not directly susceptible to policy.

The monetary base and "cash" come to much the same thing, and a common textbook view is that the quantity of money is a stable multiple of the base. Another textbook practice is to see variations in the base – not variations in an interest rate (the repo rate or whatever) – as a key variable in monetary policy-making. This proposition is highly controversial and cannot be discussed at length here. At any rate, there is little question that a commercial bank with excess cash reserves is more likely to want to grow its balance sheet than a commercial bank with inadequate cash reserves.

The central bank purchases assets from banks

The central bank can increase its liabilities (and leave the quantity of money unchanged in the first instance) by:

- purchasing assets from the banks; and/or
- lending to the banks.

If it purchases assets from the banks while their total balance-sheet size is unchanged, the banks have fewer other assets, but a higher ratio of base assets to total assets. If it lends to the banks, their total balance sheet expands, with extra base on the assets side and extra liabilities (an amount owed to the central bank) on the liabilities side, but again there is a higher ratio of base assets to total assets.

The Japanese experience

Some economists believe the textbook story, that a rise in the ratio of base to total assets causes banks to engineer a multiple expansion of their assets. If banks do indeed respond to an addition to their holdings of base by expanding their assets (i.e., by purchasing securities or making new loans), the eventual result ought to be the creation of new deposits. There is no room here to discuss the debates that have arisen over these propositions, which – as has already been noted – are controversial. In Japan, aggressive operations by the central bank to expand banks' base assets in the late 1990s and the early years of the current decade did not lead to a worthwhile or sustained increase in the overall quantity of money or a recovery in the economy. But this is not to suggest that the Bank of Japan's actions were futile.[2]

2. No consensus has been reached about the Japanese experience. It seems plausible that demand and output were stronger than they would have been without the large increase in the monetary base, but the impact on the wider economy of the Bank of Japan's operations undoubtedly disappointed their protagonists.

The Japanese experience merely warns not to have too high expectations of official actions, where these actions affect only the monetary base itself.

The central bank purchases assets from non-banks

Alternatively, the central bank can increase its liabilities by purchasing assets from the non-bank private sector. (We exclude the possibility that it might lend to the private sector, since this would be usurping the role of the commercial banks and raise fundamental issues about the definition of the central bank's role in a free market economy.) The effect of such purchases is directly to increase *both* the quantity of money *and* the monetary base. The quantity of money is increased because the non-bank agents selling assets to the central bank receive sums which are credited to their bank deposits; the monetary base (i.e., cash) is increased because these extra sums in the economy are liabilities of the central bank.[3]

"Central bank purchases of assets from non-banks are . . . the most stimulatory monetary policy weapon"

It should be obvious that central bank purchases of assets from non-banks are in principle the most stimulatory monetary policy weapon imaginable. Not only does the quantity of money rise by the amount of the purchases, but there is a possible second-round effect if banks respond to their increased holding of base by trying further to expand their balance sheets. (This second-round effect does not arise when the government borrows from the commercial banks, because government borrowing from the *commercial* banks does not affect the monetary base.)[4] The second-round effect is most likely to come into play if banks have excess capital as well as excess cash.

3. Is more explanation needed? If the central bank were to pay for the securities with notes, the non-bank sellers of the securities would lodge the notes with their banks (creating new money in the form of a deposit) and the banks' matching asset would be the notes themselves, which are of course base assets. In practice, the central bank would credit non-banks' accounts with their commercial banks and the commercial banks would have a claim on the central bank, i.e., an addition to their "cash reserve" which is a base asset. At the time of writing, both the Federal Reserve and the Bank of Japan are purchasing commercial paper on a large scale. The Federal Reserve's actions have led to a huge leap in the US's monetary base and a clear acceleration in the growth rate of M2.

4. Government borrowing from the central bank to make purchases (of anything) from non-banks and central bank purchases of securities from non-banks have, as a first-round effect, additions *both* to the quantity of money *and* the base. See footnote (2) to Chapter 4 above. Because of the potential stimulatory second-round effects of the extra base, there is no question these methods of stimulus are very powerful. In an extreme debt deflation, the authorities must consider their deployment, whatever phobias newspaper leader-writers have about the inflationary effects of "printing money". In a dangerous and self-reinforcing deflationary black hole, the priority must be to stop the deflation.

