

Monetary policy and the value of Public Debt

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Introduction

This article makes three points:

- Current government debt is not a fixed amount; much of it is a contingent liability whose size depends on future developments.
- One of the factors influencing the size of the debt is the way that monetary policy is conducted.
- Current methods of monetary control are likely to be unnecessarily expensive, partly owing to a highly defensive interpretation of central bank independence.

How much public debt is there?

1. There is growing concern about the scale of government debt issuance consequent on the Covid crisis and about the accumulated size of government debt¹. In December the ONS reported that net government debt stood at about £2.1 tr, almost 100 per cent of annual GDP. And the debt is expected to top £2.2 tr by the end of the financial year in March 2021.
2. Currently the Bank of England is holding around one-third of the unexpired bonds issued by the British government. The general public may well wonder in what sense that debt, with a face value of £602 billion, can be said to be debt at all, given that it is apparently money that the one part of the public sector owes to another. How far is that debt really a burden on tax-payers? The answer depends *inter alia* on how monetary policy is conducted.
3. The orthodox analysis runs as follows. In purchasing government debt, the Bank of England is creating commercial bank reserves. It writes a cheque to the seller of government debt, and that is paid into the seller's bank account, which increases that commercial bank's own account at the Bank of England – its reserves. Those reserves are regarded as a liability of the central bank, the Bank of England, that are set in its balance sheet against its assets, largely consisting of the government bonds it bought² – See Table 1.
4. This orthodox story implies that the Bank's bond purchases do not alter the public sector's total consolidated debt; they simply alter its duration. Long-term government bonds are retired and replaced by Central Bank debt to banks. Since the interest rate that the Bank pays to commercial banks is lower than the coupon on bonds, this normally reduces debt servicing costs. Bank rate is currently 0.1 per cent, as near to zero as may be. In 2019-20 interest on government debt would have been 2.2 per cent of GDP but the effect of Bank of England previous debt purchases under the quantitative easing programme was to reduce interest payments to 1.7 per cent of GDP, a saving of about £12 billion³.
5. So much for the accounting. But it falls short of answering our question: to what extent is this really a debt, a potential burden on taxpayers? Do these accounting conventions clarify or confuse economic reality?
6. Note that the central bank's liability is a very odd liability indeed. Unlike the case of government bonds, settlement of the central bank's liability can never be demanded, even in principle. Bank reserves are money, the stuff in which all transactions are settled. If banks were to demand repayment of the liability that demand would be meaningless. Ever since countries abandoned the gold standard bank, reserves have become the ultimate money⁴. Moreover, the commercial banks are not rendering any service to the Bank of England in lodging their reserves with it. On the contrary, it is serving them by acting as a clearing house for inter-bank transactions and by acting as lender or borrower of last resort should their own lending operations leave them short or long of liquidity. Payment of interest on bank reserves is not the result of any obligation, legal or moral. It is simply a pragmatic policy choice, a device used to control the credit activities of commercial banks.

Table 1: Public Sector Net Debt

£ billion, 30 November 2020

Total public sector debt: 2,099.8*

Of which 1,805.2 is gilts

Of which 602.1 is gilts held at BoE

BoE net liabilities: 233.9**

Of which 109.6*** is cost of gilt holding

Source: ONS Public Sector Finances UK November 2020; release 22 Dec 2020

Notes:

* This figure excludes debt of public banks. It encompasses the gross debt of central and local government plus that of public pension funds and non-financial public corporations, which are both small amounts. Cross holdings of debt among public bodies and liquid assets are subtracted to arrive at net debt.

** This figure is the loan “liabilities” of the BoE minus its holdings of gilts. Apart from the cost of acquiring gilts above face value it includes corporate bond holdings and the Term Funding Scheme, which provides 4-year loans to banks and building societies at close to Bank rate.

