

2. The debate over “quantitative easing” in the UK’s Great Recession and afterwards

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Commentary on monetary policy in the UK’s Great Recession was more than usually confused. Views about “quantitative easing” in particular were jumbled and all over the place. At one extreme, Liam Halligan in his *Sunday Telegraph* column compared QE to “money printing in banana republics”, “Zimbabwe-style economics” and “grotesque policy vandalism”.¹ The reference to Zimbabwe implied that QE might lead to hyperinflation and hence that QE must be an extraordinarily powerful weapon in the monetary policy armoury. On the other hand, Martin Wolf, chief economics commentator of the *Financial Times*, repeatedly doubted the effectiveness of monetary policy in general and QE more specifically.² Wolf did not see his position as heretical, since a world-renowned monetary theoretician, Michael Woodford of Columbia University, had authored a 2011 op-ed piece in the *Financial Times* asserting that the economic rationale for QE “has always been flimsy”.³ Almost two years after Woodford’s comment appeared, another contributor to the *Financial Times* still seemed perplexed. The journalist, Jonathan Davis, claimed that assessing the effects of ending QE “is ultimately a matter of subjective judgment, not a simple binary decision that can be derived from objective analysis of data”.⁴

The author organized a joint letter to the *Financial Times* in 2011 to disagree with Woodford and wrote another one in his own name in July 2013 to rebut the Jonathan Davis article.⁵ (He conducted an exchange with Halligan separately, in *The Sunday Telegraph* on 15 February 2014. By then it was obvious that QE, on the scale implemented, had not led – and would not lead – to hyperinflation.⁶) This chapter elucidates in more detail both the data relating to the UK’s QE operations and the bearing of these operations on the UK’s macroeconomic situation. Its main purpose is to establish more rigorously the counter-factual claim in the 2013 letter that, without the QE operations from March 2009, the UK’s quantity of money

would have been “hundreds of billions of pounds” lower than was in fact the case.

What about the wider macroeconomic significance of the QE exercises? As long as one accepts the standard account of the monetary determination of national income, the relationship between QE and nominal national income is straightforward in essentials. The long-run similarity of the rates of increase in the broadly defined quantity of money and nominal national income is clear in virtually all nations. Suppose the validity of the counterfactual claim is demonstrated in this chapter. Suppose, in other words, that without QE the quantity of money in the UK in mid-2013 would have been “hundreds of billions of pounds” – indeed about 20 to 25 per cent – lower than it was in reality. The point of the argument then becomes simple. With the quantity of money 20 to 25 per cent less, the equilibrium levels of national income and wealth in nominal terms would also have been 20 to 25 per cent less, roughly speaking. QE prevented the Great Recession becoming a second Great Depression.

I

How did QE work in practice? How indeed does it work in theory? The initial impact of *quantitative* easing, as understood in the UK public debate, is to increase the *quantity* of money.⁷ So QE matters to macroeconomic outcomes in the same way that any increase in the quantity of money would matter to them. The discussion of QE’s effectiveness is therefore subordinate to the monetary theory of national income determination. According to standard theory, the equilibrium level of national income in nominal terms is determined by the interaction between the demand to hold money balances and the quantity of money created by the banking system. As noted elsewhere in this volume, the proposition was elaborated by Keynes at the end of Chapter 7 of *The General Theory* and is routine in macroeconomics textbooks.⁸

To expand the argument, some words are needed on the phrase “the demand for money”, where its meaning is “the demand to hold money balances”. (A recurrent confusion is that “the demand for money” connotes “the demand for bank credit”. Let it merely be stated in the main text here that the phrase connotes nothing of the sort. A footnote discussion is more detailed.⁹) Non-bank private sector agents have a money demand function, with their demand to hold money depending on the level of income (and/or wealth), the attractiveness of money relative to other assets and other variables. (They have a money demand function, just as they have demand functions for Weetabix, red socks and holidays in Spain,

and – as with these demand functions – the variables that determine the quantity demanded are relative price, income and other variables.) With the quantity of money given, and with the non-income variables in the demand function also set at particular values, the money demand function implies that only one level of nominal national income is consistent with macroeconomic equilibrium. In that sense the quantity of money determines nominal national income.

Further, if (quite a big “if” in practice) the non-income variables in the money demand function are stable over time, theory says that changes in the quantity of money and *equilibrium* national income are equi-proportional. In the real world changes in the quantity of money usually differ from changes in nominal national income in short-run periods of a few quarters or even two or three years. The differences are largely due to agents’ difficulties in matching the demand to hold money with the actual quantity of money in existence. In other words, over extended periods agents suffer from “monetary *disequilibrium*”.¹⁰ Nevertheless, in nearly all countries over the long run the differences between the annual rates of change of money and national income are small compared with the cumulative changes in both money and national income.

What is being claimed implicitly in the last paragraph? Suppose that, over a period of (say) ten years, policy-makers deliberately cause the quantity of money to rise by 100 per cent more than would otherwise have been the case. Then nominal national income will also rise – roughly – by 100 per cent more than would otherwise have been the case. That is the point of the quantity theory of money. It follows that policy actions influencing the quantity of money are hugely important to macroeconomic outcomes.

The discussion can return to QE. The state can always create money by borrowing from the banking system, and using the proceeds either to finance a budget deficit (that is, the purchase of goods and services from the non-bank private sector) or the purchase of assets from the non-bank private sector. Of course, the payment for the goods and services, or the assets, is in money. So the quantity of money held by the non-bank private sector rises pound for pound, dollar for dollar, euro for euro, or whatever, by the value of the goods purchased by or assets sold to the state. QE is to be understood as the purchase of assets, by the state (either the government or the central bank) from the non-bank private sector, to increase the quantity of money. Suppose that we are talking about the UK, and that QE amounts to £250 billion and the quantity of money at the start of the process is £1000 billion. Then – in a simplified account focusing only on the impact, first-round effect – QE by itself *causes* the quantity of money to rise by 25 per cent. Given the equi-proportionality of changes

in the quantity of money and nominal national income just discussed, which admittedly holds only over the long run and “in equilibrium”, the increase in the quantity of money also *causes* nominal national income to be 25 per cent higher than it would otherwise be.¹¹ In other words, in the situation discussed, QE of £250 billion has the result of boosting equilibrium nominal national income by 25 per cent.

II

QE – the large-scale creation of money by the state – is the equivalent in monetary policy of nuclear weaponry in national defence or foreign affairs. Despite its megaton capacity, academic discussion and public debate about QE – in the UK and elsewhere – have been plagued by misunderstandings. Two such misunderstandings received some comment in the introduction, but need further mention here. The first is confusion about the relevant measure of “the quantity of money”, and the second relates to a widespread inability to see exactly how changes in this relevant “quantity of money” affect expenditure and hence alter equilibrium national income.

