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Can the Bank of England Do It? The Scope and Operations of the Bank of England's Monetary Policy

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This paper examines where the Bank of England goes after the quantitative easing that was supposed to overcome the effects of the 2008 financial crisis. We argue that there can be no going back to the pre-crisis orthodoxy of inflation-targeting. This orthodoxy was incorrectly credited for a period of macroeconomic stability that was subsequently shown to be illusory. As a result of QE, the Bank of England now has a balance sheet whose running down would deflate the financial system. Instead we argue that the Bank should be given an enhanced financial stability mandate in the form of a target to conduct open market operations to keep the yield curve stable. The history of the Bank shows that these operations in the capital market were conducted through most of that history. This mandate will require more explicit coordination with the Treasury, but need not eliminate the independence of the Bank.

The main finding in the paper is that, whereas the ability of the Bank to control inflation is itself questionable, the effectiveness of the Bank's open market operations in regulating the liquidity of the banking and financial system is demonstrated by Quantitative Easing. Given the limitations to the Bank's power, we caution against more fundamental reforms that involve extending the responsibilities of the Bank without increasing its capacity to deliver the outcomes implied by those additional responsibilities. However, we note that some recent suggestions, such as a higher inflation targets and ECB-style targeted refinancing operations have merit.[1]

[1]The authors are grateful to Michael Davies, Andy Denis, Charles Goodhart and John Weeks for comments on an earlier draft of this report, and to participants at a recent PEF workshop where many of these ideas were discussed. They bear no responsibility for any remaining errors in this report.

In 1929 John Maynard Keynes and Hubert Henderson published a pamphlet entitled 'Can Lloyd George Do it?' explaining their challenge to "a fashionable view" in 1924 that the economic problems of the time were due to the "impoverishment and disorganisation left behind by the [First World] war". In that erstwhile fashionable view, all that was necessary to recover the sunny, predictable comforts of Edwardian empires was a stabilisation and return to the monetary arrangements that obtained before the war.

It is similarly argued today, following the 'shock' of the 2007 crisis and the recent economic stabilisation, that the elimination of all those 'extraordinary' fiscal interventions and 'unconventional' monetary measures is all that is necessary for economies to revert to the prelapsarian state of stable economic growth, with low inflation steered by independent monetary policy committees. This is expressed by the US Federal Reserve's recent policy of ceasing quantitative easing and driving its interest rates back to 'normal' levels as employment rises.

This report argues that such a reversion to pre-crisis central banking is no longer possible. Nor is it desirable. The principal reason why pre-crisis central banking is not possible is that the Bank of England now has a substantial balance sheet that cannot be reduced without adverse consequences for capital markets in Britain. The principal reason why pre-crisis central banking is not desirable is that it was precisely that model of central banking, restricting monetary policy to the management of short-term interest rates, that contributed to the crisis that broke out in 2007 and caught the Bank of England by surprise. The Labour Party's review of policy offers an opportunity to re-examine how central banks can contribute to stabilising economic activity at high rates of employment.

The report is organized as follows. Sections 1 to 3 briefly recount the pre-independence history of the Bank of England, highlighting the development of key policy tools, and the ways the Bank reacted to historical developments. Section 4 discusses the period from independence, in 1997, to the outbreak of the financial crisis in 2007 and 2008, and describes the institutional structure and modus operandi of the Bank at the time the crisis struck. Section 5 examines the response of the Bank to the crisis in the form of Quantitative Easing, and argues that this period demonstrates the limits of the Bank's powers. Section 6 puts forward a new, post-Quantitative Easing

framework for the Bank, based around stabilization of the yield curve. Section 7 considers other recent proposals and argues against tasking the Bank with significant new responsibilities. Section 8 concludes.

1. The creature of the capital market

The Bank of England was set up in 1694 by Act of Parliament. Its shareholders subscribed their capital to help the government of King William III in its war with Louis XIV of France. This was more than a patriotic initiative of the Protestant burghers of London to save the Glorious Revolution from Catholicism - it was the establishment of an institution of lasting benefit to the United Kingdom. The Bank was the fruit of a stock market bubble, and its operations since have been inseparable from the complex of securities trading in London. John Maynard Keynes later told the story as follows:

"The expedition of Mr. Phipps (afterwards Sir W. Phipps) to recover a Spanish treasure ship which was believed to have sunk some fifty years before off the coast of Hispaniola, is one of the most extraordinary records of improbable success. He returned to London in 1688, having fished out of the sea a sum estimated at between £250,000 and £300,000 and paid a dividend of 10,000 per cent (even Drake had only distributed a dividend of 4,700 per cent). The excitement and stimulus occasioned by this event was the proximate cause of the remarkable stock exchange boom which reached its climax in 1692-5 and ended with the foundation of the Bank of England, a stock exchange list (with 137 securities quoted) on modern lines, and the reform of the currency by Locke and Newton. The stimulus which this gave to home investment offset the loss of foreign trade due to William's French War, and created an atmosphere of optimism and prosperity which must have been invaluable for the stability of the new regime. The investment boom is of particular historical significance in that it was the first of the public utility booms so typical of later periods (e.g., the railway booms of nineteenth century) being characterised by a number of waterworks flotations."[2]

[2] J.M. Keynes *A Treatise on Money in Two Volumes 2 The Applied Theory of Money* London: Macmillan, p. 135.

The newly-established Bank operated by investing deposits placed with it, and the capital of its shareholders, in government bonds, stocks and shares. The profits on such investments were used to pay dividends to the Bank's shareholders. Fortunately the war with France was settled in 1697, and the Bank's position was strengthened by the collapse in 1720 of its rival the South Sea Company which, incidentally, invested far more in government bonds. The bursting of the South Sea Bubble gave rise to the Bubble Act of that year, which banned the setting up of companies with limited liability except by Royal Charter passed by Parliament.

The Bank of England, like other banks, had the right to issue its own banknotes, but had to stand ready to exchange those notes for gold or silver, and eventually just gold. This obliged the Bank to hold reserves of gold which, having a fixed price, did not bring the bank any profit. This, together with the possibility of a 'run' on those reserves if too many note-holders turned up at its cash tills to exchange their notes for gold, gave the bank its incentive to minimise the issue of its notes, and also to hold a portfolio of loans and bonds on which it could earn some return. The system broke down in 1797 with an unexpected outflow of gold to Paris, where merchants needed it to settle their bills in the wake of the collapse of Revolutionary France's new currency, the *assignat*. Parliament allowed the Bank of England to 'suspend payments', or the exchange of its notes for gold, at the Bank's request.