Pros and cons of central bank activism

Could the central bank purchase long-dated government securities from non-banks, so mimicking the government operation described in Chapters 3 and 4? And would an operation under the central bank's aegis not have same stimulatory effects, as with the proposals made in Chapters 3 and 4?

The answer to the first question is "yes" and to the second "not only yes, but with added emphasis, because central bank purchases of long-dated securities from non-banks would probably be even more powerful than government buybacks because of the extra base injected into the banking system". As should be evident from the previous paragraph, the reason for the additional impact is the potential second-round effect of the extra base on banks' asset acquisition plans.

Given that central bank purchases of long-dated government securities from non-banks would be an even more decisive knock-out blow to the recession than government buybacks of such securities, why has this approach not been endorsed here at the best option? The objections to such central bank activity are largely political and constitutional. One problem is the possible profit and loss on large-scale asset purchases. If the central bank buys long-dated government securities and holds them on its balance sheet, and they fall in value, it has suffered an accounting loss.[5] This amounts to little more than a transfer within the public sector and is not a resource loss to the economy. However, central banks are answerable to legislatures. Well-intentioned parliamentarians who lack a good grasp of the underlying realities may ask sharply critical and wholly misplaced questions about the central bank's "losses". (The Bank of Japan has worried about "losing money" on its holdings of Japanese government bonds.) Another issue is the uncertainty about the scale of the second-round effect, as commercial banks react to excess base holdings. Since it is the quantity of money (i.e., bank deposits) that "really matters" to the macroeconomic situation, policy-makers ought not to bother themselves if banks apparently have excess cash reserves. But on at least one notorious occasion – the US in 1937 – the central bank blundered because it misinterpreted a situation of this kind.[6]

5. In his discussion of monetary policy *a outrance* in A *Treatise on Money*, Keynes acknowledged that the central bank's purchases of securities might lead to losses and accepted that the prospect of such losses might constrain its freedom of manoeuvre. (Keynes *A Treatise on Money*: 2. *The Applied Theory of Money*, vol. VI, in Johnson and Moggridge [eds.] *Collected Writings*, p. 334 – 5.) The fierce debates in the US Congress in late 2008 over the Troubled Assets Relief Program show that Keynes's concerns were prescient. The subject is controversial. See also the footnotes on p. 92 and pp. 103 – 4 of the author's *Money and Asset Prices in Boom* and Bust (London: Institute of Economic Affairs, 2005) for further discussion.

6.Because banks were holding cash reserves well above the mandated level, the Federal Reserve was afraid it had no control over their balance sheets and raised the required reserve ratio. It turned out that banks wanted to have excess reserves. They reacted to the rise in the reserve ratio by shrinking assets and reducing the quantity of money, which led to another downturn in 1937 and 1938.

Are quantitative actions necessarily "unconventional"?

At any rate, central bank purchases of assets ought to have a stimulatory effect on economies. While there is no room here for the detailed discussion justified by the subject, these kinds of quantitative easing are good and interesting ideas. This chapter closes with two related observations.

First, the media tend to give the label "unconventional" to the quantitative effects of government and central bank transactions. The tendency is unfortunate, because such transactions – always and everywhere – have quantitative effects on a balance sheet. The neglect of these effects was not too harmful in the UK during the decade of low budget deficits (and so of small quantitative effects) from the mid-1990s. But in truth monetary policy-makers should at all times to have a view on the consequences of the government's financing operations, particularly the consequences for the level of bank deposits held by private sector agents (i.e., the quantity of money). The correct management of public debt is best understood as a conventional part of monetary policy.

"When the state sector buys securities from non-banks, bank deposits necessarily increase"

Secondly, as we have seen, purchases of long-dated government bonds from non-banks by the state sector (i.e., either by the government itself, using bank finance, or by the central bank) should stimulate economic activity. Some economists regard success in this endeavour as being measured, in the first instance, by a fall in bond yields.[7] It cannot be emphasized too strongly that this is a mistake. When the state sector buys securities from non-banks, bank deposits necessarily increase. Money-holders may then expand their purchases of equities and real estate, and not merely of bonds. The benefit to the economy may be seen in recoveries in the stock market, land prices and so on, with no effect whatsoever on bond yields.