On the first question, the relevant measure is taken to be one that is broadly defined to include time deposits and wholesale deposits, and is held only by genuine non-bank private sector agents. It is not to include balances held by the government and its affiliates, or by banks and quasi-banks.¹² In the UK context this measure can be equated with M4x, as calculated nowadays on a regular basis by the Bank of England.¹³ The M4x aggregate, like all broad money aggregates, is dominated by bank deposits. Indeed, it is not going too far to regard “the quantity of money” and “the quantity of bank deposits” as more or less synonymous in today’s world. An awkward and tiresome issue is that in the UK during the period under review banks had subsidiaries (“conduits”, also known as “intermediate other financial corporations” or IOFCs) that were on the border line between quasi-banks and non-banks. They were allowed inside the old M4 definition, but were excluded – correctly, in the author’s opinion – from M4x. The matter is discussed further at the end of the third section.

Some economists think that the key aggregate in monetary economics is the monetary base by itself.¹⁴ This is just wrong. In the UK QE was very large relative to the level of the monetary base in early 2009. Indeed, the monetary base rose by more than five times between the start of 2009 and mid-2013. The five-fold surge in the base provided the rationale – or rather the bogus rationale – for Liam Halligan’s forecasts in *The Sunday Telegraph* that QE would provoke a dramatic leap in inflation and eventu-

ally culminate in a Zimbabwe-style currency debasement. Such forecasts – and the “theory” behind them – have been invalidated by events.¹⁵

Secondly, many people are baffled about how a large increase or decrease in the quantity of bank deposits can affect anything in the economy.¹⁶ At a 2014 press conference shortly before standing down from the chairmanship of the Federal Reserve, Ben Bernanke remarked that “QE works in practice, but doesn’t work in theory”. This may have been intended as a wisecrack, but it resonated in the world’s media and even in some university economics departments as if it were a serious remark. In fact, the processes that connect money and expenditure have figured prominently in the history of economic thought.¹⁷ Despite Bernanke’s sneer, they have been discussed countless times by many undoubtedly well-reputed authorities in a large body of literature.

One of the best accounts is to be found in Keynes’s 1930 *Treatise on Money*, which differentiates between transactions in “the industrial circulation” (roughly speaking, those in the income–expenditure–output circular flow) and “the financial circulation” (which can be interpreted as transactions in titles to existing assets).¹⁸ As Keynes realized almost 90 years ago, the value of total transactions in an advanced economy is vast, being a multiple both of national income and of transactions involving the extension of new bank credit.¹⁹ Given the insignificance of new bank credit relative to the value of transactions, the fame accorded to Bernanke because of his allegedly important research on the “credit channel” must be seen as an aspect of wider bewilderment about these topics.²⁰

Two paragraphs can quickly arrive at the heart of the matter. (See also the author’s discussion of the hot potato argument on pp. XXX in Chapter 1.) With their money demand functions defined, and with the non-income arguments in the money demand function given, agents have one and only one desired ratio of their money holdings to income. (With tastes and relative prices given, people have one and only one desired ratio of expenditure on Weetabix, red socks and holidays in Spain to their income.) Suppose that – for whatever reason – the actual money holdings of *all* agents (that is, the aggregate quantity of money) are above this level. They therefore *all* want to reduce the ratio of money to income. What happens?

Suppose that one agent spends above income in order to send the excess money elsewhere. That boosts expenditure, but it does not rid the economy as a whole of the excess money, because the money is credited to another agent. This other agent may also try to unload the excess money by spending above income, but the money again stays in the economy, now in yet another bank account. The condition of an excess *supply* of money is associated therefore with an excess *demand* for commodities. The desired ratio of money to income is restored when this excess demand has raised the

price of commodities by enough to eliminate the excess money holdings. Given the stability of the money demand function, and the assumption of certain unchanged values of the non-income arguments in that function, the rise in the price level of commodities has to be equi-proportional with the rise in the quantity of money (that is, of bank deposits). The value of the transactions involved in the adjustment processes, which include transactions in existing assets, is a high multiple of national income and expenditure, as the notions of “national income and expenditure” are understood in the Keynesian textbooks.

Let it be repeated that the argument of the last two paragraphs – which puzzles many people, including apparently a much-admired Fed chairman – has been developed by many other economists, beginning with David Hume and Richard Cantillon in the eighteenth century, running via Leon Walras and Knut Wicksell in the nineteenth century, and then through Alfred Marshall, Irving Fisher, Arthur Pigou, John Maynard Keynes, Don Patinkin and Milton Friedman in the twentieth. One point must be hammered home time and again. In the two-paragraph cameo just given, the tendency of agents to spend above income arises solely because of the divergence between their actual and desired money holdings. Equilibrium is restored when agents’ actual and desired money holdings are the same. (That is that, finish, full stop, end of story. This is the proposition many people find strange. It is basic.²¹)

For clarity, the tendency of agents to “spend more” and unload excess money has nothing necessarily to do with any of the following:

- “the rate of interest”, whether that is to be understood as the money market rate, the corporate cost of capital or the government long bond yield;²² or
- the quantity of new bank credit to the private sector;²³ or
- “credit availability”, or
- the spreads charged by banks on loans to the private sector.²⁴

Of course, movements in “the rate of interest” (whatever this deeply ambiguous notion means), new bank credit (which is relevant to money creation) and credit spreads (also relevant to the pace of money creation) are relevant to macroeconomic trajectories. But the movements of these variables, and their impact on demand, output and so on, are conceptually distinct from the actions of people, companies and financial institutions when they equilibrate (or try to equilibrate) the demand to hold money with the quantity of money created by the banking system.

None of “the rate of interest”, bank lending and credit spreads is directly pertinent to the transmission mechanism from money to the

economy, as this mechanism is understood in the present chapter, and in a voluminous and classic body of literature.²⁵ Far too many supposed authorities think that the purpose of QE was “to reduce interest rates”, “to boost bank credit” or “to narrow credit spreads”, as if bank lending to the private sector were the whole story. At its simplest, the purpose of QE was to raise the quantity of money and thereby the equilibrium level of nominal national income. The key motivating force in the transmission mechanism was the equilibration of agents’ actual and desired ratios of money to income, after a positive exogenous shock had been delivered to the quantity of money.

The pervasiveness of agents’ attempts to establish that equilibrium is fundamental to understanding the centrality of the banking system to economic analysis and policy-making. The centrality of the banking system arises above all because the bulk of its liabilities are money. The composition of its assets, and even large shifts in asset composition, may be of considerable interest and importance to other topics, but they are secondary issues in the determination of national income and wealth.²⁶ The relationship between the quantity of money and nominal national income holds in a situation where money is a commodity (so no bank credit to the private sector exists by definition), or where banks’ assets consist totally of either cash and government securities, or cash and so-called “seasoned” securities issued by the private sector.²⁷

III

In late 2008, in the weeks following the Lehman crisis, macroeconomic and regulatory officialdom in the principal economies decided that banks must be made safe. The people involved were in such a tizzy that they resolved that “the tidying-up of bank balance sheets” – and especially a major recapitalization of the banking system – had to be done once and for all, definitely and quickly.²⁸ They repeated to themselves the mantra that they should “never let a serious crisis go to waste”.²⁹ (The phrase, “the principal economies”, means here the G20, more or less. It seems that the discussions, held in English, were driven by the USA and the UK. In terms of individuals and at the intellectual level, they were piloted by Ben Bernanke and Mervyn King.)³⁰

Banks across the advanced world were therefore required to shrink their risk assets and to raise more capital. The effect of the official injunctions was:

- to make the banks sell off non-core assets, such as securities, to non-banks;

- to oblige the banks to stop new bank lending (which would increase risk assets) and to pull in low-quality loans (even if normally banks are very reluctant to do this, except as a last resort); and
- to issue securities (both new equity capital and bonds) to investors.