The 'Suspension', as it was called, lasted until 1821, after which payments were gradually resumed. It gave rise to a golden age of monetary theory in British political economy, whose essential ideas still dominate monetary economics today. Expert opinion on the proper conduct of the Bank of England came to be divided into the Currency and the Banking Schools. The Currency School argued that the note issue of the Bank should be restricted to keep the price of gold stable or, in the more extreme version, should be restricted to the amount of gold reserves held by the Bank. The Banking School, by contrast, argued that the amount of bank notes in circulation should be driven by the 'needs of trade', and therefore that restriction of bank note issue according to gold reserves or conditions in the gold market was an unnecessary constraint on business activity.

The Currency School won out in the short run, with the passing in 1844 of the Bank Charter Act, which gave the Bank of England a monopoly on the banknote issue in

England, but required the Bank to keep that issue in line with the value of its gold reserves, with only a small, 'fiduciary' issue to give the Bank flexibility. The significance of the Act went far beyond the United Kingdom: the principles of a gold-based paper currency were widely discussed and emulated in continental Europe.

Much less widely discussed was the gradual abolition of the Usury Laws. These were originally ecclesiastical laws forbidding the taking of interest, formally banned in all three major Abrahamic religions (Judaism, Christianity and Islam). When Henry VIII broke away from the Roman Catholic Church, its canon law on usury was replaced by an Act of Parliament placing a 10% ceiling on interest. By the end of the eighteenth century, this ceiling had been reduced to 5%. During the French Wars at the start of the nineteenth century, the usury laws were criticised for encouraging speculation, and were even disregarded by the government in its efforts to encourage buyers of government bonds. By the 1820s, the Bank of England had been granted exemption from the usury legislation in its discount business, when the Bank would buy and sell short-term bills (promises to pay a fixed amount in up to three months' time) at a price below the repayment value of the bills that gave a margin (the discount) equivalent to a rate of interest for the period up to repayment.

The usury laws were eventually abolished in 1844. This appeared to give the Bank of England a policy instrument with which to manage its gold reserves: by raising its rate of interest on discounts, the Bank Rate, above rates abroad, it was believed that gold would be attracted to London and exchanged for notes, which could be used to obtain higher returns in the discount and bond markets. Lower interest rates would tend to attract bond-issuers to London, and significantly lower rates would cause an outflow of gold.

2. The Gold Standard

The passing of the Bank Charter Act and the abolition of the usury laws were followed by seven decades of economic growth and stable, or falling, prices, which was widely attributed to the gold standard of the Bank of England's note issue. A more likely explanation of this non-inflationary growth is provided by the abolition of the Corn

Laws in 1846. The flooding of the British market with cheap grain from the Americas in the period up to the First World War not only kept food prices down. With low wages, a large share of manual workers' incomes were spent on food, so that cheap grain imports also allowed the real value of wages to rise, even if there was no rise in their money value. This fed into growing consumer demand among all classes, except rural landowners. Their income from rents was reduced as their tenant farmers' profits succumbed to falling food prices.

Moreover, despite the formal victory of the Currency School, in the actual practice of the Bank of England, it was the Banking School that eventually won out. The growth of the British economy in the nineteenth century was characterised by successive business cycles, whose recessions were usually preceded by banking crises. Such crises tended to arise after booms, during which the growth of trade and a widening trade deficit drew gold out of the banking system and into general circulation or abroad (the so-called internal and external gold 'drains'). In such a crisis, the Bank Charter Act was commonly suspended, so as to allow the Bank of England to issue enough notes to enable commercial banks to settle their obligations to their customers. In 1873, the distinguished editor of *The Economist* magazine, Walter Bagehot, published his famous account of the complex of money and financial markets in London, *Lombard Street*. In this book he recommended that, in a crisis, the Bank of England should lend freely, but at a penal rate of interest to discourage unnecessary expansion of its credit. Inevitably, such lending would require the printing of additional banknotes without backing in gold. From that time onwards, the Bank of England followed this policy of elastic credit.

In the 1860s, another challenge had presented itself in the form of the Companies Acts, which abolished the Bubble Acts and allowed companies with limited liability to set themselves up and issue stocks and shares, subject to having the regulations of a new company registered with a Registrar of Companies, to ensure that companies were properly run and audited. The stock markets in Britain expanded rapidly, much to the relief of the landowning classes who were losing rents from land and feared the loss of their gentlemanly status if they undertook paid labour. Finance now offered a new kind of wealth from which they could draw income. The *nouveaux-riches* who thrived in the new world of finance found a ready entry into polite society in return for adorning the boards of the new companies with titled gentlemen. In this way, cosmopolitan finance fossilised antiquarian social hierarchies and gave rise to the

distinctive feature of British society in which a largely pre-capitalist upper class derives its income and a modern façade from finance.

The effect of this change on banking was rather more exciting. The proliferation of stocks and shares expanded hugely the possibilities of credit creation through what is often called financial innovation. Holders (or buyers) of stocks and shares that were listed on a stock exchange (and therefore had a market price at which the stocks and shares could be bought or sold) found that they could more easily borrow from a bank by offering these as collateral. For their part, banks were more willing to lend against such security, because they could fit such share or bond certificates conveniently into their safes and they knew that, in the event of a default on the loan, they could take the security and sell it for cash, or a bank deposit. By this time, bank deposits were much more widely used as means of payment among the propertied classes. And banks were only obliged to keep a small proportion of their deposits in the form of banknotes or gold. If all else failed, they could take their Treasury bills to the Bank of England for sale at the Bank's official discount, or Bank Rate. In this way, the Bank found itself at the heart of a system of fractional reserve banking.

The expansion of banking spelt the end of the gold standard, because it meant that the backing of the banknote issue by gold reserves was reduced to a purely formal arrangement. Even if there was enough gold to cover the value of banknotes in circulation, there certainly was not enough gold or banknotes to cover the much greater value of bank deposits that were now used as means of payment. As the Edwardian period came to an end, Hartley Withers, Bagehot's successor as editor of *The Economist*, worried about the possibility of a crisis in the event of a general attempt to convert bank deposits into gold or notes, i.e. a general 'run on the bank' that would overwhelm the reserves of the Bank of England.

That crisis came with the outbreak of the First World War. With payments from enemy countries blocked, and the government undertaking huge expenditures on the war effort, gold payments by the Bank of England were suspended for the first time for nearly a century. The suspension was supposed to last for the period of the war. But the outbreak of peace in 1919 gave rise to an international discussion as to how gold payments could be resumed. That discussion occasioned the pamphlet by John Maynard Keynes and Hubert Henderson mentioned at the start of this report.

In Britain there were two obstacles to a return to the gold standard. During the high level of war-time expenditure, prices had more than doubled, and this made Britain's traditional export trade in coal and manufacturing uncompetitive at the pre-War price of gold, which would determine the price of those exports in foreign markets where the currency was on the gold standard. However, the British government had borrowed heavily from abroad during the war, in currencies that remained on the gold standard, in order to pay for imports necessary for the war effort. Under the settlements agreed at Versailles this debt was supposed to be paid by the Germans. In the meantime an exchange rate (price of gold) favourable to exports would raise the cost of servicing that foreign debt. A return to the pre-war price of gold would ease the cost of that financing.