*** Cost of the gilt holding is the amount paid for gilt purchase in excess of the face value of the bonds.

7. This view is supported in a recent paper in which Kumhof et al consider the matter from a legal and accounting, as well as an economic perspective. They conclude that, far from being a debt: “an appropriate characterization of CBM is as ‘social equity’ that confers rights of participation in the economy’s payment system and thereby its economy”.⁵
8. While it is more than questionable whether the monetary authorities have a true liability to specific counterparties, there is no doubt that they have a general fiduciary duty to preserve the integrity of the currency. They cannot let the purchasing power in circulation get far out of line with the productive potential of the economy. That is their true obligation.
9. In order to put a value on this “liability” therefore, one should not consider the face value of reserves, a sum that need not be and cannot be repaid. One should consider the present value of the interest payments the Bank of England will choose to make in future. The future is unknowable, but if the public debt is to be valued then, like any good insurance company one has to assess probabilities and put a value on those expected payments.

Why monetary policy affects debt

10. To put a value on those expected payments, it is necessary to consider methods of credit control.
11. The point of managing credit is to manage aggregate demand in the economy so that it is not so excessive as to cause inflation nor so deficient as to occasion a recession. Formally, this is expressed by having a low,

but positive, inflation target. The Bank of England does not want to control credit by quantitative controls but via the price mechanism, so it sets an interest rate on bank reserves.

- 11.1. That creates an opportunity cost; banks will lend to clients only at that rate plus a mark-up. They will usually lend any amount at that lending rate so long as they can find suitable customers.
 - 11.2. If they lend so much that their stocks of liquid reserves fall lower than they need for settling payments with other banks, they can always borrow reserves from the central bank at a slightly higher rate. The Bank of England will provide loan facilities, at a price against collateral.
 - 11.3. Monetary control therefore works on the demand for credit. When there is a perceived need for restraint, Interest rates – the Bank of England’s deposit and lending rate – are ramped up to the point where credit demand tails off to the extent thought appropriate by the monetary authority, given their inflation target and the state of demand, including the government’s net demand reflected in its budget deficit.
12. Normally banks will prefer to operate with low reserves, because in a healthy economy they can lend to customers at a higher rate than the Bank pays on the reserves. And if they are caught short of liquidity they can borrow at or slightly above the Bank’s deposit rate. Currently, owing to the Bank’s programme of Quantitative Easing (buying government bonds), banks have very large reserves.
- 12.1. Because of weak private sector credit demand, or from the banks’ perspective insufficient profitable lending opportunities, the level of reserves is abundant and more than the banks would normally wish to hold for prudential reasons. The Bank rate paid on those reserves provides a floor for interest rates
13. In recent years the concerns of the Bank of England have been how to keep interest rates low and reasonably stable; but it is necessary to think ahead.
- 13.1. If the economy begins to overheat and banks have ample reserves, this can entail the Bank of England paying commercial banks much higher interest on those reserves in order to restrain credit.
 - 13.2. This is not an immediate problem; nonetheless, the time may come when the Bank wants to raise rates. It calculates that over the longer term short-term interest rates may need to settle in the range 2-3 per cent⁶, which implies that, in a period when credit needs to be restrained, they could reach 5 or 6 per cent or more.
 - 13.3. With reserves currently above £700 billion, that entails the Bank of England paying commercial banks over £35 billion per year for nothing, simply as a by-product of conducting monetary policy. Evidently transferring 1 ¾ per cent of GDP in that way could raise some political eyebrows. These considerations call into question whether current methods of credit control remain appropriate for a world of abundant bank reserves. The central bank, however, has alternatives – two of them, one respectable and the other regarded as heretical in the UK though widely employed in other countries⁷.
14. The first, and most likely course of action, is to reverse QE, that is, to resell on to the open market the government bonds it has bought during the QE period.
- 14.1. That will have the effect of draining reserves from the system. The government will then be paying interest on those bonds to the private sector. If interest rates have risen, the Bank will receive less for them than they paid, and perhaps less than their face value, so the reserve drain would be partial.
 - 14.2. Moreover the Bank bought them after interest rates had fallen, and so paid more for them than their face value. If it is as unlucky selling as buying it could lose £200 billion on the round trip⁸.
 - 14.3. The offset is that the Bank will pay less interest. Indeed, as reserves are drained, the banks may need to borrow reserves to sustain their credit activity. The Bank would then be paying interest on

existing reserves and charging somewhat higher interest on borrowed reserves. In any case this way of conducting monetary policy looks to be potentially expensive.