All three courses of action led to a fall in the level of bank deposits relative to what would otherwise have happened. They all caused the destruction of money balances.

The mechanics of money creation and destruction are critical to the analyses in this volume, and are discussed in other chapters. At the risk of repetition, some amplification is needed now. When a bank sells anything to a non-bank, the non-bank pays for it by a deduction from his/her bank deposit, which then falls; when a bank loan is repaid, a money balance in a deposit is used to cancel the loan, and both the loan and the deposit disappear from the bank's balance sheet and the economy; and, when someone subscribes for a new issue of securities by a bank, the investor's bank deposit falls by the value of the newly-issued securities that are being bought. In short, in late 2008 and early 2009 compliance with the official injunctions implied contraction of banks' assets and the quantity of money.

Over the five years from autumn 2008 banks in the advanced countries did much to meet the new, much tighter regulatory standards. The result was that money growth was negligible or very low in all the countries involved, and so was the rate of increase in nominal GDP. That may sound worrying or even bizarre, given that the G20 meetings in late 2008 were concerned to combat the threat of global recession. Indeed, the statement just made – that officialdom caused a collapse in money growth by its regulatory squeeze – may astonish readers who regard officialdom as blameless and the bankers as “banksters”. But the statement is pivotal to the argument of this chapter and as a preliminary to understanding why QE was imperative in early 2009.

The Italian economist, Rainer Masera, has pointed out that “a fallacy of composition” may have been at work in official thinking. It is of course true that, when a particular bank boosts its capital and liquid assets relative to its competitors in the same economy, that particular bank is stronger in relative terms and more resilient to shocks. The result is benign in that sense. But, if all the banks in an economy try to boost capital and liquidity as a proportion of assets, and if they do so by cutting assets, the result is a credit crunch that may be totally inappropriate in a depressed macroeconomic conjuncture. The raising of banks' capital/asset ratios, as one item in an agenda of so-called “macro-prudential regulation”, can be mishandled. To quote Masera's words, it can culminate in “a negative

perverse loop” where “economic activity falls with a further deterioration in the credit quality of banks’ portfolios”.³¹ Masera did not refer to the quantity of money, but – of course – if banks’ assets fall, in practice their deposit liabilities are likely to fall too.

How much did bank lending weaken after 2008? As far as the UK is concerned, the relative significance of different influences on changes in the quantity of money can be identified from official data on the so-called “credit counterparts” to broad money growth. The information in the next section relates to the M4 aggregate in the UK, even though – as was remarked earlier – M4x is the right aggregate in the context.³² M4 was appreciably larger (by about a third in the Great Recession years) than M4x, because it included money balances held by so-called “intermediate other financial corporations”, which are not genuine non-banks. Figure 2.1 shows the levels of M4 and M4x since 1998. The concluding section will suggest that the credit counterparts for M4 provide a sufficiently reliable guide to the situation, despite the differences between M4 and M4x.

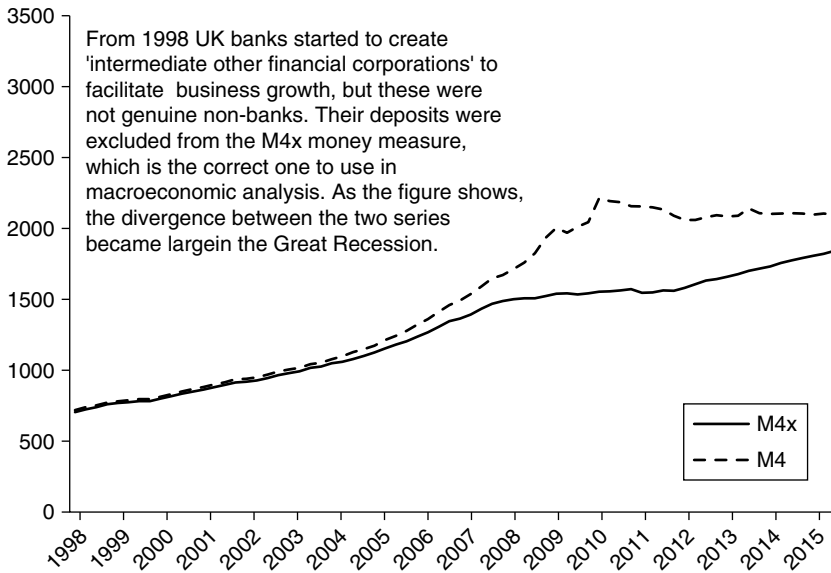


Figure 2.1 The divergence between the UK’s M4 and M4x money measures (levels of M4 and M4x, in £ billions, quarterly data from the Bank of England)

IV

The majority of banks exist in order to generate profits for their shareholders. They grow their balance sheets by adding assets on one side of the balance sheet and financing these assets by incurring liabilities on the other side. The profits come of course from charging a higher interest rate on the assets than is paid on the liabilities, as well as levying fees for arranging loans and providing other services. Liabilities are dominated by deposits, but they are not exclusively deposits. It follows that:

The growth of deposits = the growth of banks' assets minus the increase in non-deposit liabilities.

Non-deposit liabilities are mostly banks' capital, notably the equity capital which belongs to the shareholders, but also include bond liabilities. Assets can be claims on the domestic public sector ("the state"), the domestic private sector and the external sector. So the growth of deposits can be seen as reflecting changes in banks' claims on the three sectors minus the increase in non-deposit liabilities.

The bar chart in Figure 2.2 shows the size of these influences on M4 in the five years to mid-2008 (that is, the five years before the radical upheaval in bank regulation which followed the Lehman crisis). Figure 2.3 shows the same set of numbers, but for the five years after mid-2008 (that is, as banks responded to the regulatory onslaught on their businesses). A comparison of the two charts shows the radical difference between the two periods. In the first five-year period banks were expanding their loan portfolios aggressively, with total new claims on the private sector increasing by almost £1000 billion.³³ The growth of bank lending *exceeded* the growth in the quantity of money, which was a bit more than £700 billion. The main factor explaining this gap was that banks had to increase their capital, evidenced in the £186 billion increase in their non-deposit liabilities. (Note that this is a *deduction* from M4, with a bar in Figure 2.2 that is negative and lies beneath the zero line.) Meanwhile the public sector contribution to money growth was small, but negative. From 1985 to 2009 UK official policy was to "fully fund" the budget deficit, so that public sector transactions had little effect on the quantity of money.³⁴ In this five-year period such transactions reduced M4 by £38 billion, a minor influence on the overall picture.

