

1. Monetary Base IV
Part C

Comments on Green Paper

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HER MAJESTY'S TREASURY

MONETARY CONTROL CONSULTATIONS

PAPER BY MERVYN LEWIS

Note by the Secretaries

The attached paper by Mervyn Lewis (additional to those already circulated in this series) is circulated for information.

M D K W FOOT

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IS MONETARY BASE CONTROL JUST INTEREST RATE CONTROL IN DISGUISE?

Is monetary base control merely "a means for the markets to generate the interest rates necessary to bring the rate of growth of the money supply back towards the desired path" (Green Paper - our emphasis), or is it something more? If the former, most of the participants to the flagging monetary control debate could eventually reach some form of accommodation, in which interest rates are left more to market forces. Many of the critics of present monetary policies really wanted no more than this in the first place. For their part, HM Treasury and the Bank of England would like to see interest rates at some remove from direct political interference.

The idea that control of the money supply via the monetary base is different from interest rate control was stated forcibly by Milton Friedman to the House of Commons Select Committee (as reported in The Observer, July 6):

"Direct control of the monetary base is an alternative to interest rates as a means of controlling monetary growth. Of course, direct control of the monetary base will affect interest rates, but that is a very different thing from controlling monetary growth through interest rates."

If monetary base control is different, we must ask how it works and provide a frame of reference for evaluating its costs and benefits vis-a-vis interest rate control. Our concern is with the behaviour of the banking system, for this is where the money supply problem currently exists.

Base money (alias high-powered money or simply cash) is important to the banking system because it is the ultimate means of payment. Convertibility into cash is one of the characteristics expected of deposits which are treated as 'money', while transferability in the settlement of debts and to make payments is a distinguishing feature of banking services. In an overdraft system, transfers can also be made from accounts in debit, so that liquidity services are provided on both sides of the balance sheet. Banks can be

visualised as purchasing primary securities, pooling them to eliminate risks and combining them with capital, labour, materials and high-powered money to create 'liquidity'. High-powered money has the role as an input into banks' production function.

How much high-powered money is required by the banks depends on the nature of the production process and on institutional arrangements. Banks providing liquidity services face uncertain demand for cash from deposits and from loans where there are undrawn facilities or open credit lines. They are able to employ the law of large numbers to keep cash at low levels, but cannot eliminate the need for cash completely. As a bank lends or invests, the loss of cash puts it in a position where any subsequent deposit withdrawals or loan demands may necessitate sales of securities at a loss or interbank borrowings at unknown rates. These possible costs must be balanced against the benefits of increased income. In this way, the availability of cash limits banks' acquisition of non-cash assets.

Control of the money supply is exercised by restricting the quantity of the factor of production, base money, to the banking industry. Since the monetary authorities have a monopoly over the production of this factor input, they can make it available in less than perfectly elastic supply: in the limit, the supply could be made perfectly inelastic. Banks are then in the same position as firms in any industry for which the inputs required for production are available only at sharply increasing cost. For an individual bank, the restriction of the supply of base money imposes an external cost as banks in the system expand deposits and bid for reserves. (Each bank's supply response is a mixture of a movement along a short-run cost curve and a shift of that cost curve as rising factor prices impose an external pecuniary diseconomy.) An individual bank can react in a variety of ways: by bidding for inter-bank funds, raising deposit (and loan) rates, improving services, cutting back on new facilities, cancelling or reducing existing facilities, selling CDs, disposing of bills or bonds. The route actually chosen will be the one most profitable to the bank.

The immediate difference from the interest rate mechanism presently operated is the involvement of the banks. Following the removal of the corset, the banks are now almost passive spectators in the process of monetary control. In response to an increase in MLR, their 'job' is to raise base rates in line (which they have done), but that is about all. The Bank of England, as it were, appeals directly over their head to the public's demand for credit. In the meantime, the banks can continue to push out facilities with relative impunity. If borrowers are not daunted by the higher interest rates, the banks could conceive their job to include bidding for deposits and reserves to sustain any expansion of advances. Monetary base control, by contrast, impinges directly upon banks' decision-making and provides a pecuniary incentive for them to participate in the process of adjusting their balance sheets to the dictates of monetary policy.

A second difference concerns the adjustment mechanism, which, under monetary base control, would be chosen by the banks on profit-maximising grounds. At present, the form of the adjustment (eg interest rates operating upon credit demand) is chosen by the authorities. If that fails, the authorities must either raise rates further, or wait for credit demands to subside. Until the latter eventuates, banks are supplied with cash to prevent them running out of reserves. Left to themselves, banks could well choose to respond to a reserve shortage in the same way - by raising deposit and loan rates. Should interest rates fail to restrain the demand for money or credit, this could not be the end of the matter. A reserve deficiency would still exist and banks would be forced to try something else. Some assurance would exist that the adjustments would proceed until monetary growth came into line. The idea that there is some new breed of banker who will always eschew asset management for liability management is patently false. If interbank rates are bid up high enough, it would pay some banks to sell bills and bonds to the private sector in order to obtain funds for lending out in the interbank market. Liability management is allowed to succeed because the Bank provides the reserves needed to validate deposit expansion.