Eventually, Britain went back to the gold standard at the pre-War rate in 1925, and the Bank of England was given the task of maintaining the fixed convertibility of its notes into gold. The efforts of employers and the government to reduce prices in order to make exports more competitive and reduce the foreign trade deficit, which was draining gold reserves from London, gave rise to widespread strikes and social unrest, culminating in the General Strike of 1926. The Bank of England's contribution was to jack up its Bank Rate to a peak of 6.5% in September 1929, in an effort to keep gold deposits in London. Shortly after, the New York Stock Exchange crashed, and the Great Depression started in Europe and North America. The gold standard was abandoned in Britain in 1931, allowing sterling to be devalued. But this, along with the reduction in Bank Rate down to 2% by June 1932, did little to alleviate the economic depression.

3. The Department of the Treasury

The 1930s ended with the Second World War. By then the Bank of England, and in particular its Governor since 1920, Montague Norman, were reviled for their preoccupation with keeping Britain on the gold standard and the ineffectiveness of their monetary policy. The Bank, it was widely believed, had sacrificed British industry in the interests of financial circles in the City of London and foreign investors who kept their funds in London. The Bank was owned by private shareholders, although the

Government had held shares in the Bank since the First World War. In 1946 the Labour Government nationalised the Bank. Thereafter, the Bank of England was formally controlled by the Treasury as the official banker to the Government and manager of the Government's debts and its gold and foreign currency reserves. The Bank was also responsible for regulating banking, conducting monetary policy, ensuring that the official exchange rate against the US dollar was maintained, and administering the exchange controls that prevented British residents from holding foreign currency.

In 1957, the Bank issued a fateful ruling on capital controls that allowed commercial banks in London to hold foreign currency deposits for foreign residents. This was the Bank's contribution to the rise of the Euromarkets: that is, markets in currencies outside their country of issue. These were free markets whose unregulated foreign exchange transactions, and subsequently whose borrowing and lending, fatally undermined the Bretton Woods system of fixed exchange rates agreed by Allied governments in 1944. By the 1960s, Britain and other countries were experiencing increasing difficulties in keeping to the official exchange rates. The Bank was also having problems in enforcing domestic credit regulations, which applied only to official clearing banks. In 1971, the Bank extended the scope of its regulations to all banking intermediaries, under a system called *Competition and Credit Control*. Banks were freed from direct controls over their credit business, restricted now only by reserve ratios, which the Bank decided, and by the rate of interest on discounts, or Bank Rate, which was set by the government.

The liberalisation of credit gave rise to a property boom that collapsed in 1974, followed by a crash of the stock market, rising unemployment and accelerating inflation. In 1976, in the middle of an exchange crisis, the Labour government agreed terms with the International Monetary Fund, in which the Bank of England was bound to controlling Domestic Credit Expansion in a programme that included reductions in the fiscal deficit. The legacy of the old Currency School entered the policy agenda, in the form of monetarism (the notion that inflation could be controlled by controlling the money supply). When the Conservative government came to power in 1979, the Bank was set to controlling the money supply in an effort to reduce inflation, now approaching 25% per year, under the government's *Medium Term Financial Strategy*. The government and the Bank signally failed to achieve the targets for either the money supply or the fiscal deficit set in successive versions of that *Strategy*. Nevertheless, inflation fell, as

the labour market was 'liberalised' by weakening the scope and influence of organised labour, and as public expenditure was reduced in real terms.

In 1985, the Bank of England participated in a meeting of finance ministers and central bank governors of leading capitalist countries, held at the Plaza Hotel in New York, at the invitation of the US Treasury, which was concerned by the consequences for America's export trade and international finance of the high value of the US dollar. The meeting agreed a devaluation of the dollar in which the Bank of England played its part, trading dollars in London. Shortly afterwards, in 1990, Britain entered the Exchange Rate Mechanism of what was then the European Economic Community. The Mechanism was an agreement to keep exchange rates stable within the Community, an obvious way to keep prices stable in countries that import a large proportion of their consumption needs, energy and raw materials. The Bank was supposed to use the government's foreign exchange reserves and its Bank Rate to keep the exchange rate within limits agreed in the Community. However, it became clear that, with Britain as an international financial centre open to capital flows from all over the world, the Bank had very limited means of fixing the exchange rate. On 16 September 1992 (a day that came to be known as 'Black Wednesday') the British public were entertained by the Chancellor of the Exchequer Norman Lamont raising Bank Rate from 10% to 12% in the morning - an effort to attract foreign currency reserves to London in the manner of arbitrage familiar from the Gold Standard days - before announcing in the evening that Britain was leaving the Exchange Rate Mechanism. Sterling devalued and, the following day, Bank Rate was reduced back to 10%.

4. Independence and Crisis

After such a fiasco, the Bank understandably abandoned pretensions to any high profile public role, and retreated to a much more discreet one of implementing the monetary policy of the government. When a new Labour government came to power in 1997, one of the first decisions of its Chancellor was to reform the Bank and the conduct of monetary policy. The Bank was now to set monetary policy, in the form of its official interest rate, independently of the government, and to be guided in this by a target for inflation. The Bank would no longer operate as the government's banker

and broker for its bond issues. However, this monetary policy 'independence' also came with the stripping away from the Bank of its supervisory powers, which were now devolved to a group of self-regulatory agencies for different kinds of financial and banking business, under the overall command of a separate Financial Services Authority. The Bank was effectively reduced to little more than its Monetary Policy Committee of distinguished economists and Bank officials, which sets interest rates; a dealing room that trades securities to make the official rate of interest effective in banking markets; and a cashier who manages the (by now minimal) reserves of banks in the UK and issues banknotes to those banks, debiting the value of those notes to those reserve accounts.