7. Alternative approaches: bad and/or uninteresting ideas

Crisis conditions may provoke short-term emergency responses which have dangerous long-run effects. In the current debate, three bad ideas have had far too much attention:

7. Again, Keynes is important here. On p. 298 of *The General Theory* he said, "The primary effect of a change in the quantity of money on the quantity of effective demand is through its influence on the rate of interest". Exactly what Keynes meant by this statement is for discussion. Is "the rate of interest" to be understood as the money market rate, the long bond yield or a catch-all phrase for relevant asset yields, including the yields on equities and real estate?

- official intimidation of the banks so that they "lend more";
- the advocacy of an increased budget deficit; and
- the proposal for state guarantees of private sector commercial credit.

More bank credit

Increased corporate indebtedness is not the answer . . .

The effects of increased bank credit to the companies within private sector have already been discussed in Chapter 5. But the private sector includes individuals and financial institutions, as well as companies, and they need to be brought within the analysis too. As we saw in Chapter 5, when new bank credit to companies is accompanied by a matching increase in bank deposits, extra credit is indeed beneficial, *but because of the increase in bank deposits, not because of the increased corporate debt.* The credit crunch has arisen because companies have too much debt. Frankly, someone who believes that the answer to the UK's credit crunch is increased corporate indebtedness, especially indebtedness to the banks, must have a weak hold on reality.

What about bank lending to individuals?

. . . nor is personal indebtedness

Bank lending to individuals in the UK is – overwhelmingly – for the purpose of buying houses. (The newspapers make a hullabaloo about credit card debt. Actually, such debt is small compared with mortgage borrowing and has correspondingly little macroeconomic importance.) The suggestion that banks should lend more to individuals to buy houses is therefore that they increase their mortgage debt when the value of the housing stock has collapsed and is still falling. There may be some lucky first-time buyers or people with little or no existing debt who can now, sensibly and with advantage, borrow to invest in housing equity. But isn't it obvious that, if house prices have further to decline, an overall increase in mortgage indebtedness is likely to lead to more personal bankruptcies?

The only other kind of potential private sector borrowers are financial institutions. Does the claim that "more bank lending is essential for recovery" then reduce to "more bank lending to financial institutions (hire purchase companies, securities traders, pawnshops and even banks' own much maligned 'conduits') is essential for recovery"? And does anyone believe that?

An increased budget deficit

A standard university macroeconomics course includes an account of national income determination (often said to be "Keynesian" in origin), in which income equals expenditure in one round and expenditure equals income in the next round, and so on. The result is a never-ending so-called "circular flow" unless "demand" is

injected or "withdrawn" by the government (or, via the trade balance, the rest of the world). This account is homely and simple, and has the great attraction that it is easy to teach. One of its by-products is an unbounded confidence in the use of fiscal policy (i.e., changes in the budget deficit) as macroeconomic therapy. Increases in the deficit are supposed "to boost demand" and reductions in it "to curb spending".

The pros and cons of fiscal policy are huge subjects. A central analytical problem with the Keynesian view is that an expansion in the budget deficit must, as a matter of logic, be accompanied by a reduction in the financial deficits of the other sectors of the economy.[1] (The sum of the financial deficits and surpluses in any economy must be nil.) There is no guarantee at all that an increase in the government's deficit will raise total spending. Indeed, the empirical evidence on the effectiveness of fiscal action is decidedly mixed.[2] In one celebrated episode, in 1981, 364 economists protested about the British government's decision to raise taxes in a recession and forecast an intensification of a supposed "depression". In fact, the economy started to recover within a few months of the announcement of the tax increases.[3]

It is the quantity of money that matters

Of course, to the extent that the budget deficit is financed from the banks, new money is created. That was the message of Chapters 3 and 4. Given the muddle in UK policy-making at present, the incurrence of a large budget deficit therefore has one undoubted virtue: it makes more likely the large-scale monetary financing of the government's activities. However, a budget deficit is not in fact a precondition for such monetary financing. As explained in Chapter 4, the government could create more money by buying in its own debt. Indeed, it could do this, regardless of the budget balance in the current year. Startling though it may seem, the government could buy back existing debt from non-banks and create more money, even while running a balanced budget or a budget surplus![4]

In short, while monetary financing of a budget deficit does ease a recession because it adds to the quantity of money, it is the quantity of money that matters, not the budget deficit. If the government expands its budget deficit and finances it by borrowing from non-banks (by, for example, issuing long-dated gilts to be bought, mostly, by insurance companies and pension funds), no addition to aggregate demand is to be expected.