Perhaps the most important difference is in terms of the implications for behaviour next time round. Once banks are forced to make up reserve shortages by borrowing interbank at 'penalty cost' or by

selling securities at a loss, they are likely to exercise much greater care in future when granting facilities and open credit lines. Unused facilities are a valuable source of liquidity to customers, and banks might, in different circumstances, be expected to vary the 'price' for this service. There would also be an incentive for banks to refrain from lending and build up reserves when reserve shortages are anticipated. Accordingly, surges in monetary growth may be less likely to occur.

In this description, monetary base control is qualitatively different from interest rate control. At the aggregate level it operates by imposing a quantitative restriction upon banks' intermediation. This is translated directly into individual banks' profit calculus. Both the initial response and subsequent adjustments are determined by market forces, and the rewards and punishments these forces give to banks would seem very considerable benefits indeed. Unfortunately, it is not as easy to be clear about the possible costs.

For restraint upon cash to be an effective control device, it is not enough that its supply be inelastic, as is witnessed by the idea of using negotiable licences to control banks' deposit expansion. As with base money, the supply of negotiable licences would be monopolised by the authorities. As banks expand beyond allowable limits, variations in the market price would raise costs against individual banks. Yet it is generally agreed that such a scheme would encourage banking to be done outside the controlled area - particularly in offshore markets. Would the same consequences follow from monetary base control? If banks' holdings of base money were involuntary, as under a reserve requirement, this might well be the case. But we have argued that banks' demand is a voluntary one based on a production function for liquidity services, not an arbitrary restriction upon an institution designated to be a 'bank'. Institutions in the Eurosterling market (not that such a market can really be said to exist, thanks to the Bank of England) which provided substitute liquidity services, would require inputs of high-powered money, just as is the case in domestic markets. What competitive advantages would they have over domestic banks to be able to attract the deposits and reserves needed for liquidity production? Much the same question must be asked of the idea that non-banking intermediaries in domestic markets would provide substitute liquidity services.

But are liquidity services the distinguishing characteristic of money? If they are, then perhaps one-third of M3 should be excluded from the definition. This is a conservative estimate of the amount that represents wholesale funds of the non-bank private sector, much of which is held in banks which specialise in wholesale banking. This type of banking differs substantially from retail banking, which is the model outlined earlier. Retail banks exist by producing liquidity services; they endow claims with attributes of capital certainty, convertibility and transferability. The economic basis of wholesale banking is to lower transactions costs in markets for corporate borrowing and lending and to intermediate within the term structure of interest rates. In contrast with retail banking, in which virtually all deposits are in sterling and withdrawable on demand (or at very short notice), wholesale deposits are for various maturities and in a variety of currencies. Unlike retail deposits, where each bank may have millions of small accounts, to which the law of large numbers can be applied, each bank in wholesale business may have only a few hundred large accounts and is not large enough, relative to the total market for wholesale funds, to apply the same principles.

Because the economic basis of wholesale banking is different and the balance sheet structure differs, a different 'production process' applies. A substantial degree of matching of currency and maturity is the rule, even when, with non-bank business, substantial maturity transformation occurs. (Maturity transformation in sterling wholesale banking is only slightly less than that which now occurs in Euro-currency business.) A critical role is played by the interbank market in 'reconciling' the public's preferences with those of the banks. Funds are channelled from ultimate lenders to ultimate borrowers through several banks. What begin as short-term deposits finish up as rollover loans of several years' duration. Each bank is mismatched, but not to any great extent, and no one bank is left with a large share of the transformation. This is in marked contrast to retail operations, in which the transformation is undertaken fully by the bank accepting the deposits. It follows that the Bank's proposals about prudential liquidity, with the higher requirements in interbank funds, strikes at the heart of wholesale banking, and indicates a failure to understand this type of intermediation.

Our immediate concern, however, is that, for wholesale banking activities, there is no demand for base money. In this sense, much of the British banking system has already progressed to a cashless society. Even the concept of a reserve ratio has little meaning, for the demand for marketable securities (bills, CDs) to cover an open position depends on the mismatching, maturity by maturity, not upon any scale measure of the total balance sheet.

Restraint upon the supply of base money will curtail retail banking and those substitutes for retail banking which involve the production of liquidity services using inputs of high-powered money (or, in a pyramid of credit, claims against retail banks). If, as we have argued, wholesale banking involves different services and different production processes, it is unlikely to be constrained directly by monetary base control. The vital question, then, is, should it?