In the decade following its declaration of 'independence', the Bank seemed to be fulfilling its mandate to reduce and control inflation by raising its rate of interest when its Monetary Policy Committee judged inflationary pressures to arise, and reducing that rate if the price level in the economy looked as if it might fall. This was widely hailed as a success. At last the Bank appeared to have found a way of operating effectively to maintain the value of the money that it issues. Sceptics were less convinced by the collective genius of expert opinion in the Monetary Policy Committee. They pointed to the traditional factors which had kept inflation low in the UK: the overvaluation of sterling, which kept import prices low, and the continuing casualization of the workforce, which drove real wages down even as numbers in employment rose. Low inflation also spread throughout the industrialised countries following the East Asian Crisis of 1997-98, which caused a devaluation of the currencies affected and therefore the price of their exports, and China's admission to the World Trade Organisation in 2001, which opened markets in rich countries to cheap manufactured imports from East Asia. Over a century ago, amid the turmoil of China's first republican revolution of 1911-12, the great liberal political economist J.A. Hobson had prophesied that: "Though certain recent observers are disposed to assign to China a slow pace of development in modern capitalistic industry, even a comparatively slow advance might exercise a quite appreciable influence upon the investment market and the commerce of the world. If any large proportion of this flood of cheap, fairly efficient, and rapidly reproductive labour were made available, either by immigration or by foreign trade, for competition in the labour market of the world, it might offset the whole of the influence (on wages) of the declining birth-rate of the Western

peoples. The immediate effect of the effective admission of any large section of China into the world-market would be to depress world-prices."[3]

The other flaw in the arrangements established in 1997 was their insouciance in the matter of financial stability. Widespread financial difficulties were supposed to be dealt with by coordination between the Financial Services Authority, HM Treasury and the Bank. Contrary to Bagehot's 'Lender of Last Resort' doctrine, central bankers were supposed to avoid involvement. As they were prone to saying in the years before the 2008 crisis, the profit motive of commercial banks operating in banking markets gave those banks superior insight into banking 'risks' that government-owned central banks could not obtain.

So it was that in July 2007, when the small Northern Rock Building Society came knocking at the door of the Bank with a request to borrow reserves in order to pay out to its depositors, the Bank was completely unprepared. The building society became the first English bank to collapse since Overend Gurney failed in 1866. British banks had followed American practice since the 1980s, regulating liquidity by selling off portions of their loan book into the market for long-term securities, a procedure known as 'securitisation'. This worked fine, as long as the capital market was liquid enough to absorb such securities. But by the turn of the century, bond markets had become much less liquid and banks had increasing difficulty in keeping their asset portfolios liquid, as lending into booming markets in real estate caused leverage ratios to rise and reserve balances to be squeezed. Northern Rock was merely the first bank to run out of liquidity. Large non-financial corporations, which had loaded up with bank debt to finance mergers and acquisitions in the expectation of being able to repay that debt with the issue of new shares, found themselves similarly embarrassed and cut back on their investments in plant and machinery. In this way, the financial crisis became a full-scale economic depression.

The initial problem for the Bank of England was that virtually the only thing it could do was vary the rate of interest. On the eve of the crisis, in July 2007, Bank Rate peaked at 5.75%. As the crisis proceeded, the rate was rapidly reduced (by March 2009) to 0.5%, its lowest rate in history.

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[3] J.A. Hobson *Gold, Prices and Wages with an Examination of the Quantity Theory* London: Methuen 1913, pp. 136-137.

5. Quantitative Easing

It was the ineffectiveness of these changes that caused the Bank of England to resort to a much older tactic, namely open market operations, or buying securities. This was now called Quantitative Easing, and is advertised on the Bank of England's website as follows: "by creating… 'new' money, we aim to boost spending and investment in the economy".[4] In November 2009, the Bank announced that it would buy £200bn of bonds. This had meagre effects (see below). So, in July 2012, the Bank announced further buying to bring this up to £375bn of bond purchases. Then, in November 2016, as the economy started to slow in the wake of the referendum on EU membership, the Bank announced another bout of purchases to bring the total to £435bn of bonds. To put these purchases into perspective, this quantitative easing amounts to some 20% of the UK's annual national income, or almost a quarter of the total government debt outstanding (see Table 1 and Figure 1).

Holder	**£bn**	**of total**
UK banks excluding BoE APF	170	8%
BoE Asset Purchase Facility (APF)	435	23%
Other Financial Institutions	156	8%
Insurance and Pension Funds	601	32%
Overseas investors	525	28%

Table 1. Holders of UK government debt (gilts), end September 2018 [5]. Source: Bank of England, ONS and authors' calculation

[4] https://www.bankofengland.co.uk/monetary-policy/quantitative-easing

[5] This table and following figure underestimate slightly the gilt holdings of the Bank of England relative to other sectors because of differences in accounting conventions in the data. APF figures are at historical purchase price while all other series are at market value.

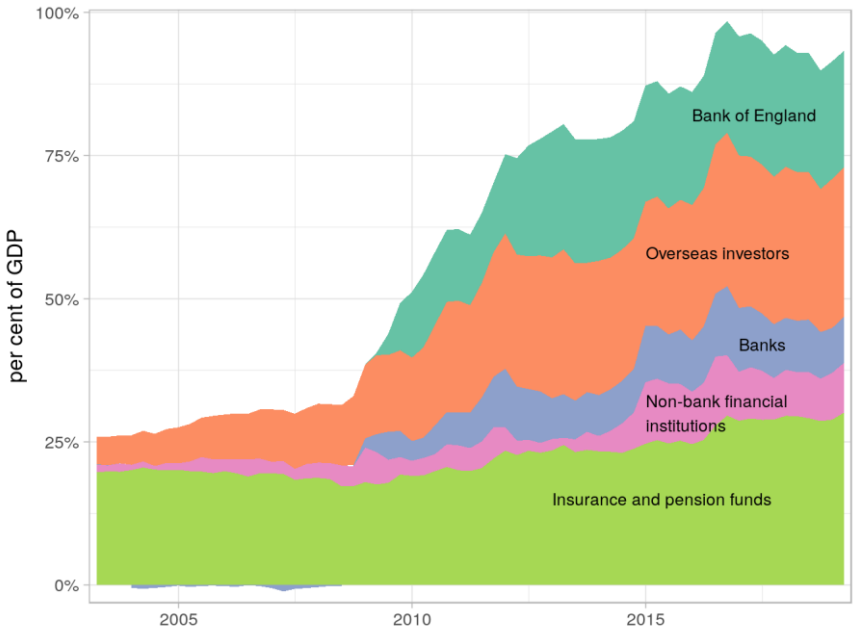

Figure 1. Holders of UK government debt securities (gilts)

Source: Bank of England, ONS and authors' calculation

How does quantitative easing work? Despite the commonly-held view that the Bank is 'printing money' to put into circulation in the economy, in fact very few additional banknotes are actually printed. The bonds that are bought by the Bank are overwhelmingly held by pension funds, insurance companies, banks, other central banks, and a few wealthy individuals. When the Bank buys bonds from them, it pays for the bonds by crediting the reserve accounts of the commercial banks whose customers have sold the bonds, with the amount agreed as payment for the bonds. The banks now hold additional reserves as assets, and they expand by an equivalent amount the deposits of their customers who sold the bonds. The balance sheet of the banking system has expanded, but the public (i.e. households and firms) are no better off, in the sense that they (or the pension funds and insurance companies holding their wealth) have the same amount of assets or wealth as before. The only difference is that some of their bonds have now been swapped for bank deposits. No one has more wealth, and no one's income has increased, at last as a result of first round effects.[6] The longer term effects of the policy on wealth distribution are harder to gauge, but,

[6] In the case of bonds sold by commercial banks, there is no increase in the size of commercial banks' balance sheets since, on their asset side, they just swap bonds for reserves at the central bank.

to the extent that QE was responsible for raising asset prices, it led to capital gains for those who already held financial wealth.