In the second five-year period the M4 quantity of money continued to expand, but at an annual rate of less than a third that in the previous five years. Although the growth of bank balance sheets was therefore much slower than before, the banks had to raise more capital because of the

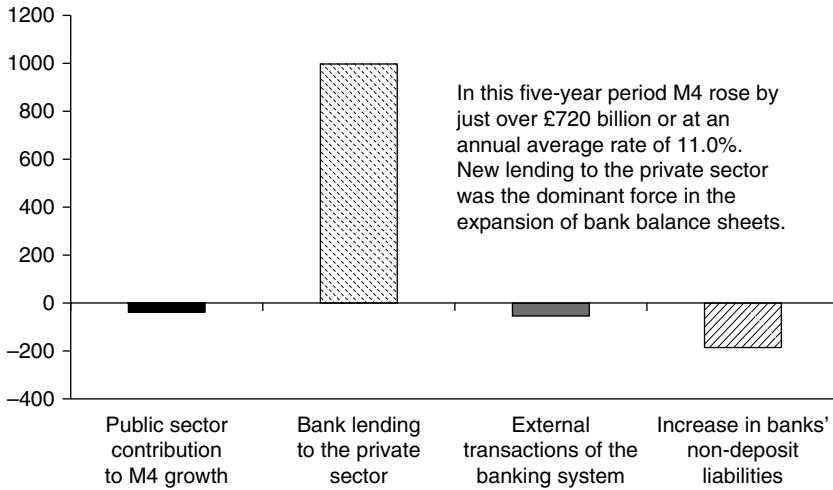


Figure 2.2 Influences on the growth of money in the five years to mid-2008 (bars are of credit counterparts to cumulative change in M4 over five years to mid-2008, in £ billions)

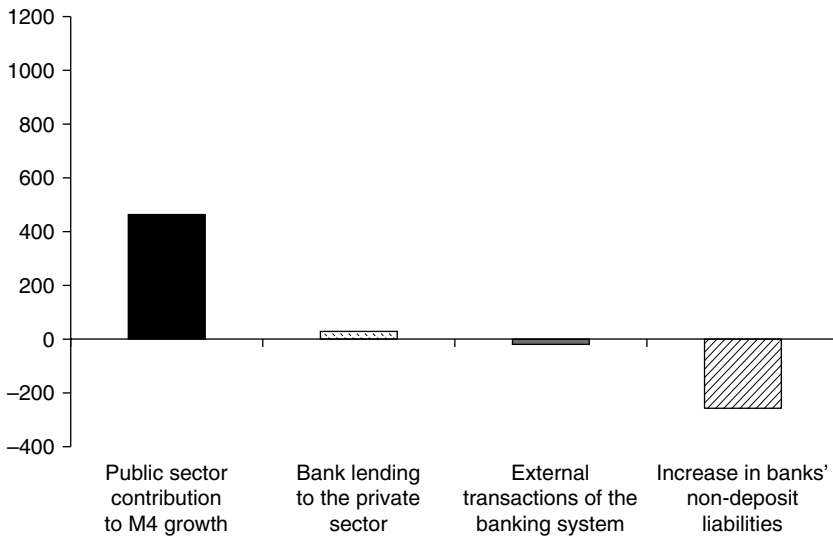


Figure 2.3 Influences on the growth of money in the five years to mid-2013 (bars are of credit counterparts to cumulative change in M4 over five years to mid-2013, in £ billions)

regulators' demands. In this five-year period non-deposit liabilities went up by over £257 billion. From late 2008 official disapproval of the amount of risk in UK banks' balance sheets was a major worry for their managements. They virtually stopped expanding claims on the private sector, which went up by a mere £29 billion. (Some new lending was made, but it was offset by the shedding of low-quality loans and so-called "toxic securities".)

Here we come to the key message. If the effect of the public sector's transactions on M4 had been the same in the five years to mid-2013 as in the previous five years, the M4 quantity of money would have fallen. Indeed, it would have fallen substantially, by hundreds of billions of pounds. The sum of the increase in non-deposit liabilities and new bank lending would have been negative by about £200 billion and the public sector's own transactions would have taken the figure down by a further £38 billion. Sure enough, a squeeze of the sort implied by these numbers would have attracted money balances to come in from the rest of the world. So M4 might not in the end have dropped by the full £200 to £250 billion indicated by the analysis.³⁵ But there would have been a big drop, all the same. Whereas M4 money growth in the five years to mid-2008 was 11 per cent a year, it would probably have been negative in the five years to mid-2013.

Happily, a major policy change occurred in early 2009, with the announcement of QE. The nuclear weaponry of macroeconomic policy was activated. The public sector's transactions were a large positive shock to the quantity of money, as the Bank of England bought gilt-edged securities (particularly medium- and long-dated gilt-edged securities) from the private sector, including private sector non-banks. According to the statistics, the public sector's transactions added £463 billion to M4 in the five years to mid-2013. The number is somewhat higher than the outstanding QE stock, officially put at £375 billion, but "in the same ballpark".³⁶

A reasonable conclusion from the data is that the de-risking of bank balance sheets (the shedding of risk assets and the raising of large amounts of capital) from autumn 2008 cut the quantity of money drastically. If an offsetting force of some kind had not been at work, if the monetary megatons from QE had not been delivered, the fall would have been in the hundreds of billions of pounds. Although no one knows exactly the size of the fall that would have occurred in the counterfactual (that is, with no QE), a plausible initial hypothesis is that QE and related operations added more than £400 billion to M4 in the five years to mid-2013. So without QE and those operations M4 in mid-2013 would be about £400 billion lower than it actually was. As M4 was just under £2100 billion at June 2013, it would instead have been about £1700 billion. M4 in mid-2008 was about £2000

billion. The implied result is that, without QE, M4 would have declined by perhaps 10 to 15 per cent from its mid-2008 level instead of rising by about 5 per cent.

V

Let it be conceded that the use of credit counterpart data relating to M4, instead of to M4x, is imperfect. But analysts have to cope with official statistics as they are, and not as they might be in an imaginary utopia. For all the problems, enough information is in the public domain to be confident that credit counterpart analysis for M4x would yield much the same conclusion as that just drawn for M4. Helpfully and vitally, the Bank of England publishes figures for bank lending to the non-bank private sector excluding the irritating “intermediate other financial corporations”.