- 14.4. The options are to pay large rents to commercial banks, or to occasion huge losses on government bond trading. Central bank independence is interpreted to mean that it has to be concerned with monetary policy and the stability of financial institutions and the markets; it does not have to be concerned about costs to the exchequer.⁹
15. These problems are not unique to the UK. In the United States there have already been discussions about raising short rates before withdrawal of QE, and the spectre of making large payments to commercial banks¹⁰.
16. The second possibility is the Bank calls for Special Deposits.
 - 16.1. This was a technique used in the 1960s, and modified with financial sector liberalisation after 1971,¹¹. It worked in conjunction with reserve requirements that required banks to hold a certain level of reserves relative to their customer deposits. The Special Deposits (SDs) effectively pushed up the reserve requirement and was supposed to curtail the growth in lending.
 - 16.2. A compulsory reserve requirement was abolished in 1981,¹² together with SDs, and since 2009 there has been no penalty on holding excess reserves. These days Special Deposits would operate without a formal reserve requirement and would simply mean the central bank could control interest rates at lower cost.

If for example it announced that the interest rate was zero on SDs but it would lend freely at twice the overnight money-market rate, banks would tend to key their own lending rates to that of the Bank because they would know that a call for SDs could come. and that could leave them short of liquidity.

- 16.3. There is a tendency to dismiss such an arrangement as a “tax on banks”. It is as a peculiar tax, however. It does not appropriate any additional resources for government use; nor is it a charge on anyone’s past income; nor a reduction of their assets.
 - 16.4. Commercial banks have a genuine liability, in that the deposits they take are the property of their customers, who can withdraw them. Special deposits however do not reduce the value of those customer deposits, nor even make them less liquid.
 - 16.5. They do make it more expensive for banks to expand their balance sheets by extending credit, and they will pass on much of that cost to borrowers. But raising rates is the whole point of the exercise anyway. The interest rate necessary to restrain credit demand is unaltered, and the banks will still provide for that demand. But, now that they cannot count Special Deposits as free reserves, they may need to borrow reserves from the BoE. The conditions under which commercial banks trade will have been made more expensive; but if this is a tax it is targeted at an activity the authorities need to discourage and it takes the form of the reduction of a subsidy whereby the central bank pays commercial banks a rent while rendering them a service.
17. Such a device is also criticised for discriminating against clearing banks and potentially in favour of other sorts of financial institution leading to the growth of grey markets. Reserve requirements had that effect because they were tied to deposits. While SD allocations would have to be related to balance sheets at the time they were set, they would be a lump sum not a ratio and so should have less tendency to drive deposits out of the banking system. The scheme could also apply to all deposit-taking institutions, and not just to clearing banks, which indeed it did between 1971 and 1980.
 18. Expected future interest payments therefore depend on the expected course of the economy in the absence of policy control, notably the growth of nominal GDP, which will determine the rate of inflation relative to the Bank’s target. That will determine the interest rate(s) that customers pay banks for credit. That rate will be consistent with different interest payments by the monetary authorities depending on the Bank’s policy. It could:

- 18.1. Decide not to attempt to influence reserves, but simply pay interest on them at the required rate;
 - 18.2. Drain reserves by selling government debt, paying interest on reserves as before, but earning interest on any reserves the banks borrow in order to meet credit demand given the interest rate; or
 - 18.3. Sterilise reserves by calling for Special Deposits and charge interest on short-term loans as before.
19. The Bank of England would presumably not – under present arrangements – choose a course on the basis of its cost to the government.
- 19.1. The balance between raising Bank rate and making the payment and selling government debt would not be assessed in terms of its effect on the public debt. If it were the Bank would sell government debt only when the short rate exceeded the bond yield, i.e. when the yield curve was inverted across its full length. In fact the MPC has said that it would expect to sell government bonds when the Bank Rate reached 1.5 per cent – irrespective of the bond yield.
20. Reducing the Bank's balance sheet appears to be seen as an objective in itself, irrespective of its fiscal effect – although the size of the Bank's balance sheet has no particular economic significance. Using SDs would entail the lowest interest payments. If Special Deposits were set at the same size as putative bond sales, interest payments between the Bank and commercial banks would be similar, but there would be no interest payments on the government bonds that the Bank would otherwise have sold to the public.
21. The readiness of the authorities to use administrative methods like Special Deposits to influence bank lending will therefore have a bearing on the course of future interest payments by the Central Bank.
- 21.1. The other important determinant is the course of the economy. It follows that the true value of outstanding public sector debt depends on the technique of credit control used by the Bank of England.
 - 21.2. The use of SDs to sterilize reserves could mean that public sector debt was some 30 per cent less than advertised – 70 per cent, rather than 100 per cent, of GDP – i.e. after netting out the authorities' own holding.

The outlook for interest rates...

- 21.3. In the past when monetarism was a fashionable doctrine there would have been a fear that the existence of substantial bank reserves was itself a predictor of a rapid growth of demand and a need for higher interest rates. Whatever the usefulness of broad money aggregates – the sum total of all bank deposits – as a leading indicator for nominal GDP, broad money itself is an endogenous variable; it depends on credit demand leading to a secondary expansion of the money supply. The mere existence of bank reserves does not ensure that credit demand.
 - 21.4. Central banks around the world have bought enormous amounts of government debt in the past decade, greatly expanding the monetary base – those bank reserves. Yet nominal GDP growth has been slow, and inflation targets widely undershot.
 - 21.5. Some asset prices have been inflated by the fall of long-term interest rates associated with quantitative easing and in the past the rising valuation ratio of stock market capital to the cost of physically constructing new capital plant and equipment would have been expected to stimulate investment. That channel, too, is ineffective when expectations of future demand are low. In practice, an expanded monetary base has only the weakest relation with subsequent strong growth of GDP.¹³
22. Government debt at the Bank of England, like the monetary base, may therefore be regarded merely as a contingent liability. If the Bank never resells the debt, that debt does not exist; and future interest payments on the monetary base are a contingency whose size depends on the course of the economy and decisions made by the Central Bank itself.

22.1. It is therefore necessary to consider possible formulations of that contingent liability.

...and public debt

23. The average maturity of government debt in September 2020 was 15. years, down from 15.3 at the beginning of the year.¹⁴ The UK Debt Management Office in its planning makes projections for interest rate and refinancing risk to a 15-year horizon.¹⁵

24. The bank reserves created when the Bank of England buys gilts, however, have no term. Unless eliminated by gilt sales or reduced by government surpluses, they are perpetual. The BoE is currently paying interest on some £711 billion worth of bank reserves, which it created in buying gilts with a face value of £602 billion. If we discount future interest payments at the longest bond yield, the present value in the extreme case where neither bond yields nor interest rates change would be:

$$B * r/y$$

where B is the current nominal value of the reserves, r is the Bank rate, and y is the bond yield.

25. Currently the bank rate is 0.1 per cent, while the 30-year gilt yields 0.8 per cent.

25.1. If rates did not change, the present value of the Bank of England's self-imposed "liability" would be £711 billion/8 = £88.9 billion, or slightly less than 15 per cent of the face value of the government debt held at the Bank.

25.2. Of course this ratio of bank rate to gilt yield is unusually low. In the exceptionally low-interest period since late 2008 the ratio has averaged 0.22 which, if repeated, implies a liability of £156 billion, or 26 per cent of the face value of the debt.