Analogies are helpful, but which is the correct one? At one extreme, we could, as Friedman does, liken the production of money to that of motor cars, with high-powered money like steel. Steel is a vital and irreplaceable input to the production of motor cars, at least in the short run. By restricting the supply of steel, control could be exercised over the production of motor cars, even though there are different brands and different models. Alternatively, we could envisage money to be like containers. There are several different types of container (steel cans, glass, aluminium, plastic) and many different production processes involving quite different inputs. Each type of container, and its associated input, has its distinctive merits, but all can be substituted at a price. Is the same true of different forms of banking and finance more generally?

Thus the monetary control debate is really a debate about the first principles of monetary economics. Is the aim of monetary policy to control something special called money, or is it to control all borrowings and lendings and all forms of financing in the economy? In the latter case, the Bank's interest rate policies are clearly appropriate. But if money does have a special place, it is unnecessary and inefficient for the Bank to control all borrowings and lendings

when a more direct means of controlling the relevant money supply is available. Monetary base control will involve interest rate variations as a by-product or as a means to an end, but it may not prove necessary to deflate all borrowings and lendings and alter all credit conditions in the economy on the way. Altering all financing demands in order to change one particular form of financing is a blunt instrument.

There is something to be said for both views. Proponents of monetary base control have, somewhat slavishly, applied a theory developed in the United States, with its preponderance of retail banking, to the quite different environment of the British banking system. On the other hand, it is surely the case that those bank and non-bank claims which are backed (directly or indirectly) by base money are more liquid than much of wholesale money, which differs little in character from commercial paper. By ignoring the importance of base money to liquidity production, the Bank has overemphasised wholesale banking and failed to distinguish money from credit.

24 July 1980
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6 August 1980

Jim David

THIRD REPORT, SESSION 1979-80, MONETARY CONTROL

I am writing to say that the Treasury have taken note of the Committee's Third Report and the comments it offers on the issues explored in the Green Paper, Cmd 7858. The Report, and the evidence submitted to the Committee in the course of their work on it, will be taken into account in reaching Government views on possible new monetary control techniques. These should be announced later in the year and will reflect the outcome of all the consultation based on the Green Paper.

Yours faithfully
Jim Unwin

J B UNWIN

- cc Principal Private Secretary
- PS/Financial Secretary
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MONETARY CONTROL CONSULTATIONS

ARTICLE BY TIM CONGDON

Note by the Secretaries

The attached article by Tim Congdon, published in the August 1930 issue of the National Westminster Bank Quarterly Review, is circulated for information.

M D K W FOOT

M I WILLIAMS

H M Treasury

The Monetary Base Debate: Another Installment in the Currency School vs Banking School Controversy?

Tim Congdon

The inspiration for the current monetary base proposal seems to have come from academic economists, mostly of the monetarist persuasion, in the United States. Supporters of the proposal make frequent references and acknowledgements to studies carried out at the Federal Reserve Bank of St Louis and the University of Chicago. However, they have other intellectual forebears nearer home, the Currency School of the 1840s and 1850s. It included such now almost forgotten writers as Lord Overstone and Colonel Horrens. The Currency School was opposed by a group of economists known as the Banking School, led by Thomas Fooke and John Fullarton. Nearly every theme in the monetary base debate is a replay, disguised by the different institutional setting, of the controversy between the Currency and Banking Schools over a century ago.

An exercise in historical comparison may shed instructive insights on today's problems. Not only may it serve as a supplement and perhaps a corrective to econometric researches from the American Mid-West, but also there may be a useful lesson in seeing how the nineteenth-century dispute was resolved.

The Currency Principle and the 1844 Bank Charter Act

The central tenet of the Currency School was that the note issue should be regulated so that the currency behaved as if it were a metallic commodity. In the initial public debate on monetary policy, this principle triumphed. The 1844 Bank Charter Act divided the Bank of England into a Banking Department and an Issue Department. The Banking Department had no power to issue notes and, at its inception, it was supposedly free to operate like a private commercial bank. The Issue Department's function, on the other hand, was quasi-governmental: it was to ensure the monopoly of note issue in England by absorbing the note issues of the country banks and it had to ensure that the aggregate circulation of its own notes did not exceed by more than £14 million the value of the Bank's gold reserve. The restriction on the Bank's note-issuing prerogative was fundamental. It embodied the link with a commodity base by making gold holdings the regulator of the note issue. It was equivalent, when expressed in modern terms, to imposing a quantitative limit on the monetary base. In this vital respect, the Currency Principle and monetary base control are almost identical in intention.