The data for this aggregate, termed M4Lx for short, confirm that such lending was extremely weak – indeed negligible – after the regulatory tightening in late 2008. (Compare Figures 2.4 and 2.5.) In the five years to the third quarter 2008 M4Lx lending was cumulatively £924.1 billion;

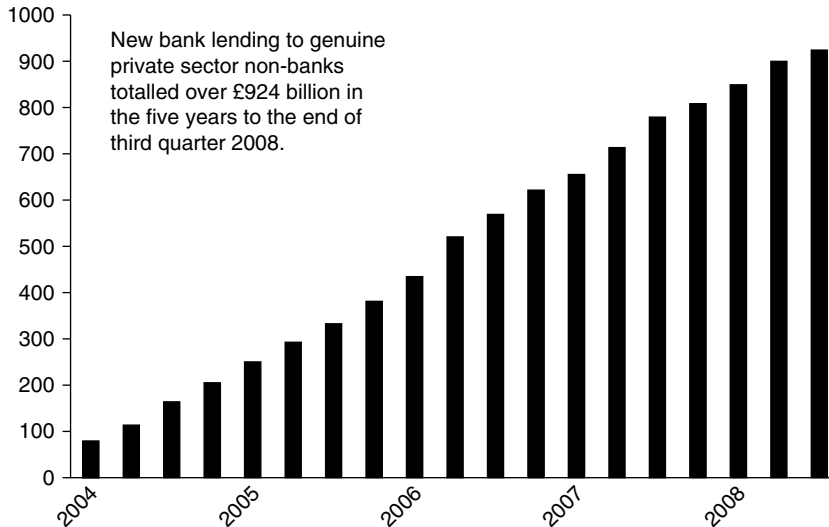


Figure 2.4 Cumulative change in stock of M4x lending, in five years from Q3 2003, in £ billions (bars are of change from Q3 2003 to quarter shown in M4Lx in £ billions)

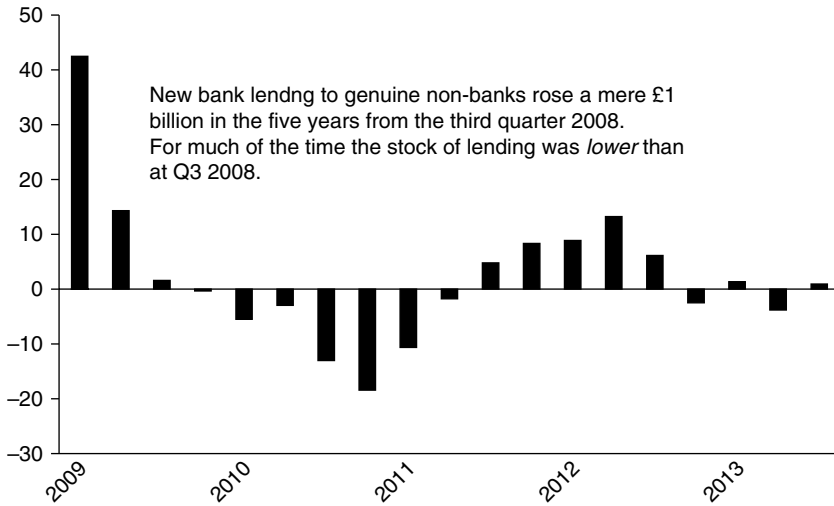


Figure 2.5 Cumulative change in stock of M4x lending, in five years from Q3 2008, in £ billions (bars are of change from Q3 2008 to quarter shown in M4Lx in £ billions)

in the five years from Q3 2008 M4 it was cumulatively a mere £0.9 billion. (In many quarters in that five-year period the stock of lending was lower than at Q3 2008.) Further, the capital requirements for the IOFCs were very low, since managements structured them with the aim of bypassing official capital adequacy rules. As the IOFCs are being closed down gradually at the time of writing (September 2016), the capital-raising of the main banking system must have been similar to that of the main system plus the IOFCs during the critical period.

If the nuclear option of QE had not been exercised from March 2009, the weakness of bank lending and the capital-raising efforts mandated by officialdom would have implied a drop in the UK's quantity of money in the five years from mid-2008 of "hundreds of billions of pounds". That is in line with the author's suggestion in his *Financial Times* letter of 22 July 2013. The conclusion of the work on the M4 credit counterparts carries over to the more interesting and important M4x. The achievement of QE was to stop a big fall in the quantity of money. That fall would otherwise have occurred and been catastrophic in its consequences.³⁷ The disinflationary pressures on the UK economy in the five years from autumn 2008 were harsh and unwelcome; they would have been even more ferocious if QE had not been implemented. Halligan's accusation in summer 2009 of "grotesque policy vandalism" was totally misguided, as were numerous



other verbal bombardments against QE in the media. Contrary to the July 2013 article by Jonathan Davis, the information available allows rigorous and quantitative analysis that is every bit as objective as most work in macroeconomics.

But the successful implementation of QE does not justify any applause for the Bank of England. The Great Recession of late 2008 and early 2009 could have been avoided if central bankers and regulatory officialdom – including the top people at the Bank of England – had had a sufficient grasp of the pertinent areas of monetary economics. Key individuals with immense policy-making power, notably Ben Bernanke and Mervyn King, seem not to have recognized in late 2008 the likely adverse impact of the tightening of bank regulation on the growth of the quantity of money. In early 1936, just as his *General Theory* was about to be published, Keynes wrote in a letter to *The Times*, “no question is more important than the principles on which the Bank of England and the Treasury should fix the quantity of bank money. It has not been discussed lately as much as it deserves to be.”³⁸ Over 80 years later that stricture remains applicable.

NOTES

1. Liam Halligan ‘QE just acting as a sugar rush for insolvent banks that deserve to fail’, *Sunday Telegraph*, 4 July 2009.
2. As late as October 2014, one of his columns (‘Monetary policy: an unconventional tool’, *Financial Times*, 5 October 2014) raised “questions about whether [QE] has worked”. See also Dan Conaghan *The Bank: Inside the Bank of England* (London: Biteback Publishing, 2012), pp. 227–8 for a wider scepticism about monetary policy.
3. Michael Woodford ‘Bernanke should clarify and sink QE3’, *Financial Times*, 2 August 2011.
4. Jonathan Davis ‘The art and artifice of Fed-watching’, 15 July 2011.
5. The joint letter (‘Theories look flimsy if they are misunderstood’, *Financial Times*, 1 September 2011) carried the signatures of Jamie Dannhauser, Michael Oliver and Gordon Pepper. Oliver and Pepper are discussed below in Chapter 8, pp. XXX. The other letter – which in fact related to American monetary policy – was Tim Congdon ‘Quantitative easing in the USA was both desirable and necessary’, *Financial Times*, 22 July 2013.
6. Tim Congdon and Liam Halligan ‘The debate: is there an inflation bubble?’, an exchange in *The Sunday Telegraph*, 15 February 2014.
7. The definition of QE is beset by ambiguity, inconsistency and muddle. For present purposes QE is understood to consist of operations by the state (either the central bank or the government) to purchase assets from genuine private sector non-banks with funds borrowed from the commercial banking system. Such operations boost the monetary base when conducted by the central bank, which credits sums to commercial banks’ cash reserves with it. However, if the government makes the asset purchases, no effect on the base occurs. The important effect for the macroeconomic outlook is the increases in money held by private sector non-banks, that is, the quantity of money broadly defined. The subject is covered in Chapter 4 of Tim Congdon *Money in a Free Society* (New York: Encounter Books, 2011). The phrase “quantitative easing” was first