25.3. This whole period is truly exceptional, however, as Figure 1 shows. In the past 50 years there have been three distinct periods:

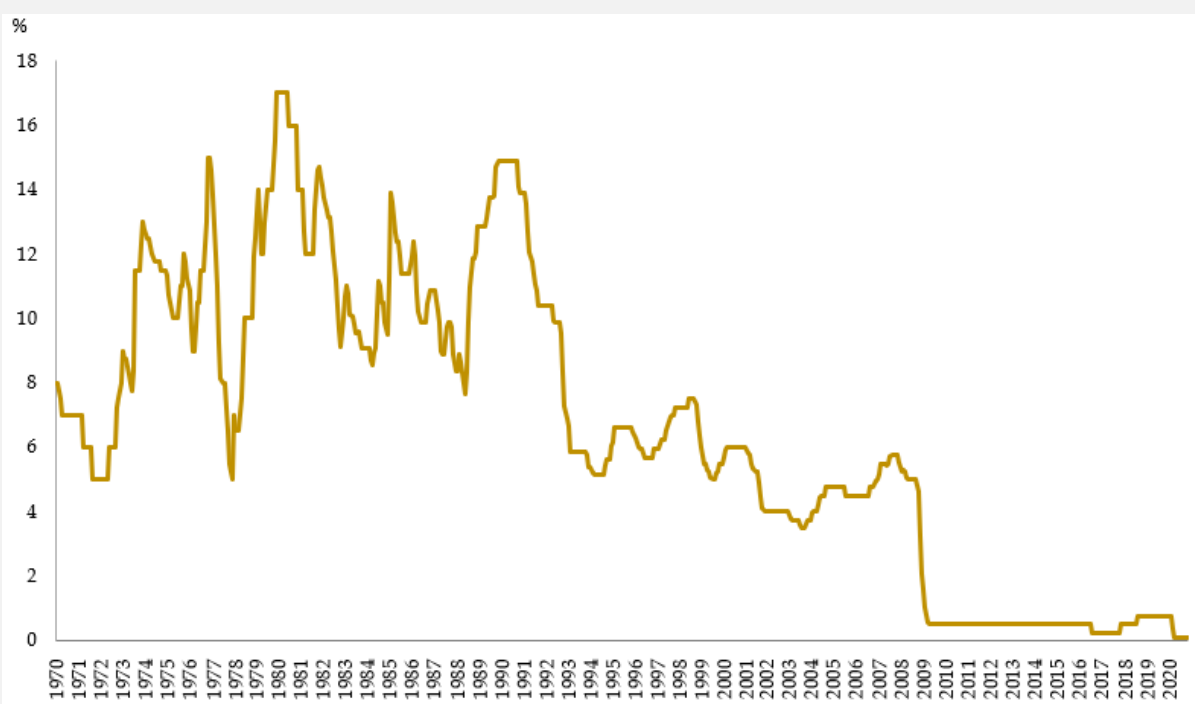
25.3.1. 1970-92 was the period of stagflation and its aftermath, when the Bank of England's policy rate averaged 10.8 per cent;

25.3.2. 1993-2008 was the so-called great moderation period when the rate was gently declining but averaged 5.3 per cent; and

25.3.3. The period from 2009 onwards has seen the rate average 0.5 per cent.

25.3.4. During the 'great moderation' period there was no significant difference between the 30-year bond yield and the Bank rate. The term r/y was approximately equal to 1.¹⁶

Chart 1: Bank Rate 1970-2020



Source: Bank of England

Notes: Monthly averages.

26. Official statistics showing public sector debt at around 100 per cent of GDP are therefore making two assumptions:

. First, the authorities cannot or will not limit commercial bank lending when the need arises other than by ramping up Bank rate paid on excess bank reserves or selling government bonds; in particular they will not use special deposits. Second, there will be a return to a “normal” situation of a humped yield curve where average long bond yields are little or no higher than Bank Rate.