There are, however, one or two differences in form. Today the monetary base is regarded as including not only notes and coin, but also deposits by banks at the Banking Department. As we shall see, the

Currency School's neglect of their role reflected a primary preoccupation of central bank practice and was significant from the Banking School's disavowal of the 1844 Act. Perhaps an even more important contrast between monetary base control and the Currency School arises because in the nineteenth century the concept of the 'monetary supply' had not been clarified. The monetary base is now seen as an instrument for manipulating the money supply, composed of gold notes and coin in circulation, and bank deposits. This forms a part of a more comprehensive approach to macro-economic management in which the money supply is emphasized as a determinant of output and price movements. The Currency School did not regard restriction of the note issue in the same way. On the contrary, they were sceptical about the monetary consequences of restricting a 'gold' issue of a banking system that must 'independently' finance on the one hand, the provision of a limited note issue to a non-gold-sterling, and was solely to maintain the pound's convertibility into gold, in that they followed Ricardo's precepts in his 1810 pamphlet, *The High Price of Bullion*.

The Banking School did not conflict with the Currency School on the objective. For them also preservation of the gold standard at £3 17s. 10½d. in ounces was imperative. The difference between the Currency School was on how events if regulation of the note issue was to have objective and on how much discretion could safely be left to the Bank of England. It is not easy to 'value' their position to that of any two-party monetary mechanism. But international events, as of the Currency School are, supportive of the currency base, and in our opinion, the of core and together. To put it in context of government in a nutshell, they would both believe that a reserve and 'monetary expansion' from the growth of the Bank of England's balance sheet should be the touchstone of financial policy.

Currency or 'core'?

Perhaps the most striking forward element in the case of the monetary base control has been that it would not represent a certain 'percentage' of the money supply. As is explained in the following, a currency mechanism increase in the monetary base is accompanied by the money base, an increase in the money supply if two conditions are satisfied: a fall in the rate of the liabilities to the banks' cash holdings, and the 'gold' base of cash holdings to their deposit liabilities, and an increase in the 'gold' base of these liabilities. These methods of reserve, a fiscal question, that directly be resolved, by an examination of 'monetary expansion' and 'gold' base. The weakness of the monetary base ideas that in Britain had, since, seem to lack the stability when the proposal first rose. In the words of the *Monetary Control Green Paper*, even if 'a more penetrating control the base sufficiently closely, it is doubtful whether it would provide a more even growth of the money supply.'

The Currency School also recognized that their argument needed to be validated empirically. But they were more ambitious than modern monetary base supporters. Lacking the immediate concept of the

means of inquiry, they sought a direct relationship between the note circulation and the price level. John Stuart Mill was trenchant in his rebuttal. "In order to bring about the chronological agreement required by their theory . . . they have played such fantastic tricks with facts and dates as would be thought incredible if an eminent practical authority had not taken the trouble of meeting them, on the ground of mere history, with an evidence overmastering." The eminent practical authority referred to by Mill was Thomas Tooke, whose voluminous *History of Prices and the State of the Circulation* claimed to show, on the basis of evidence over the period from 1792 to 1856, that fluctuations in the note issue followed, rather than preceded, fluctuations in the price level.

These statistical alibis might be thought to parallel the modern positions taken by the neo-classics, who appeal to econometric investigations on the stability of the demand for money, and their analogues. Tooke's position bears a superficial resemblance to the Keynesian view that the money supply is endogenous and, as a determinant of other economic developments, has no causative role in the later money process. However, this would be a misinterpretation. Tooke, with other banking School writers, demonstrated only that the note issue, not the money supply as a whole, responded to the price level. He reached this conclusion from observing how the Bank of England responded in the course of the trade cycle. Typically, during the early stages of a boom loans were readily available in the London money market, leading the Bank of England to liquidate because the rate of volume of its assets had to leave the market free. It was later, as the effects of increased commodity prices moved forward and credit tightened, that merchants would come to the Bank for assistance. This would be, given by purchasing bills with its notes, which raised the note issue. In the final stages, as prices advanced quickly and higher interest rates began to force liquidation, the demand for help from the Bank became most keen and the note issue increased sharply. *The History of Prices*, which examined events in minor institutional detail, showed that this sequence unfolded, with few variations, in all the trade cycles of the early nineteenth century. The Currency School was incorrect, therefore, to claim that excessive increases in the note issue were responsible for price inflation or the subsequent commercial crises which threatened convertibility. Hence it was commercial crises which were responsible for excessive increases in the note issue.