used by Richard Werner in commentary on Japanese monetary policy in the mid-1990s, notably in the title of an article in *Nihon Keizai Shimbun* on 2 September 1995. Werner used the phrase to refer to central bank operations to boost the monetary base in order to stimulate bank lending. It is clear from his work that he was interested in the effect on bank lending, not on the quantity of money. It is also clear that the Bank of England's QE exercise from March 2009 was intended to increase the quantity of money, broadly defined, as stated by Mervyn King in an interview (with Stephanie Flanders) for the BBC at the time. In effect, there are two notions of QE, a UK-style QE and a Japanese-style. The inspiration for QE operations of the UK kind – where the asset purchases were of long-dated government bonds from non-banks with an immediate impact on the quantity of money – can be found in Keynes's work, notably in the advocacy of monetary policy *à outrance* at the end of *The Treatise on Money: 2. The Applied Theory of Money*. (Elizabeth Johnson and Donald Moggridge [eds] *The Collected Writings of John Maynard Keynes*, vol. VI [London and Basingstoke: Macmillan for the Royal Economics Society, 1971, originally published 1930], p. 347.) The author – who was a vocal supporter of UK-style QE in early 2009 – acknowledged his debt to Keynes in this area of economics in, for example, Tim Congdon 'What is to be done about Japan's financial crisis?', *Central Banking* (London: Central Banking Publications), May 2002, vol. xii, no. 4. In his view Keynes is the true originator of the ideas behind the Bank of England's QE exercises. See Tim Congdon 'Who invented QE?', *Economic Affairs* (London: Institute of Economic Affairs), October 2012 issue, vol. 32, no. 3. In qualification, Keynes's thinking about the most aggressive forms of monetary easing was influenced by Ralph Hawtrey at the Treasury. Hawtrey also advocated deliberate expansion of the quantity of money to combat severely depressed economic conditions in, for example, his *Trade Depression and the Way Out* (London: Longman, Green & Co., 1931, 2nd edition, 1933). (Note that the phrase "monetary policy *à outrance* is sometimes criticized as not being idiomatic French. The correct phrase is said to be "monetary policy *à l'outrance*". In fact, both usages are acceptable.)

8. See pp. XXX above in Chapter 1.
9. This part of the theory of monetary policy suffers from a common fallacy, which seems to have begun with Nicholas Kaldor in a 1982 pamphlet, *The Scourge of Monetarism* (Oxford: Oxford University Press). Kaldor accepted that equality of money demand with the quantity of money balances created by the banks is one of the economy's equilibrium conditions. One feature of an economy with bank credit is that a divergence between money demand and supply can be eliminated by a change in the quantity of money. For example, someone with an excess money balance might repay a bank loan, which both reduces the aggregate quantity of money and restores this individual's money equilibrium. Kaldor's fallacy is the proposition that changes in the quantity of money (as a result of adjustments to agents' bank borrowings) are the *only* way in which monetary equilibrium is maintained in a modern economy with fiat money. (Kaldor's idea is obviously inapplicable in a commodity-money economy.) The proposition is associated not just with the correct statement that the quantity of money can be and much of the time is "endogenous" (that is, the result largely of processes in the banking system not under direct official control), but also with the implausible claim that the quantity of money is determined by national income, where national income is to be viewed as set by other entirely non-monetary means. (In the crudest versions national income is a multiple of investment, which depends on the private sector's "animal spirits".) The easiest way of dismissing Kaldor's ideas is to note that new bank credit is a tiny fraction (usually less than a quarter per cent) of the value of all transactions, while the levels of transactions and national income are positive whether new bank lending is positive, negative or nil. Basil Moore's *Horizontalists and Verticalists: the macroeconomics of credit money* (Cambridge: Cambridge University Press, 1988) is sometimes regarded as the best volume-length discussion of endogenous money. For a sympathetic critique of the more extreme statements about endogenous money, see Sheila Dow 'Endogenous money: structuralist', pp. 35–51 in Philip Arestis and Malcolm Sawyer (eds) *A Handbook*

- of *Alternative Monetary Economics* (Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing, 2006), particularly p.44. Also interesting are several papers in Victoria Chick *On Money, Method and Keynes* (London and Basingstoke: Palgrave Macmillan, 1992) and Victoria Chick *Macroeconomics after Keynes* (Cambridge, MA, USA: MIT Press, 1983). Chick and Dow notice that, if Kaldor and Moore were right, Keynes’s liquidity preference theory of the rate of interest – and indeed virtually all of Keynes’s monetary thinking – would need to be abandoned. According to Chick, “one concludes that money is neither purely exogenous nor purely endogenous. Which is the better description depends on circumstances.” (Chick *Macroeconomics after Keynes*, p.236.)
10. Like so much of monetary economics, the precise status of the idea of “monetary disequilibrium” is debated. The idea clearly implies that agents are “off their money demand curves”, which upsets some economists who are wedded to the view of the world as populated by rational individuals who always fulfil plans. (To be “off a demand curve” implies that a person’s or company’s behaviour is not fully in accordance with that implied by a well-specified demand function, which at least superficially is irrational. But the person or company may not be irrational. They may simply be having difficulty in reaching a preferred situation.) Papers were written in the 1970s and early 1980s on “disequilibrium” or “buffer-stock” money, almost as if the problem of eliminating imbalances between money demand and supply were a new topic. See, for example, ‘Disequilibrium money: a note’, pp.254–76 in Charles Goodhart *Monetary Theory and Practice: the UK experience* (London: Macmillan, 1984).
 11. The critique of the present argument in Chapter 3 by Ryland Thomas turns on two ideas, that the impact effect of QE operations on the quantity of money can be diluted by second- and third-round effects, and that changes in the velocity of circulation disrupt the equi-proportionality of changes in the quantity of money and national income.
 12. See the Introduction pp.XXX for more on the significance of a broadly-defined money aggregate. Government balances are excluded because the government is so credit-worthy that its spending behaviour is little affected by the size of its money balance, which is usually maintained at the central bank. See note 12 to the Introduction for more on the adoption of the M4x aggregate in the UK.
 13. See Norbert Janssen ‘Measures of M4 and M4 lending excluding intermediate other financial corporations’, pp.1–4, *Monetary & Financial Statistics* (London: Bank of England), May 2009 issue. The Bank of England seems to be exceptional in the care it has taken to exclude IOFC balances from money. Other central banks have paid the topic less attention, and apparently not realized the serious distortion that such balances can cause in the interpretation of money data.
 14. As noted in the Introduction (pp. XXX), the monetary base consists of the liabilities of the central bank, including the cash reserves lodged with the central bank by the commercial bank, and Milton Friedman and others believed in a fairly mechanical link between the monetary base and the quantity of money.
 15. In the 2014 exchange Halligan’s words were, “Once our banks have ‘fixed’ their balance sheets (by writing down bad debts or, more likely, shoving them on to taxpayers), I believe they will use their QE-bolstered reserves to lend excessively, so boosting broad money and, therefore, inflation.” But he never – in all his other commentary on the wickedness of QE, which extended over more than five years – mentioned actual trends in broad money growth as relevant to inflation. It is important to realize that Halligan was by no means alone in thinking that the several-fold expansion in the monetary base – in the USA as well as the UK – would result in higher inflation. See Alan Greenspan *The Map and the Territory* (London and New York: Allen Lane, 2013), p.281, and Allan Meltzer *Why Capitalism?* (Oxford: Oxford University Press), pp.121–43.
 16. The classic reference here is to Eugene Fama ‘Banking in a theory of finance’, *Journal of Monetary Economics* (North-Holland Publishing Company), vol. 6 (1980), pp.39–57. The central point is that banks’ assets and liabilities must always be equal. So the