An optimally independent central bank?

27. The case for an independent central bank is essentially prudential. It is a backstop against irresponsible fiscal and monetary policies being pursued by a government seeking short-term political advantage.

27.1. There are elegant theories that imply that independence might itself make inflation control easier through its effect on market expectations. While widely credited, these theories have never enjoyed substantial empirical support.¹⁷

27.2. The backstop argument, however, is firm enough. Yet there is a price to be paid for the backstop if it means that monetary and fiscal policy cannot be coordinated, when necessary or merely advantageous.

28. Now, there is no reason why co-ordination cannot be achieved by agreement between bodies with different but related mandates.

28.1. In the sort of deflationary conditions that have persisted since the financial crisis of 2008, the high-level coherence of fiscal and monetary policy has become particularly important, and that does not preclude operational independence in pursuit of agreed objectives. Clearly, public officials talk to each other, and the Treasury has an observer on the Bank’s Monetary Policy Committee.

- 28.2. However, the Bank and the government seem to set great store on the “credibility” of Bank independence and are punctilious about observing certain forms to emphasise it.
- 28.2.1. One is the insistence, already noted, of buying government bonds only in the secondary market – a needless extravagance¹⁸.
- 28.2.2. A second is the insistence by Bank officials that QE has nothing to do with monetary financing of a budget deficit but is merely “signalling” the intention to keep rates low – statements that do nothing to enhance their credibility.¹⁹
29. The key point is that the Bank, having been given an inflation target and the freedom to pursue it, should have the ability to agree, as well as to disagree, to co-operate with the government on achieving aims beyond the inflation target and encompassing the public finances.
- 29.1. When short-term interest rates neared zero, the Bank saw that it was justified to extend monetary policy instruments to large-scale bond purchases.
- 29.2. A further deflationary shock from Covid should also have convinced the Bank that it was economically justified for the government to run a deficit and to pay for it with money creation.
- 29.3. Logically therefore it would in future be justified for the Bank to find means of “normalisation” and monetary control that imposed the lowest possible cost on the public purse – as long as inflation control is not compromised.
30. Whatever the general advantages of current systems of monetary control they clearly become extravagant, in conditions of massive excessive reserves, when interest rates have to rise. The extent of the extravagance would be likely to dwarf any resource misallocations occasioned by the use of regulatory methods like special deposits. Confidence in the Bank’s status should be strong enough by now to allow it to respond appropriately.■

¹ There is a current discussion about the economic consequences of government debt and what sort of burden it represents on current and future tax-payers. This article does not address all the issues raised but focuses on the scale of the debt and its contingent nature.

² In fact the Bank bought the bonds at above face value owing to bond prices changing with market yields. These costs are shown in the final line of Table 1, Some costs would be avoided if the BoE took the bonds directly off the government when **both** parties agreed it was appropriate.

³ House of Common Briefing Paper No.05745, *Government borrowing, debt and debt interest* 26 November 2020, p.6 Available at <https://commonslibrary.parliament.uk/research-briefings/sn05745/> [Accessed December 2020]

⁴ Reserves can be extinguished when the private sector makes payments, such as taxes, to the government. Proponents of Modern Monetary Theory give great weight to that, arguing that money derives its value from the fact that it is the designated way of paying taxes. In fact money is the stuff that settles all transactions, only a small part of which are tax

payments. The government accepts transfers of bank reserves not because they are a debt, but because they are the principal legal means of settling transactions in the UK – and in most other countries.

⁵ Kumhof, K., Allen, J., Bateman, W., Lastra, R. M., Gleeson S., and Omarova, S., 2020. *Central bank money: liability, asset, or equity of the nation?* CEPR Discussion Paper DP15521, 6th December. Available at [Centre for Economic Policy Research \(cepr.org\)](https://cepr.org) [Accessed 8 December 2020]. Note CBM stands for central bank money.

