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Author(s): George Selgin

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FREE BANKING AND MONETARY CONTROL*

George Selgin

I. INTRODUCTION

Despite growing interest in competitive payments systems and the continuing progress of bank deregulation, relatively little is known about the macroeconomic implications of completely unregulated or 'free' banking. Its advocates view free banking, where competing banks freely issue monetary liabilities redeemable in base money,[1] as a means for 'depoliticising' the money stock by replacing public holdings of government money with private bank money while limiting changes in the monetary base. Such a programme begs many crucial questions. How would the (unregulated) stock of bank money be determined? Would free banking enhance or reduce macroeconomic stability compared to regulated banking? What implications would free banking have for the proper conduct of monetary policy?

Lawrence H. White (1984, ch. 1) employs a model of a free banking system to answer some of these questions. However, because it concerns free banking as practised in Scotland in the nineteenth century, White's model assumes an open economy operating in an international gold standard, where the price level is given and there is no such thing as monetary policy in its modern sense.

Were free banking to reemerge today, it would probably be based, not on a gold standard, but on irredeemable paper ('fiat') base money issued by a former or extant central bank. Under this form of free banking, the price level is no longer given, and conventional monetary policy questions remain relevant. In particular, would free banking on a fiat standard simplify or complicate the control of nominal variables, including the price level and nominal income? Would it be easier or more difficult to adhere to a simple monetary rule? What would happen if the stock of base money were frozen as a means for ruling out discretion altogether?

Answers to such questions require an analysis of determinants of the money stock in a closed free banking system with a centrally-determined stock of base money. Here I offer some preliminary answers based upon Carl Christ's (1989) formal interpretation of Selgin (1988). The features of free banking stressed here because they bear most on questions of monetary control include (1) the freedom of banks to issue notes as well as deposits, where banknotes are a more

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[1] E.g. a commodity money like gold or a frozen stock of irredeemable paper money. 'Free banking' is used here in the sense meant by the British free banking school, i.e. as a synonym for unregulated banking, including free competitive note issue.

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perfect substitute for base money;[2] (2) a tendency for banknotes (including redeemable token coins) to displace completely base money in the currency holdings of the non-bank public; and (3) the absence of statutory reserve requirements.

II. A MODEL FREE-BANKING SYSTEM

Imagine a closed economy with b price-taking banks, free from statutory reserve requirements and unrestricted in offering various kinds of financial instruments to the public. For convenience, let the banks' only liabilities be banknotes and chequeable deposits. The banks begin each planning period with identical market shares. Notes issued by different banks are distinct but redeemable at equivalent par values in (fiat) base money. Consumers favour particular brands of notes, not by accepting them at favourable exchange rates, but by retaining them as part of their asset portfolios, spending or depositing unwanted notes. The banks keep widespread branch networks and join a central clearinghouse, and competing issuers redeem rather than reissue notes from rival banks: that is, they treat them in the same manner as contemporary banks treat cheques. All of these assumptions are consistent with historical free banking experience (Selgin, 1988, pp. 23–6; Dowd, 1992).

Assume also that, owing to the availability of close substitutes, the public does not *ordinarily* demand base money. This assumption is also consistent with historical free-banking experience. During its free banking episode (1716–1845) Scotland was 'a country almost without gold', the first object of anybody getting hold of a gold sovereign being 'to get quit of it in exchange for a bank note' (Checkland, 1975, p. 382). Virtually all cash payments were made in banknotes or (when small change was needed) in token copper or silver coins, despite the outlawing of notes under £1 by the Act of 1765. Canada in the 19th century exhibited a similar tendency towards full substitution of fractionally-backed bank money for commodity base money.[3] Today's public demand for currency in the form of base money is by-and-large a byproduct of legal restrictions that have prevented banks from offering close substitutes. Complete substitution of bank money for base money requires that every consumer has confidence in at least one bank, which we take for granted until Section IV.

The Payments Process

The banks adjust their balance sheets at the onset of discrete planning periods. Each period involves N payments and clearing transactions, where cheques

[2] The term 'banknotes' need not be taken literally: it may refer to any bank-issued means of payment capable of supplanting public holdings of base money, e.g. deposit credits subject to point-of-sale electronic transfer.

[3] National Monetary Commission (1910, p. 53). Although commodity money may be uniquely risk free, this advantage may be outweighed by the greater convenience of paper substitutes. Certain classical economists, including Smith and Thornton, believed prohibition of small-denomination banknotes necessary to keep gold and silver in circulation. Full 'fiduciary substitution' is also possible under a fiat-money regime, where it might be aided by interest payments to holders of bank-issued currency (McCulloch, 1986, p. 75). See Selgin (1988, pp. 169–70). Christ (1990) presents alternative models of free banking in which the public hold base money.