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1. Many other ways of establishing the ineffectiveness of fiscal policy are available. The current fashion is the neo-Ricardianism associated with the American economist, Professor Robert Barro. His point is that – since government bonds are not net wealth – the increase in government debt arising from an increase in the budget deficit cannot stimulate the economy. The argument in the text dismisses the notion that an increased deficit by any one sector (and so extra spending by *this one sector*) implies any increase in deficits for the whole economy (and so extra aggregate demand). This argument is much simpler than neo-Ricardianism, although less familiar.

2. See pp. 175 – 79 of the October 2008 issue of the International Monetary Fund's *World Economic Outlook* (Washington: IMF, 2008), which are part of an article on 'Fiscal policy as a countercyclical tool'. The IMF analysts clearly struggled with cross-country data to obtain the conclusion they wanted, namely that fiscal policy could boost demand.

3. For further discussion, see Philip Booth (ed.) *Were 364 economists wrong?* (London: Institute of Economic Affairs, 2006), published on the 25th anniversary of the 1981 Budget.

4. See footnote (8) to Chapter 4 above.

Government guarantees on private sector debts

As noted at the start of Chapter 4, a frightening aspect of the corporate cash squeeze is the reluctance of companies to extend credit to each other. Retailers, in particular, are finding it harder to order goods unless they pay up front. Since the government can levy taxes and print money, its credit-worthiness is not in doubt. Understandably, a business lobby for the state to guarantee inter-company credit has emerged. At the time of writing, several press reports have suggested that the government will establish a credit guarantee scheme of some sort.

Public sector guarantees of private sector debts are, in general, a very bad idea.

First, credit insurance can be provided by private insurance companies, which are motivated by profit and usually have abundant experience in discriminating between good and bad debtors. If the state enters this business, even on a temporary basis, private credit insurers will withdraw. The total amount of credit insurance available will therefore increase by less than the government's own potential credit risk liability. Secondly, the political process is notoriously susceptible to lobbying from "hard luck" cases, while public ownership almost inevitably neutralizes the pressures to take careful decisions which apply in private insurance companies. If big losses are recorded in state-run credit insurance agency, is it right that the taxpayer has to cover them?

8. The medium-term objective: low and stable money growth

The argument of this pamphlet has been that the recession can be brought to a halt – quickly and easily – by a deliberate large-scale financial operation by the government. The government should borrow £100b from the banks in the first quarter of 2009, and use that £100b to buy back its own existing debt in the hands of non-banks and/or to finance its ongoing budget deficit. That should in short order add 5 per cent to the quantity of money – and, because of the volatility of corporate money holdings, it should add rather more than 5 per cent to companies' bank deposits. The government should then repeat the exercise in Q2 2009. By mid-2009, companies' bank deposits might have increased by 15 - 20%, taking their liquidity ratio (i.e., to repeat, their money holdings divided by their bank borrowings) back towards the values of about 50 to 60 per cent that are associated with cyclical normality. The corporate liquidity squeeze, and the wider recession,

should come to an end. (Of course, a yet more massive operation – of £200b in Q1 – is technically feasible, but on that scale the executives and administrators in the DMO, the life insurance companies and so on might have valid grounds for complaint!)

Is there a precedent?

In the 1930s, both the American and British governments carried out debt management schemes that had a similar structure to the one proposed here. In 1933 President Roosevelt, on the advice of a now rarely mentioned Professor Warren, authorised huge purchases of gold and silver from private sector holders, and paid for them by borrowing from the banks. Banks' holdings of government securities advanced from $6,767m at end-1932 to $8,032m at end-1933, and then leapt over the next four years to $16,925m. (Roughly speaking, the banks bought three-quarters of all new US public debt issued in the period. Incidentally, banks' loans to the private sector *contracted* by almost 25 per cent between end-1932 and end-1936, although they grew again in 1937.)[1] Because of the expansion of their claims on the government, US banks saw their deposits grow rapidly in the mid-1930s. Between the trough in Q2 1933 ($41.15b) and Q4 1936 ($61.14b), the M2 money measure – dominated by deposits – climbed at a compound annual rate of 12 per cent. Nineteen twenty-three was the best year for the US stock market in the 20th century, while real output climbed by about 50 per cent in the four years to the start of 1937.[2]

The UK's experience was less radical, partly because it did not suffer such a severe downturn as the US.