Seeing how quantitative easing works gives a clue as to the effects and the limitations of quantitative easing. In the first place, quantitative easing expanded the balance sheets of banks and made them more liquid: banks held larger balances in their reserve accounts at the Bank of England, that they can use for drawing banknotes or making payments on behalf of their customers to other banks. This ensured that the liquidity shortage that had driven Northern Rock out of business could not reoccur. Secondly, pension funds, insurance companies, and other investment intermediaries that hold financial wealth for wealthy individuals found themselves with more liquid asset portfolios, i.e. portfolios in which the share of bank deposits was now higher. Given the virtually zero rates of interest available on deposits, the best use to be made of those new bank deposits was the purchase of longer term securities. The renewed buying of stocks and shares has driven up stock market prices by around a third since the start of the buying programme. When bond or share prices rise, their market yield, or the return on them in proportion to their market price (the amount of income obtained per pound of market value) is reduced. Financial investors therefore are more inclined to look elsewhere for better returns. A third outcome of quantitative easing in Britain, but also in the United States, Japan, and the Eurozone, was an outflow of funds to emerging markets. Governments and companies in developing countries, that only a few years before had been regarded as too unreliable and crisis-prone to be credit-worthy, found themselves able to borrow on good terms in the international capital markets and load up with debt.

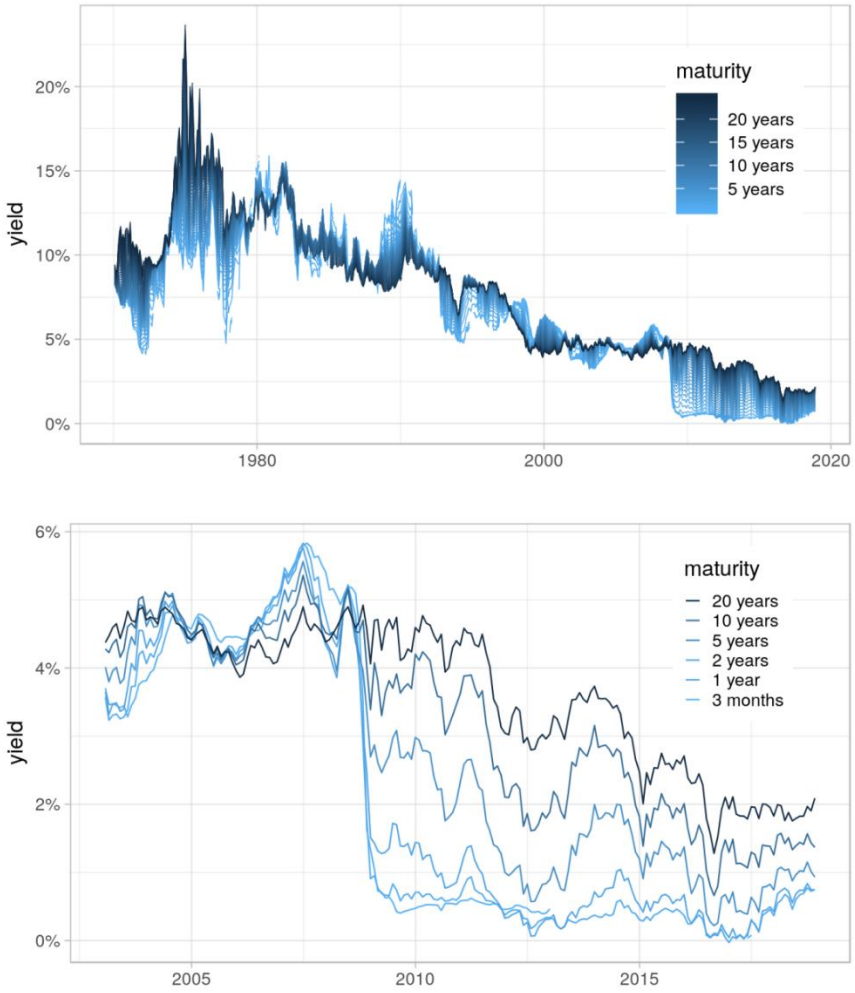

Figure 2. The yield curve on UK government debt. The top pane shows the yield (interest rate) on the full range of maturities (borrowing durations) between 6 months and 20 years. Note the tendency of the curve to 'invert' before recessions and crises, for example, in the late 1980s, the early 2000s and before the 2008 crisis. The bottom panel shows selected maturities for a shorter recent time period. Source: Bank of England and authors' calculation.

Quantitative easing therefore repaired the problem of illiquidity in bank balance sheets. This was accompanied by a fall in yields on long-term securities, flattening the yield curve, which shows the (interest) cost of finance at different maturities, from the rate of interest on overnight borrowing, to the rate that is paid on borrowing for 30 years or more (see Figure 2). But as mentioned at the start of this section, the aim of quantitative easing was to "boost spending and investment in the economy".

Government expenditure can be excluded from this ‘spending’ since it is driven by policy and therefore should be largely unaffected by changes in financing conditions. In any case, after a brief fiscal stimulus under the Labour government of Gordon Brown, government expenditure was committed from 2010 to austerity in order to reduce the fiscal deficit. This leaves household consumption and business investment as other categories of expenditure in the economy that may be affected by QE. Household consumption does not change much because the bulk of it is regular, customary expenditure that people try to maintain whatever are the conditions in the financial markets. Quantitative easing did not create any additional incomes for households, and the increase in household wealth arising from higher stock market prices affected only a small proportion of already very wealthy households. These households are so rich that their consumption expenditure is unconstrained, and therefore little affected, by the value of their asset portfolios, limiting the size of any "wealth effects" on consumption. To the extent that monetary policy supported household expenditure, it is likely to have been by ensuring that banks were not constrained by shortages of liquidity in offering credit to individuals to support house purchases and consumption.