expansion of the deposit liabilities (or so-called “inside money”), which make up most of banks’ liabilities, cannot make anyone better off. Money growth therefore does not represent a positive wealth effect and, according to Fama, cannot affect anything. Of course, if this argument can be made about commercial banks’ liabilities, it can also be made about the central bank’s liabilities (“outside money”). Fama seems not to have appreciated this, but it is obvious. If central banks’ assets are entirely claims on the private sector (such as the mortgage-backed securities now held in large amounts by the Federal Reserve) and central bank liabilities are also held 100 per cent by the private sector, the private sector cannot be better off if the central bank expands. The situation might appear more promising if central bank assets are claims on government. But – if Barro’s contention that public debt is not net wealth in the hands of the public is accepted – then again an increase in the monetary base as a result of central bank acquisition of government debt is not a positive wealth effect. (Robert Barro ‘Are government bonds net wealth?’ *Journal of Political Economy*, vol. 82, no. 6 [Chicago: University of Chicago Press, 1974], pp. 1095–117.) In short, if the thesis of Fama’s 1980 article were right, monetary policy – understood as the consequences of changes in the balance sheets of either the central bank or the commercial banks – could not affect anything. “Fama’s attack on the problem of integrating monetary theory and value theory is radical: he simply abolishes monetary theory.” (Kevin Hoover *The New Classical Macroeconomics: A Sceptical Enquiry* [Oxford, UK and Cambridge, MA, USA: Basil Blackwell, 1988], p. 5.) The conclusion is peculiar, even crazy. Evidently, something has gone wrong. Might one make the modest suggestion that an increase in the quantity of money influences the economy by a mechanism other than a wealth effect? In an interview for a *New Yorker* journalist in 2009, when asked about the causes of the downturn, Fama replied, “We don’t know what causes recessions. . . We’ve never known.” (Philip Mirowski *Never Let a Serious Crisis Go to Waste* [London, UK and New York, USA: Verso, 2013], p. 179.)

17. Mark Blaug *Economic Theory in Retrospect* (Cambridge: Cambridge University Press, 4th edition, 1985), p. 633. Despite the power of the quantity theory to explain nominal national income in the long run, it plays no role in short-run macroeconomic forecasting, which is instead based on the Keynesian income–expenditure model. See footnote 21 below.
18. The implications of this point for the income–expenditure circular flow, as taught in elementary textbooks, are unsettling, as explained in Tim Congdon ‘A critique of two Keynesian concepts’, pp. 44–76, in Steven Kates (ed.) *What’s Wrong with Keynesian Economics* (Cheltenham, UK and Northampton, USA: Edward Elgar Publishing, 2016).
19. Keynes *Treatise on Money: 1. The Pure Theory of Money*, chapter 15, pp. 217–30.
20. The standard reference is Ben Bernanke and Mark Gertler ‘Inside the black box: the credit channel of monetary policy transmission’, *The Journal of Economic Perspectives*, vol. 9, no. 4 (autumn 1995), pp. 27–48. The word “creditor”, implying the noun “creditorism”, appeared in Ben Bernanke and Alan Blinder ‘Credit, money and aggregate demand’, *American Economic Review*, vol. lxxviii, no. 2, pp. 435–9. (See p. 438.) Bernanke and Blinder apparently believed that what they termed “credit shocks” had a direct effect on national income and expenditure. In fact, most credit is extended to purchase existing capital assets. Credit transactions are therefore part of Keynes’s “financial circulation”. They have no direct, first-round effect on his “industrial circulation”, which comes to the same thing as the income–expenditure circular flow. As Keynes’s “effective demand” (which affects output and employment in the textbooks) arises inside the income–expenditure circular flow, the overwhelming majority of credit transactions have no direct, first-round effect on aggregate demand or national income.
21. Most economists are taught the Keynesian theory of national income determination, which says that national income is a multiple of investment. The theory originates in Keynes’s 1936 *The General Theory of Employment, Interest and Money*, but most

- instruction is not from Keynes’s book, which is barely readable except to specialists, but from a textbook in the tradition of Paul Samuelson’s 1948 *Economics* (York, PA: McGraw-Hill). A surprisingly high proportion of them come to believe that this is the *only* such theory. It is in fact a theory of the determination of *real* national income *in the short run*; it is not a general theory at all. It is useless in understanding both the many-fold changes in national income in nominal terms that occur over the long run, and the impact of banking and changes in the quantity of money on expenditure and incomes in the short run. Economists indoctrinated in the Keynesian approach realize, when faced with events like the Great Depression or the Great Recession, that banking and money must be integrated into the analysis somehow. But they attempt this integration by appealing to categories (“the rate of interest”, most obviously) that are part of textbook Keynesianism, and just cannot see the significance of the stability of agents’ desired ratio of money to income and wealth in the transmission story. Of course the two paragraphs in the text could be expanded enormously in analyses where that stability is crucial. See, for example, Tim Congdon *Money and Asset Prices in Boom and Bust* (London: Institute of Economic Affairs, 2005).
22. Michael Woodford’s work – and that of the Swedish economist, Lars Svensson – are examples of an exclusive focus in macroeconomic analysis on “the rate of interest”, meaning just one rate, the instrument rate or policy rate set by the central bank. By assumption, agents’ attempts to keep actual money balances in line with the demand to hold them cannot matter in the Woodford–Svensson account of how the economy works. *Indeed, they cannot even appear in that account.* For Woodford’s influence on European monetary policy in the years before the Great Recession, see Chapter 4, pp. XXX. For an example of Svensson’s approach, see his paper ‘Monetary policy and real stabilisation’, National Bureau of Economic Research, working paper no. 9486 (Cambridge, MA: NBER, February 2003).
 23. See footnote 20 above for “credittism”. For another example of a much-cited pundit who sees everything in terms of the rate of interest and bank lending, see Richard Posner’s *The Crisis of Capitalist Democracy* (Cambridge, MA, USA and London, UK: Harvard University Press, 2010). On p. 36 the “monetarist fallacy” is said to be that the Fed can always reduce the Fed funds rate to a sufficient level “by increasing the amount of lendable funds that banks have”, when of course monetarism in fact focuses on the quantity of money; on p. 282 the level of bank deposits is said to matter because it determines “the amount of lendable money”, which is a complete misunderstanding. (Extra loans create new deposits, and national income and wealth adjust to the deposits thereby created.)
 24. For the claim that in the USA “unconventional monetary policy”, which was dominated by QE, was concerned to narrow credit spreads, see Chapter 9, pp. 237–60, in Alan Blinder *After the Music Stopped* (New York: Penguin Press, 2013).
 25. The author of course accepts that the price of bonds (and hence bond yields) may adjust to a mismatch between money demand and supply. So “the rate of interest” in the sense of the level of bond yields is a monetary variable, as Keynes’s liquidity preference theory argues. But an economy can be imagined with money and equities and real estate, and no bonds. In that economy the relationship between money on the one hand and national income and wealth on the other will survive, but – by assumption – it cannot have anything to do with the rate of interest in the sense of bond yields. The point, which is obvious, is explained also on pp. 327–8 of his *Money in a Free Society* (New York: Encounter Books, 2011).
 26. In 1945 claims on the British state represented over 83 per cent of the assets of the London clearing banks, where the deposit liabilities of these organizations were the dominant constituent of the UK money supply. By contrast, in 2006 – just before the Great Recession – claims on the British state were less than 1 per cent of the UK banking system’s total assets. But this vast change in banks’ asset composition had no bearing on banks’ ability to honour payment instructions or on the role of bank deposits in transactions. The monetary theory of national income determination holds