Of course, then, did commercial crises originate? Several accounts are to be found in the leading works of the Banking School, but their common theme is an emphasis on the extension of credit. The main forms of credit were bills of exchange and promissory notes or, to use Tooke's phrase, "the issue of . . . in the view of the circumstances most conducive to an augmentation of the circulation of private paper are identical to those which give rise to a spirit of speculation and over-trading". He identified increases in agricultural product prices, due to a poor harvest, and 'the opening of new and extensive markets' as forces giving rise to speculative psychology, but he also thought the rate of interest could be

the culprit? It followed that 'a currency, consisting as ours does, of a considerable portion issued through the medium of credit, is subject to great variations in that proportion and that 'those variations, originating, in most cases in a spirit of speculation and the reaction from it, tend to extend the range, and to accelerate the rate, of the consequent fluctuations in prices, supposing that the rest of the currency, as dispensed by the Bank of England, were stationary in amount'. In brief, Tooke was sceptical about the stability of the ratio of 'credit' and 'private paper' to the Bank's note issue.

'Credit' and the money supply

There is a correspondence between this claim and the present-day criticism of the monetary base that the ratio of banks' deposit liabilities to their cash is too unstable to be relied on for policy purposes. The similarity of the two ideas becomes more evident if the Banking School's descriptors of credit instruments are compared to the now accepted definition of the money supply as notes and coin in circulation with the public, and bank deposits. Perhaps the best such description was given by Fullarton in the second chapter of his *On the Regulation of Commerce*.² Bank-notes were dismissed as 'the small change of credit, the humblest of the mechanical organizations through which credit develops itself'. He saw that it was conceptually feasible for all payments to be made through the banking system and not with the agency of the note-issue. 'Why the whole bank-note circulation of this country might be turned temporarily into a system of book-credits transferable by cheque, or all our banking accounts might be conducted, on the contrary, for promissory notes, and in neither case would the course of monetary transactions be essentially disturbed or altered.' Aside from this theoretical possibility, Fullarton was confident that transactions completed through the London clearing house by cheque far surpassed in amount those completed by notes. He quoted M'Culloch to the effect that, without the expedient of cheque-clearing, a 'general circulation' of £200 million in the year 'least would be required to perform the same business as £50 to £60 million of bank-notes and gold. This 'general circulation' may be equated, not too fancifully, with today's notion of the money supply. Fullarton also understood that the principal use of notes for bankers was to eliminate debts between themselves. 'Cheques are adjusted by mutual transfer at the clearing-house, leaving a balance to be settled in notes and coin of not more than about 6 per cent on the whole sum.' He did not emphasize what he meant by 'the whole sum', but it must be close to what we would now term banks' deposit liabilities. Interestingly, the notes held in a bankers' drawer were considered to 'exercise as little influence on prices and exchanges as 'the gold which is still in the ore'. The anticipation of the twentieth-century practice of excluding vault cash from money supply definitions again illustrates that Fullarton was edging towards a fully-fledged money supply concept.

It could be argued against this deduction that Fullarton and other members of the Banking School had ideas which were too vague to assimilate with something as definite as the money supply; they should

be bracketed instead with the Radcliffe Report tradition with its stress on 'liquidity'. The Radcliffe Report of 1959 questioned the primacy of the money supply by pointing out the scope for substitution between bank deposits and non-moneys, such as building society deposits. The theme of potential substitution between liquid assets was indeed developed in *On the Regulation of Currency*. Fullarton noticed how, before the extension of Bank of England branches throughout the country, its notes had been scarce in certain localities. In Lancashire traders had been obliged to rely on bills of exchange drawn against the best local names. Only as the branch network grew had bills of exchange been supplanted as monetary media. The implication, in Fullarton's opinion, was that bills were 'a ready succedaneum for the bank-note, whenever the necessities of the public may call them again into use'. Another observation he observed was that, over a number of years, the circulation of Bank of England notes in the country as a whole had not increased as much as the level of transactions. He attributed this to the growing practice of payment by cheque and the associated improvement in financial technology. These remarks questioned the significance of the note issue as an influence on financial conditions in very similar terms to the monetary base sceptics who today argue that the public's cash holdings can vary substantially in relation to its bank deposits.

One essential ingredient in the Banking School's critique of the Currency School was, therefore, that control over the Bank of England's note issue would not establish control over 'credit' and it was credit which governed the trade cycle. Although it may be improper to equate 'credit' with today's 'money supply', there are certainly points of resemblance between the two concepts. It follows that the Banking School's position accords with the modern criticism of monetary base control that it would not lead to more exact money supply targeting.