The case of business investment is different. Companies invest in productive capacity because they have customers at their door. The rate of interest merely affects how they finance any investment that they may undertake. Hence the Bank of England’s rate of interest has rarely influenced investment significantly. If anything, the two variables - the rate of interest and the rate of business investment - tend to move up and down together over the business cycle, rather than inversely, as argued by those who believe that lower rates of interest will increase investment, and higher ones will decrease such expenditure. Such an investment boom did not arise in 2008-09, when the Bank of England cut its rate dramatically from 5.75% to 0.5%. Quantitative easing too did not bring any additional customers to the doors of the non-financial businesses that do the bulk of private sector investment in Britain. Any additional customers were the government agencies undertaking the infrastructure works, notably in transport infrastructure, that have been a feature of recent government efforts to revive the economy. What quantitative easing did was to alter the terms of financing for companies, by easing the switch from short-term finance to long-term finance. It was the illiquidity in the market for long-term finance that had caused the initial decline in business investment around 2008. That initial

decline has been reinforced in Britain by the fear of loss of European customers following the EU referendum in 2016.

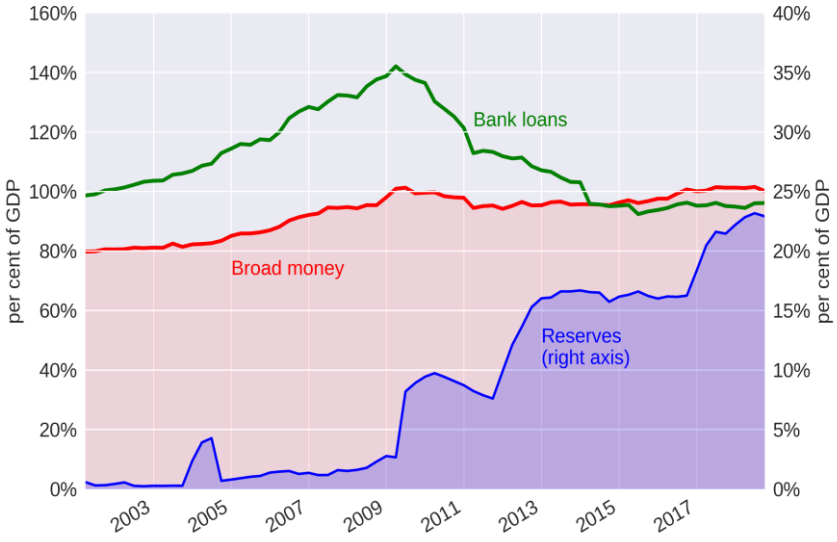

Figure 3. UK money supply and bank lending.

Source: Bank of England, ONS, and authors' calculation.

Quantitative Easing also demonstrated the failure of the doctrine that changes in 'base money' drive bank lending and therefore also drive changes in bank deposits or 'broad money'. Sometimes referred to as the 'money multiplier', and still found in undergraduate economics textbooks, this doctrine argues that increases in reserve balances at commercial banks as a result of open market operations will be 'multiplied up' into increases in bank lending, and therefore to new deposits that are created when banks make new loans.

Figure 3 shows the effect of QE on bank balance sheets and bank lending. In 2007, reserves held by commercial banks at the Bank of England amounted to less than 2% of GDP. As a result of QE, this rose to over 20% of GDP by 2018. Over the same period, outstanding bank lending as a share of GDP declined as banks deleveraged, while deposit balances remained stable.

What this demonstrates is that the quantity of 'broad money' held by the public, mostly bank deposits, is not determined directly by the central bank, but is instead the

outcome of commercial bank lending decisions and the structure of their balance sheets. While operations such as QE increase the liquidity of bank balance sheets, whether this translates into greater bank lending is dependent on a range of other factors. It is notable that while early Bank of England communications discussing QE highlighted the "bank lending channel" of monetary policy, this was downplayed in later communications, since evidence of the functioning of this mechanism failed to materialise.

6. No going back

The monetary policy of the Bank of England has not been without its disadvantages. While the effectiveness of quantitative easing at stimulating investment spending and aggregate demand has been limited, a flattening yield curve introduces potential new problems for the financial system: it reduces the profits of banks, raising concerns about financial disintermediation; and it reduces the incentives for dealers in securities markets to provide liquidity by using their balance sheets to counteract volatility in interest rates and asset prices. Extremely low long term interest rates threaten the solvency of pension funds, because returns from their investments are often too low to cover their pension liabilities. This further encourages investment funds to invest, indirectly if this cannot be done directly, in more risky speculative ventures or in emerging markets offering higher rates of return but also with much higher exchange rate and default risk. In turn, such risky investments impair the quality of the assets backing our pensions and insurance policies.

With a growing awareness of the threats posed to financial stability by continuing quantitative easing, discussion of monetary policy is dominated by the question of how QE may be discontinued so that the old consensus monetary policy framework may resume. However, such a return to the *status quo ante* would be wrong.

Abandoning the open market operations of quantitative easing would reduce the liquidity of the capital market. The Bank of England has to decide what it is to do with the portfolio of securities built up through successive quantitative easing programmes. If the Bank sells its portfolio of securities, the sale will drain existing

liquidity out of the banking system and capital markets: those financial investors who buy the government bonds (probably institutional investors anxious to buy top quality securities at a better market yield) will hand over their bank deposits in payment for the bonds, and their banks will hand over equivalent reserves to the Bank to be cancelled. Even if the Bank merely announces its intention to sell, the effect on asset prices will be to raise the cost of longer-term financing. If the Bank merely 'runs down' its portfolio, receiving the interest and eventually the repayment on maturity of the bonds without purchasing new bonds to replace them and maintain the level of QE, it is relying on the government to run a financial surplus to make those payments. Such a financial surplus can either be obtained by running a fiscal surplus, or by the government issuing more bonds, thereby draining the liquidity in the capital market. Whether the government or the Bank sells bonds, the effect is the same: a deflation of the capital market that will create problems for government finances and corporate finance, both of which need to be mobilised in order to overcome the low investment and slow economic growth that is the proximate cause of the rise in government debt and the fragility of business finances.

A new policy framework is needed, building on QE and using central bank open market operations to regulate liquidity in a capital market that is now globalised. The Bank should start by acknowledging that a return to the pre-crisis status quo is neither possible nor desirable. The Bank cannot avoid playing an active role in longer term bond markets for the foreseeable future. An implication is that the Bank will have direct influence not only over short term rates but also over the shape of the yield curve. The Bank should acknowledge this by explicitly including control of the yield curve as part of its operating framework. The Bank of Japan has been doing this since 2016, and yield curve control is now being openly discussed in relation to the Federal Reserve.[7]

Implementation of a system of yield curve management will require careful design, and the full details of such a system are outside the scope of the current document. The Bank will need to balance the requirements of maintaining financial stability with macroeconomic objectives. Some general principles can, however, be suggested.