⁶ Bank of England, 2018. *Inflation Report*, August. Box 6 p. 41. Available at [Inflation Report - August 2018 | Bank of England](https://www.bankofengland.co.uk/inflation-report) [Accessed 24 January 2021]. The report concludes: “...R* in the UK has fallen by more than 2 percentage points since 1990. Allowing for uncertainty around the precise starting point and filter length, R* in real terms is estimated to have fallen from around 2¼%–3¼% (with a modal estimate of around 2½%) to around 0%–1% currently (with a modal estimate of around ¼%)...Adding the 2% inflation target in order to convert those numbers into nominal terms results in a current estimate of nominal R* in the range of 2%–3%.(6) As explained in more detail below, shorter-term forces currently acting on the UK economy have pushed nominal r* below this level.”]N.B. R* is the “equilibrium” short rate, while r* is the actual rate that moves around it.}

⁷ See: Simon Gray *Central Bank Balances and Reserve Requirements*, IMF Working Paper WP/11/36, February 2011. Available at <https://www.imf.org/external/pubs/ft/2011/wp1136.pdf>, [Accessed 23 January 2021]

⁸ In principle capital losses by the Bank would be balanced by capital gains by the government, which issued the debt. The government gains on a mark-to-market basis, however, remain notional because it usually refinances at maturity of the debt. The Bank’s losses are realised.

⁹ In practice, much of the loss would automatically be transferred to the government, which has given an indemnity to the Bank of England in respect of its Asset Purchase Facility which implements the asset purchase programme.

¹⁰ See Board of Governors of the Federal Reserve System, 2021. *History of the FOMC’s Policy Normalization Discussions and Communications*. Available at <https://www.federalreserve.gov/monetarypolicy/policy-normalization-discussions-communications-history.htm> [Accessed 10 January 2021]

¹¹ See <https://www.bankofengland.co.uk/-/media/boe/files/quarterly-bulletin/1982/the-supplementary-special-deposits-scheme.pdf>. The Bank concluded that the system had worked to restrict credit but at the cost of diverting business from banks to other financial intermediaries.

¹² Apart from a cash requirement of ½ per cent of eligible liabilities.

¹³ Bank of England research failed to find an influence of QE on bank lending. There has been an identifiable effect on gilt yields and an apparent effect on asset prices more generally but the effect on real economic activity is elusive. Of course, none of that is conclusive; it is possible to believe that central banks were fighting strong deflationary forces and the counterfactual of no QE would have entailed deep recession.

¹⁴ UK Debt Management Office, 2020. *Quarterly Review, 3rd Quarter 2000 July-September*. Available at <https://www.dmo.gov.uk/media/14655/jul-sep00.pdf> [Accessed December 2020]

¹⁵ UK Treasury Debt Management Report 2020-21, Annex B, March 2020. Available at <https://www.dmo.gov.uk/media/14655/jul-sep00.pdf> [Accessed December 2020]

¹⁶ This reflects a peculiarity of the UK yield curve, which usually is humped with a positive slope up to the 10-year maturity, and downward sloping thereafter, whereby the 30-year frequently yields less than shorter-dated bonds.

¹⁷ See Posen, A., 1998. *Central Bank Independence and Disinflationary Credibility: A Missing Link*. Oxford Economic Papers, Vol 50, No. 3, July, pp. 335-359.

¹⁸ Breedon, Francis and Turner, Philip, On the Transactions Costs of Quantitative Easing (July 2016). BIS Working Paper No. 571. Available at SSRN: <https://ssrn.com/abstract=2812862>, [Accessed December 2020]

¹⁹ For example, a *Financial Times* survey found that “... investors believe the central bank’s quantitative easing programme is a thinly veiled attempt to finance the government’s deficit to keep its borrowing costs down.” See Stubbington, T., and Giles, C., 2021. *Investors sceptical over Bank of England’s QE programme*, 4 January. Available at [Investors sceptical over Bank of England’s QE programme | Financial Times \(ft.com\)](https://www.ft.com) [Accessed 4 January 2020].