The danger of disintermediation

The trustworthiness of the link between the monetary base and the money supply, and the attractions of switching to non-monetary liquid assets, depend on the competitiveness and efficiency of the banks. If they are uncompetitive, disintermediation into alternative financial institutions is induced. Some advocates of monetary base control contend that fluctuations in banks' cash-to-deposit ratios should be overcome by imposing a mandatory minimum ratio. But, as the *Monetary Control Green Paper* emphasizes, it is exactly this kind of interference which leads to disintermediation. The prescribed minimum may be above what banks need for their own business requirements and, since no interest is paid on cash and profits are lost on their holdings, they are handicapped in their rivalry with other financial intermediaries. As a result, the money supply may be rendered misleading as a measure of monetary conditions. The recent evolution of the American banking system, where deposits have been shifted offshore into the Euro-dollar market to escape the Federal Reserve's burdensome reserve requirements, is an instructive warning of the dangers. These evils are to be avoided by not putting artificial restraints on the banks (or other

financial institutions, for that matter), but by monitoring the expansion of all forms of credit and liquidity. The Banking School recognized this truth in the 1840s and favoured less regulation of the banks than did the Currency School. The principal manifestation of its more liberal attitude was its refusal to accept that note issue should be an exclusive prerogative of the state. The country banks' note issue should remain unrestricted, contrary to the provisions of the Bank Charter Act. In an 1855 issue of his *Circular to Bankers*, William Newmarch, who helped Tooke in preparing the final volumes of *A History of Paper*, recommended multiple issues and inveighed against the Bank of England's monopoly. 'The Sebastopol of Russia is not more dangerous to the liberties and rights of Europe than the great monetary Sebastopol of Threadneedle-street.'²⁴

Lender of last resort

But if the Banking School was right that regulation of the note issue was not a sufficient lever over the financial system and attempts to make it so would cause disintermediation, it could not deny that Bank of England notes differed in an essential respect from the notes of country banks or bills of exchange. They were much more secure. As the Bank of England maintained the largest single gold hoard in the country and it was banker to the government, it was unlikely that it would ever become insolvent. Its note liabilities were free from default risk and its deposit liabilities were as good as its notes while they remained freely convertible into each other. Torrens argued that, since Bank of England notes were legal tender, they had an ultimate 'paying power', whereas cheques had only a 'purchasing power'.²⁵ For this reason, the Bank's note issue had in his view greater importance than alternative means of payment.

The risk-free nature of Bank of England notes gave them the power to improve the financial system's liquidity and support other banks. It was understood throughout the nineteenth century that the Bank would always provide such support if needed. Its acceptance of a lender-of-last-resort role has been dated to Bagehot's time and, in particular, to his *Lombard Street*, which was published in 1873. However, many observers had earlier pointed out its duty to discount bills in difficult conditions.

Among them were members of the Currency School. Overstone conceded the force of assertions from Bank of England directors that 'the contraction of issues made upon discount is, in terms of commercial pressure, impracticable' and said that if the Bank were to conserve its position by refusing to discount, 'she must produce upon the money-market a pressure ruinous from its suddenness and severity', saving herself 'by the destruction of all around her'.²⁶ This admission would seem to distinguish Overstone from the 'modern monetary base' advocates, who object to automatic assistance by the Bank to the discount market because it causes a change in the quantity of monetary base assets. They would prefer the authorities not to adjust the quantity of assistance, but the price at which it is given (ie, the rate of interest).

But the difference is slight and only one of emphasis. Although Overstone did not dissent on the need for support in crisis circumstances, he was ready to justify large and frequent interest rate swings. Since the price of money was set by supply and demand, there was no ground for dispute. There was 'policy, as well as . . . justice, in leaving every man free to judge of his own interests, and to decide for himself the price which it may be worth his while to pay'. He applauded the 1853 repeal of the Usury Laws, which had limited the Bank's discount rate to no more than 5 per cent, since an un fettered discount rate would provide 'a more legitimate . . . source of relief' than rationing credit when the Bank came under pressure. To translate this into modern language, interest rate flexibility had to compensate for less reliable assistance to the discount market and for greater attention to the quantity of notes and coin. It is fascinating that Gordon Papey and his colleagues have written, in a similar vein, that supporters of the monetary base 'argue that interest rates should be ignored completely'.⁷

Evolution of monetary control

Although the Currency School's recommendations were embodied in the 1844 Act, the Bank's financial management in succeeding years was a compromise with both the spirit and, at times, the letter of the legislation. On rare occasions, in 1847, 1857, and 1866, it was necessary to suspend it in fact. The Banking Department's reserve of notes and gold had run so low that the Bank had to be authorized to expand the note issue above the ceiling set in the Act since otherwise it would have had to stop discounting bills, which would have caused a catastrophic financial crisis. Both for Gordon and Locke had predicted, shortly after it received parliamentary approval, that the 1844 Act would have to be relaxed. Their warnings soon proved correct.