[7] Clarida et. al., 2018, The Bank of Japan's Yield Curve Control Policy, Columbia School of International and Public Affairs, https://sipa.columbia.edu/academics/capstone-projects/bank-japan-japan-yield-curve-control-regime

The Bank should commit to publishing forecasts of the yield curve over its policy horizon. It should discuss the implications of these forecasts for financial institutions, in particular pension funds and insurance funds, and for financial stability more broadly. The Bank should commit to ensuring that the yield curve will not deviate substantially from these forecasts over a stated time horizon. Within stated limits, the Bank should allow the normal functioning of the market to determine the yields on long term assets, but the Bank should stand ready to become a 'market maker' in key bond markets should liquidity dry up, or if buying or selling of these assets were to exceed amounts consistent with Bank forecasts. These interventions should not be limited to the markets for government debt, but would also include liabilities of British corporations that are willing to have the market for their long-term securities regulated by the Bank. This would also give the Bank some control over those corporations' merger and acquisition activities. The idea is not so outrageous or Bolshevist. This kind of policy framework was used informally in the nineteenth century when capital markets were globalised under the gold standard. Central banks then made a market in the bonds issued by their government and had formal and informal lists of corporate securities that they would accept for discount.

There are number of advantages to such a commitment. The Bank of England already acknowledges that it must sometimes assume the role of 'market maker of last resort' as part of its emergency procedures.[8] The inclusion of corporate bond purchases in the Bank's quantitative easing programme is a tacit acceptance that it must now also take this role as part of the normal setting of monetary policy. In the modern system of globalised finance, with liquidity obtained and distributed on the basis of collateralised borrowing, such a framework would limit the price volatility of those financial assets used as collateral. In many cases, this is a more effective way of ensuring the liquidity of capital markets and financial institution balance sheets than providing central bank reserves directly to a subset of financial institutions. It provides certainty that a wide range of capital market participants can routinely obtain liquidity if needed, using assets held on their balance sheets as collateral.[9]

A more explicit commitment to this role would provide greater certainty to financial institutions, businesses and government when planning investment programmes than

[8] *The Bank of England's Sterling Monetary Framework*, https://www.bankofengland.co.uk/-/media/boe/files/markets/sterling-monetary-framework/red-book
[9] Mehrling (2010), *The New Lombard Street: How the Fed Became the Dealer of Last Resort*, Princeton: Princeton University Press.

that provided by forward guidance, the policy of explaining intended future Bank actions. It would allow actual financing and investment plans to be made with a substantial degree of certainty around the cost and availability of credit.

Such regulation of capital market liquidity inevitably means that monetary policy needs to be coordinated with fiscal policy. The Bank of England will continue to play an active role in debt markets, particularly government debt markets, for the foreseeable future. This will require coordination with the Treasury. While the Bank continues these operations and retains substantial volumes of government debt on its balance sheet, monetary and fiscal policy can no longer be cleanly separated. Macroeconomic targets should therefore been seen as joint targets for the Bank and the Treasury. This need not mean eliminating the independence of the central bank and subordinating the monetary policy of the Bank of England to the government. The coordination with fiscal policy could be effected by requiring the Bank of England to be much more responsible to Parliament for stability in the capital markets: that is, for ensuring that there is adequate liquidity so that new securities issued by the government and by corporations based in the UK can be absorbed by the market in an orderly and predictable way.

The framework has a number of practical advantages. It would require minimal new legislation or new institutions. In return for having the benefit of the Bank of England's liquidity umbrella, British corporations could be expected to show a greater commitment to investment in Britain. The stabilisation of the yield curve and the regulation of merger and takeover activity would also discourage speculation and trading on capital market instability. The stabilisation of the capital market would complement and make more effective bank capital adequacy regimes: banks lending to businesses with access to more stable long-term funding would improve the quality of their loan books. Planning for government investment programmes could go ahead without the usual objections that the bond markets may turn against the government.

7. Moving Targets?

Should changes to the Bank's remit go further still? A number of proposals to change or augment the Bank of England's current target of two per cent inflation have recently

been put forward. These include an increase in the target rate of inflation, the addition of a productivity target, and tasking the Bank with credit guidance and responsibility for actions relating to climate change.

One proposal that has attracted broad support is **an increase in the rate of inflation** targeted by the Bank of England. A revised target of four per cent is often suggested. The rationale for the proposal is that the likelihood of undershooting the two per cent target was underestimated, and with a two percent band between the target and zero, the potential for interest rates to hit the lower bound was likewise underestimated. By raising the target to four per cent, there is a substantially wider margin for error in undershooting the target before the zero bound is reached, and resort to "unconventional" measures such as quantitative easing would be more common.

One problem with this justification is the implicit assumption of a return to the pre-crisis status quo, which we have argued cannot be sustained. Another is that, as we have also argued above, adjustments to Bank rate only have limited impact on expenditure and inflation. This does not mean that the proposal to raise the target is without merit. Given the current situation of highly deregulated labour markets, wage-driven inflation is unlikely to become a binding constraint on macroeconomic performance: financial instability is a greater danger. Inflation is now largely driven by the prices of commodities, oil in particular, and by exchange rate movements, as we have seen in the wake of the EU referendum in 2016. The dangers of the economy running too “cold” therefore substantially outweigh the dangers of marginally higher inflation.

An alternative formulation, put forward by Simon Wren-Lewis, is for the Bank to replace its inflation target with a target, ‘to maximise output growth subject to maintaining inflation within 1 per cent of its target by the end of a (rolling) five-year period’.[10] Maintaining output close to full capacity would stimulate wage growth, which in turn should provide firms with the incentives to undertake labour-saving capital investment. However, this presupposes that the Bank has ways of positively influencing output growth. While such influence is widely believed to be the case, there are also reasons to be sceptical of such possibilities. The clearest evidence against the view that monetary policy can stimulate output growth is provided by the

[10] Wren-Lewis (2019) ‘Macroeconomic Policy Beyond Brexit’, *The Political Quarterly*, Volume 90, Issue S2.

course of economic activity since the 2008 financial crisis, when the economy has resisted the Banks efforts through quantitative easing and lower interest rates, to engineer an economic recovery.

Nevertheless, this would be a better way to try and address the UK's productivity shortfall than to make **productivity** an explicit target of Bank policy, as argued in a recent report commissioned by the Labour Party.[11] There are several problems with any policy target on productivity. First, productivity is a residual measure. The only meaningful measure of productivity is output per unit of labour: GDP divided by persons employed or hours worked. The weakness of UK productivity growth since the 2008 crisis is the mirror image of rapidly increasing employment alongside weak aggregate demand and GDP growth. While growth remains weak, improvements in productivity are only therefore likely to be possible by reducing the growth of employment, or even creating unemployment. Moreover, productivity and inflation tend to move in a contrary fashion, with productivity rising in an economic boom, when inflation is rising as well, and falling in a recession, when inflation is falling as well. A central bank that simultaneously attempted to target inflation and productivity using traditional tools to influence demand would likely find itself pulling in two different directions at once.