After the UK's departure from the gold standard in September 1931, the UK authorities engineered a large drop in Bank rate to 2 per cent and prodded the banks into helping a conversion of the War Loan issue on to a lower yield basis. (The government saved on interest costs, while the banks made a capital gain.) The UK clearing banks' "investments" – which were mostly gilt-edged securities – rose in 1932 from £301m to £348m and, more decisively, in 1933 from £348m to £537m. The 1933 movement was by itself was an increase of 10.6 per cent in total assets. (In other words, it was similar in size, relative to UK banks' total balance sheet, to the sort of operation proposed in this publication).[3] According to one historian, "The turning-point came in February 1932 when the money supply and high-powered money [i.e., 'the monetary base'] began to rise rapidly. By the end of 1936, the money supply had grown by 34 per cent."[4] In Britain, as in the US during these years, bank lending to the private sector *fell*. But, again as in the US, the economy enjoyed a brisk recovery.

1. Ray B. Westerfield *Money, Credit and Banking* (New York: Ronald Press Company, 1938), p. 905 – 6.

2. Robert J. Gordon (ed.) *The American Business Cycle: Continuity and Change* (Chicago and London: University of Chicago Press, 1986), p. 794 and p. 804.

3. Edward Nevin and E. W. Davis *The London Clearing Banks* (London: Elek Books, 1970), p. 298.

4. Susan Howson *Domestic Monetary Management in Britain*, 1919 – 38 (Cambridge: Cambridge University Press, 1975), p. 99.

There is a great puzzle about the conduct of British monetary policy since 2006. The historical record is clear, that the big boom-bust cycles of the 1970s and 1980s were associated with – and largely caused by – extreme fluctuations in money supply growth.[5] The message must be that, if boom-bust cycles are to be prevented, the growth of the quantity of money (i.e., of bank deposits, mostly) should be stable at a moderate rate (i.e., at a rate roughly in line with the increase in nominal GDP consistent with the inflation target). In terms of numbers, that would mean a growth rate of bank deposits (and so of bank assets) of about 4 to 7 per cent a year. But in 2006, the annual rate of money growth soared into double digits.[6] This was regrettable and it did indeed lead to a rise in inflation to well above the 2 per cent target. But a bust could have been avoided by gradual reductions in money growth. Instead, as we saw in Chapter 1, in late 2008 the quantity of money measured correctly (i.e., M4 minus deposits held by banks' conduits and other subsidiaries) may have been falling, while corporate money balances contracted sharply.

In *The General Theory of Employment, Interest and Money*, Keynes remarked, that when we proceed from the determination of the output of particular industries "to the problem of what determines output and employment as a whole, we require the complete theory of a monetary economy".[7] Over the medium term, a low and stable rate of growth of the quantity of money is a precondition for wider macroeconomic stability.

5. See the last two essays in the author's *Keynes, the Keynesians and Monetarism*, and, for more detail on the Lawson boom of the late 1980s and the subsequent bust, his *Reflections on Monetarism* (Aldershot: Edward Elgar, 1992).

6. Even if deposits held by "intermediate OFCs" (i.e., the conduits and other artificial bank subsidiaries) are excluded, annual money growth was in double digits for much of 2006. The author reached this conclusion from publicly-available data published by the Bank of England, which in January 2007 he noted in evidence to the Treasury Committee of the House of Commons. Since the Bank of England prepared the data, its research economists would certainly have been able to draw the same conclusion if they had been interested in the topic.

7. John Maynard Keynes *The General Theory of Employment, Interest and Money*, vol. VII, in Johnson and Moggridge [eds.] *Collected Writings* (1973, originally published in 1936), p. 293.

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