The 1847 crisis arose largely because the Bank of England exploited its special following the Currency School's interpretation of the legislation, to conduct the Banking Department as if it were a private commercial body. On 7 September 1844, the Department's private discounts were £2,114,000. By 29 February 1846, they were £13,137,000. According to one later assessment, 'Much of this increased credit seems to have gone in support of speculative or at least questionable enterprises, in particular domestic railways'.⁸ Easy credit prevailed throughout 1845 and 1846, with the Bank's discount rate generally below the market as it sought to expand its business. The reaction came in 1847. As an outflow of gold developed, concern about the Bank's ability to redeem its notes arose and a panic set in. Because of the excessive scale of its commitments, the Banking Department's reserve proved inadequate to meet the demands on it. The climax to the Bank's aggressive, profit-maximizing lending policy was a suspension of the Act by which it was supposedly regulated. *Pinch* carried a cartoon on 'The Obstruction in Threadneedle Street' with John Bull perambled by Peel waving the Bank Charter Act and unable to touch 59 million of gold close at hand in the Issue Department.

After a similar trauma in 1857, the Bank established and obeyed the '1858 Rule' whereby advances were restricted to assistance at quarter's strains or in exceptional circumstances. This principle confined it, in effect, to lender-of-last-resort activity. It had to avoid meddling in direct, although possibly lucrative, competition with other banks. What has been termed the 'Greene-Gibbs' policy, in which Bank Rate was adjusted in response to the proportion between bankers' balances at the Banking Department and its reserve of notes and bullion, evolved under two particularly able Governors in the 1870s. It further distanced the Department from Overstone's conception of it as just another commercial bank. Henry Gibbs, Governor from 1875 to 1877, wrote that by open market operations affecting bankers' balances the Bank could make itself 'the real arbiter' in the City.⁹

The observation is close to that in the 1980 *Monetary Control Green Paper*, where the requirement that the London clearing banks hold 1½ per cent of eligible liabilities as Bank of England balances is described as 'effectively the fulcrum on which the Bank of England works when it seeks to affect short term interest rates through its open market operations'. Indeed, ever since the 1850s actual or potential changes in bankers' balances have been theynchpin of most important monetary policy measures.

The Darling School's insight

Tooke was perhaps the first economist to appreciate this. He saw that the Issue Department was necessarily a passive entity, since its task was to exchange notes and gold at the public's, not its own, initiative. The Banking Department was the genuine locus of power. By its connections with the money markets it was able to influence interest rates and credit conditions. As he wrote in *The History of Prices*, 'The due regulation of the currency depends, in any intelligible sense of the expression, upon the Banking Department and not the Issue Department.' The criterion which governed the Banking Department's actions was the size of its reserve. If this was deemed too low the rate at which it would discount was raised, while a comfortable reserve holding allowed reductions. In this way, interest rate changes could protect the Department's solvency and ensure that it could maintain the convertibility of deposits left with it into notes. The consequence was that the Banking Department's position, with its liabilities dominated by bankers' balances, and not the level of the note circulation (a liability of the Issue Department), became the critical determinant of monetary policy.

The Currency School's error was to think that the Bank's ability to operate as lender of last resort was independent of its note-issuing privilege. But it was because Bank of England notes were free from default risk that they were serviceable in lender-of-last-resort intervention. The division between Banking and Issue Departments was an analytical confusion which led to operational inefficiency. There is an intriguing parallel here between the Currency School's misunderstanding about the nature of a central bank's power in a

Financial emergency and the ambivalence of modern monetary base control advocates towards the lender-of-last-resort function.

The parallel can be pushed further. The Banking School condemned the sterilization of gold in the Issue Department. If the Bank's bullion remained in one pouch, rather than being split into two, it would be able to withstand a drain for a longer period and with less anxiety. Because too much gold was panned up in the Issue Department, the Bank could not take a relaxed view of incipient pressure and defensive interest rate increases had to be larger and more frequent. Tooke accused the 1824 Act of being 'inartificial in aggravating or intensifying . . . the extremes in interest rates which had been conspicuous after its passage'.

There is a striking resemblance between this protest and a typical objection to monetary base control – that control over the base requires big interest rate swings and the more precise the control the greater the volatility. By putting the emphasis on solely the Banking Department's reserve, the Bank Charter Act demanded very exact regulation over the nineteenth-century monetary base. Tooke complained that the resulting sharp transitions from one interest rate to another were 'always attended with some inconvenience, and with a disturbance more or less of existing arrangements'. The sentiment is echoed in the June 1979 *Bank of England Quarterly Bulletin*, which contained an article arguing that it was dubious whether day-by-day monetary base control – 'Could possibly work, mainly because of the time it would take for markets to adjust to the increases or decreases induced by the banks in their attempts to meet their reserve requirements. But even for control over longer periods of time, strict control of the base would throw on to financial markets the whole burden of adjustment at present "shared" by the Bank of England's lender of last resort facilities'. The gap between Tooke's and the bank of England's view on the one hand, and Overstone and Pepper's insouciance towards interest rate fluctuations on the other, is wide. The persistence of this gap represents another common thread between the present debate and that over 100 years ago.