Far more effective in raising productivity would be a government programme to re-equip British industry, in particular the motor-vehicle industry, construction, and the transport infrastructure for a zero carbon-emissions future. By raising substantially the level of expenditure in the economy, this kind of 'turbo-charged Green New Deal' would raise labour productivity much more directly and substantially than any indirect credit instruments that the Bank of England may have at its disposal. Such a programme would also make effective other recent suggestions that **climate change** should play a greater role in central bank policy-making.[12] These range from requiring central banks to incorporate climate-related risks into their stress-testing regimes, to more radical proposals such as excluding bonds issued by carbon-intensive businesses from central bank bond purchases and from collateral eligible for discounting at the

[11] https://labour.org.uk/wp-content/uploads/2018/06/Financing-investment-final-report-combined.pdf
[12] "Next Bank of England governor must serve the whole of society" https://www.theguardian.com/business/2019/jun/04/next-bank-of-england-governor-must-serve-the-whole-of-society

central bank, and the use of credit guidance to channel funds to green investment projects.

There is good reason to be sympathetic to proposals demanding action on climate change. The need for concerted change is undeniable. But we can also question whether the Bank of England is suited to a leading role in the major structural adjustments necessary for the transition to a low carbon economy. The argument for inclusion of climate-related risks in Bank of England stress tests is compelling: financial risks arise both from the direct effects of climate change and from the process of transition to a lower carbon economy. As Mark Carney recently put it, a sudden repricing of carbon-intensive assets could potentially lead to a climate "Minsky moment".[13] But there are reasons to be cautious on the use of credit guidance and capital weights to try and achieve broad social and environmental aims. The Bank of England currently has neither the information nor the expertise required to undertake credit allocation decisions, and the provision of finance is by no means the same as the actual modernization to zero-carbon standards of economic activity. New monitoring and assessment capacity could be developed, but it is not clear the Bank is the right institutional setting for these activities which would arguably be better placed either within or alongside a National Investment Bank.

Moreover, the use of quantitative targets for credit and monetary aggregates (as proposed in the recent Labour-commissioned report) was abandoned (in favour of policy implementation based on adjusting interest rates) by all major central banks in the wake of the financial volatility resulting from the failed 1980s monetarist experiment in directly controlling money supply growth. The proposal to target productivity (and thus, implicitly, nominal GDP growth) using quantitative credit targets represents a reversion to elements of this monetarist approach. In reality, central banks cannot target interest rates and monetary and credit aggregates simultaneously.

A better option would be for the Bank to make liquidity available at preferential rates and conditions (such as reduced collateral haircuts) to credit institutions that meet particular lending criteria. These criteria, and the identification of financial institutions that meet them, should be determined by an institution other than the

[13] https://www.bankofengland.co.uk/-/media/boe/files/speech/2018/a-transition-in-thinking-and-action-speech-by-mark-carney.pdf

Bank, as part of the government's industrial strategy. A preferential credit system of this type has already been implemented by the European Central Bank: 'Targeted longer-term refinancing operations' (TLTROs) are loans to credit institutions such that conditions are adjusted to reflect the lending patterns of the borrowing institutions. Credit institutions that lend to non-financial corporations and households (excluding mortgage lending) receive funding at lower interest rates.[14]

Implementation in this way avoids the potentially conflicting objectives that would result from using capital adequacy as a credit guidance tool. Capital adequacy risk weights, and associated macroprudential tools, are intended to reflect the potential risks to the financial system and the broader economy originating with financial institutions' balance sheets. Weightings should certainly reflect the risks from climate change, but broadening the policy aims of credit risk weighting to include credit guidance would lead to the confusion that arises from using a single instrument to try and achieve multiple objectives.

It must also be noted that these initiatives would only affect the financing of credit institutions, and thus, hopefully, the financing of socially desirable investment projects – but not the decision to undertake the investments, which will continue to depend on the profitability of such undertakings, and the degree of excess capacity in industry. It should also be borne in mind that, historically, the UK banking system has financed little domestic capital investment, focusing instead on domestic mortgage lending and overseas activities. Large scale investment has typically been financed with firms' retained earnings or with funds obtained in the capital markets. Generating substantial volumes of bank credit for business investment will require substantial structural changes to the UK banking system, and will not be achieved simply by adjustments to the way that liquidity is provided by the Bank of England. Addressing the UK's productivity problems requires measures that will stimulate business investment, raise infrastructure spending, and reverse the wage stagnation of the last decade. These are, to a substantial degree, the job of industrial policy, implemented through the National Investment Bank and related institutions, rather than the central bank.

[14] https://www.ecb.europa.eu/mopo/implement/omo/tltro/html/index.en.html

8. What Can the Bank Do?

Mark Carney was appointed Governor of the Bank of England in 2012, and is due to step down at the start of 2020. At the time of writing, his successor is yet to be named. Carney had previously been Governor of the Bank of Canada, where he had had 'a good crisis' in the sense that the Canadian financial system was little affected by the 2008 crisis in its neighbour, the United States. In large part, this stronger financial performance was because the Canadian banking system is dominated by three large banks, a degree of concentration that facilitates banking regulation and had allowed the Bank of Canada to dissuade Canadian banks from lending into a property bubble. Before his central bank employment, Carney had worked for Goldman Sachs, and he therefore has a good understanding of capital markets and international finance. Since his appointment he has shown himself a pragmatic strategist at the Bank and an articulate spokesman for its policies.

However, his successor will have to acknowledge that the experience of the Bank of England during Carney's term shows that the Bank of England cannot regulate the business cycle, as was intended when the Bank was given its mandate by Gordon Brown in 1997. For a decade, the Bank was able to claim for itself an achievement that was due to an economic conjuncture outside the scope of the Bank's influence.[15] For the next decade, from the financial crisis of 2007, the instruments of monetary policy - interest rates and open market operations dressed as a new instrument of 'quantitative easing' - proved unable to prevent deflation in the economy and subsequent economic stagnation. The idea that the central bank can control inflation and growth had always rested on some dubious economic reasoning that distracted policy-makers from an understanding of what central banks can do.

There is a danger of repeating these mistakes by giving the Bank of England responsibilities it cannot fulfill. In reality, central banks' powers over the economy are limited. They can regulate banking, set interest rates across a range of market segments and maturities, ensure that there is enough liquidity in capital markets to support the financial operations of government and firms, and in a crisis they can flood the financial markets with liquidity. This is what the Bank of England can do. The

[15] This claim was recently repeated by Bank of England Chief Economist Andy Haldane, who argued that inflation targeting has taken the UK from the "third division" to the "Premier League". https://www.ft.com/content/ae3a2c72-4007-11e9-9bee-efab61506f44

proper regulation of employment and investment in the economy is a matter of policy for Government, not the central bank.