- regardless of banks' asset composition, as long as banks are able to honour their obligations to depositors.
27. Chick noted that banks could create money by the purchase of existing securities (or "seasoned securities") in Victoria Chick *Macroeconomics after Keynes* (Cambridge, MA, USA: MIT Press, 1983), p. 235. In that event money creation could occur with no new overall credit extension in the economy.
 28. The British prime minister in late 2008, Gordon Brown, believed that bank recapitalization was essential to ending the crisis. See below, pp. XXX in Chapter 7. This belief in the prime importance of bank recapitalization may have reflected conversations with Mervyn King, governor of the Bank of England. See footnote 30 below.
 29. This even became the title of a book, Philip Mirowski *Never Let a Serious Crisis Go to Waste* (London and New York: Verso, 2013).
 30. Mervyn King believed that bank recapitalization was a precondition of financial recovery in late 2008. Further, if the private sector were not prepared to inject new capital, the state should do so on terms that might be punitive to existing shareholders. He has claimed ownership of these ideas, saying that American policy-makers picked them up from the UK example. See footnote 57 on pp. 384–5 of Mervyn King *The End of Alchemy* (London: Little, Brown, 2016). The notion that much more bank capital was needed in late 2008 was related to the proposition that additional bank lending to the private sector was essential to boost private spending. (It is related therefore to the "creditism" espoused by Bernanke and discussed in footnote 20 above.) But no new bank capital is needed if banks expand their balance sheets (and so create money) by acquiring default-risk-free government securities or extra cash reserves. In the author's view the UK's Great Recession could have been avoided entirely if QE on a sufficient scale had been announced in October 2008 instead of bank recapitalization. The argument has been made in several places, but see Tim Congdon 'Bank recapitalisation and the Great Recession', *Standpoint* (London: Social Affairs Unit), December 2015, pp. 42–5.
 31. Rainer Masera 'Six paradoxes of Eurozone economic policies', mimeo, presentation given at the XXVIII Villa Mondragone International Economic Seminar, June 2016. The quotation is from p. 5. Masera has prepared other research in a similar vein with colleagues at the Banca d'Italia. Their work should be compared with the Bank for International Settlements' November 2015 paper on *Assessing the economic costs and benefits of TLAC implementation*. (TLAC stands for "total loss-absorbing capital".) According to the BIS, the purpose of having more capital is that banks are more robust in facing cyclical shocks. But the study says specifically on p. 3 that it is not concerned "to predict what will happen at implementation", overlooking entirely the "negative perverse loop" about which Masera, the author of this chapter and many others have been and remain worried.
 32. The trouble stems from the Bank of England's limited funding for its statistical unit. Numbers have been compiled for the credit counterparts to M4 for several decades back into the past, but they are not available for M4x, simply because of cost.
 33. Remember that this includes claims on "intermediate other financial corporations", many of which were in fact bank subsidiaries. Another problem is that the statistics in the Bank of England's database are often revised. The statement in the text, and the data used in Figures 2.2 and 2.3, are from the database at June 2013, when the first version of this chapter was written. The data used in Figures 2.1 and 2.4 are from the database at August 2016, when the revised version was prepared.
 34. For decades until 1985 the UK authorities varied the maturity profile and instrument composition of its debt sales (and occasional purchases) to influence monetary conditions. This stopped with the announcement of the full funding rule. Thereafter the short-term interest rate became, in effect, the *factotum* of UK monetary policy. The announcement of QE in March 2009 represented a return to the pre-1985 position, although most policy-makers would have struggled to identify the rationale for their actions. Mervyn King at the Bank of England had some awareness of the historical background. See King *End of Alchemy*, pp. 182–3.

35. A body of theory known as the monetary approach to the balance of payments is relevant here. The key contention – first enunciated in the eighteenth century by Adam Smith and David Hume in their critique of mercantilism – is that economies’ need for real money balances is related to real incomes and output, and is unaffected by exchange controls, trade policy or a credit squeeze. A credit squeeze reduces the amount of money created by domestic agents. The effect of a credit squeeze is therefore to attract money balances from abroad, to make good the shortfall in real money balances. One reference is Jacob Frenkel and Harry Johnson (eds) *The Monetary Approach to the Balance of Payments* (London: Allen & Unwin, 1976). If Bernanke’s creditism were valid, the monetary approach to the balance of payments – a core element in traditional monetary economics – would have to be abandoned.
36. The main reason for the excess of the public sector contribution to M4 growth over the stock of QE assets is that the continuing budget deficit from 2009/10 onwards was financed to a significant extent by the issuance of short-dated gilts that were attractive to the banks.
37. The analysis in this chapter has been extremely critical of Ben Bernanke and Mervyn King. To give King his due, he was the key protagonist of QE in the Bank of England in early 2009. See Conaghan *The Bank*, pp.202–3. Bernanke also proved effective in backing the right policies from early 2009 onwards. Nevertheless, the author sticks to his view that neither of them appreciated how the mandatory bank recapitalization and tightening of regulation in late 2008 would damage money growth in the two economies where they were responsible for the key high-level banking policy decisions.
38. Johnson and Moggridge (eds) *Activities 1931–39: World Crises and Policies in Britain and America* in *Collected Writings of Keynes*, vol. XXI (London and Basingstoke: Macmillan for the Royal Economics Society, 1982), p. 381.