The resolution of the nineteenth-century debate

The 1824 Bank Charter Act survived. Indeed, the seventy years between its passage and the outbreak of the First World War are remembered as a belated era of financial stability. As the underlying rationale for the Act was near to the argument for monetary base control today, it seems that Professor Brian Griffiths and Pepper, the two leading contemporary protagonists for the idea, would be right to appeal to history as an ally in their polemic with the authorities.

But that would be a superficial conclusion. The note issue was subject to a precise quantitative limit in the nineteenth century, but the monetary base as a whole was not. On the contrary, the Bank of England stood ready – both before and after Bagehot's classic exposition of the lender-of-last-resort function in *Lombard Street* – to give assistance to the financial system both to counteract adverse seasonal cash flows and to bolster confidence when a crisis threatened. The Bank's preparedness to

discount bills implied elasticity in the level of bankers' balances. Since they were not fixed in quantity, neither was the nineteenth-century counterpart to the monetary base. The Currency School's neglect of bankers' balances was a conceptual oversight which led logically, but erroneously, to the belief that the Bank of England could engage in two quite distinct activities – profit-maximizing commercial banking and quasi-governmental regulation of the note issue.

The Banking School identified the lacuna in the Currency School position, its silence on the lender-of-last-resort role and a failure to see that this role depended on the Bank's liabilities having a quite different status from those of an ordinary bank. Because of their stronger analytical grasp and insight, Tooke and his associates came to understand the Bank's actual operating rules more quickly and clearly than their antagonists. The most essential rule was that the Bank would increase bankers' balances as much as the system required, but if in consequence the Proportion of notes and gold to total Banking Department liabilities fell unduly it would raise Bank Rate. An interest rate increase would pull gold into London and, hence, into the Bank's coffers; it would also slow down the domestic economy, curb credit and reduce commercial banks' need for central bank accommodation. In due course, a safe Proportion would be restored. The system rested on two premises – that Bank rate should be governed by changes in bankers' balances and associated movements in the Proportion; and that credit was responsive to interest rates, not the quantity of monetary base assets.¹⁶

The modern context

These two premises can be translated into the modern context. The first is tantamount to relating interest rate changes to the monetary base, with the base being allowed to vary according to banks' demands. The *Monetary Control* Green Paper refers quite sympathetically to this as a practical possibility for the 1980s. A desired path for the base, consistent with a sterling M3 target, would be calculated and divergences from it would trigger Minimum Lending Rate adjustments. In the Green Paper's opinion, 'Such a system could certainly be operated, and would not necessarily involve significant changes in the financial system'. The only substantive difference from the late nineteenth-century arrangement would be that the appropriateness of the monetary base would be judged in relation to a pre-ordained arithmetical growth target, not the adequacy of gold reserves.

The second premise can be expressed in today's vocabulary if the concept now termed 'the money supply' is equated with nineteenth-century 'credit'. We argued earlier that Fallation was thinking on these lines. If such an interpretation is correct, the Bank of England's policy before 1914 was very much the same as the strategy it has adopted in the last three or four years. The advantage held by present-day Bank officials is much more extensive information about the amount and nature of credit and, in particular, of credit channelled through the banking system; their disadvantage is greater susceptibility to political pressures.

As the money supply gives more heavily increasing signals about the economy than the monetary base, the authorities' current preference is for interest rates to be geared to variations of money supply from target, rather than for a monetary base-targeted system. Above all, the Bank must continue to permit the quantity of cash to adjust to banks' requirements and enforce its will by changing the price at which cash is supplied. The lesson of the Currency School vs Banking School controversy is that this is a sound and viable approach. There is no need for the radical functionalist plea for a full-blooded commitment to monetary base control would erode.

Barrow is sufficient to shocks and its evolution by adaptation to events, if a fiat currency system was successful only by accident. Its base, as both the Currency and Banking Schools maintain, was gold. But very few transactions were actually conducted in the metal. Paper money predominated and it was the quantity of paper money which determined prices, by increasing the gold price and changes in financial technology combined to produce a greater rate in the money supply more nearly comparable with practice of stability than before or since. As Keynes noted in 1922, 'stock of bank notes is not to the general enjoyment of these and projects' because 1914, 'gold might not possess all the theoretical advantages of an artificially regulated standard, but it could not be compared with one had proved reliable in practice'. If today gold lacks credibility as the foundation for a currency system, reliance must be placed instead on an artificially regulated standard' formalized in annual money supply targets. But the shift from the gold standard to money supply targets should not be allowed to hide the remarkable continuity in the Bank of England's broad objectives and operational procedures over the last 120 years.

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