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and notes received from rival banks are returned through the clearinghouse to their issuers for redemption.[4]

Payments to and from individual banks are governed by a random process. This process drives individual banks' demands for reserves, in turn establishing an equilibrium value for the banking system reserve ratio. Although many alternative random processes might be considered, most share a number of common attributes and implications. Here we assume a process similar to that described long ago by Edgeworth (1888). Suppose that an urn contains tickets or 'cheques', e.g. a cheque ordering the transfer of £1 from bank i to bank j. (The same 'cheque' can also stand for bank j's receipt of a £1 note issued by bank i.) There are b^2 cheques in the urn, each representing one possible type of transaction among the b banks, including the transfer of £1 from a bank to itself. We are interested in the net value of negative transactions (reserve losses) for a representative bank after a series of N transfers or drawings with replacement. This value can be shown to be a symmetrically-distributed random variable with zero mean and standard deviation $\sigma = (1/b)\sqrt{[2N(b-1)]}$. The formula for σ has to be modified to allow for payments greater than £1. For simplicity, let us assume that the real value of each transaction is a constant, to which a value of £1 is assigned.[5] Then, if P is the price-level, the nominal value of total transactions per planning period is PN. Although the standard deviation of a bank's net reserve losses varies in proportion to the square-root of the number of payments, it varies in *strict* proportion with the nominal value of each payment. Thus

$$\sigma = \frac{P}{b}\sqrt{[2N(b-1)]}. \tag{1}$$

The value of σ is shown below to be a main determinant of the representative free bank's demand for reserves, which in turn plays a crucial role in determining the equilibrium quantity of bank money in a free banking system.

Reserve Equilibrium

Although the public holds no base money, the banks must settle their net reserve losses in base money at the end of each planning period. Because payments and consequent reserve losses are random, individual banks faced with sufficiently high short-run reserve adjustment costs will want to begin each planning period with positive base-money reserves (or clearinghouse reserve credits) even when the expected value of net reserve losses is zero. The total planned demand for reserves is, in this case, entirely a precautionary demand.[6]

[4] Notes may complete multiple transactions between trips through the clearing system. Assuming, however, that the multiple is more or less constant, it can be ignored.

[5] A more complete model would allow the real value of an individual transaction to vary. Later we shall introduce a variable, ϕ, representing the proportion of real *income* transactions to total transactions.

[6] If banks establish clearing-account reserve credits by depositing base money with the central clearinghouse in lieu of holding their own reserves, competitive pressures might in turn induce the clearinghouse to trade some of its holdings of base money for interest-earning assets. Under a commodity standard this process could in principle continue until all of the base-money commodity became absorbed in non-monetary uses. The system would then become a full-fledged Wicksellian 'pure credit' system (1936 [1898], p. 68), with the value of bank money determined by the non-monetary value of the numéraire

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A well-known conclusion of the literature on precautionary reserve demand, beginning with Edgeworth, is that a bank's demand for reserves will be proportional to the standard deviation of its net reserve losses (Baltensperger, 1980, p. 9; Laidler, 1991, p. 186). If we denote a bank's demand for reserves as σq, then the factor of proportionality, q, reflects the representative bank's desired level of security against the prospect of a settlement default, chosen to equate the marginal opportunity costs (forgone interest) and marginal benefits (reduced anticipated costs of reserve shortages) of reserve holding. The value of q will in general be positively related to reserve shortage penalties and negatively related to the rate of interest (Olivera, 1971, pp. 1102–3).

Suppose that each bank starts out with a reserve endowment of R/b, where R is the (exogenous) stock of base money, all of which may be held by the clearinghouse. Equilibrium of reserve demand and supply for the representative bank then requires that $\sigma q = R/b$. If a representative bank's reserve demand (σq) exceeds its reserve endowment (R/b), the bank will attempt to increase its reserves by contracting its loans. With fixed R it is, of course, impossible for the banks collectively to add to their nominal reserve holdings. Yet in trying individually to do so the banks will contract their loans and the money stock, lower the nominal value of transactions ($= PN$), and thereby collectively reduce σ to the point where their unchanged reserve endowments become optimal. In a like manner, were a representative bank's reserve demand to fall below its reserve endowment, the banks, in trying to rid themselves of excess reserves, would expand loans, the money stock, and the volume of bank clearings until their reserve needs became equal to their reserve endowments.

The reserve-equilibrium condition for the banking system is

$$R = \sigma bq, \tag{2}$$

where σbq represents the total demand for bank reserves.[7]

III. MONETARY EQUILIBRIUM

We have yet to show precisely how nominal clearing transactions are related to, and influenced by, the quantity of bank money. We can do this by referring to the equation of exchange,

$$MV = Py, \tag{3}$$

where M is the stock of bank money and y and V are exogenous 'permanent' or 'natural' planning period values of real output or income and the income velocity of money. By treating velocity as an exogenous variable, we avoid

commodity. Under a fiat standard a similar process would lead to hyperinflation, since there would be no well-defined nonmonetary demand for fiat money. It may, therefore, be necessary to require that a fixed fraction of clearinghouse balances be backed by fiat money to preserve a fiat money standard in an otherwise free banking system. This would *not* be a reserve requirement in the usual sense.

[7] The argument that aggregate reserve demand is simply equal to b times a representative bank's demand for reserves is valid given the assumption of stationary bank market shares. Using (1), total reserve demand can be written more explicitly as $\sigma bq = (Pq)\sqrt{[2N(b-1)]}$, which agrees with the well-known 'square root law' of precautionary demand. Reserve demand varies in proportion to the square root of the number of gross clearing transactions per period. Olivera (1971) demonstrates the robustness of the square-root result for diverse stochastic payments processes.

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making any specific assumptions concerning overall determinants of money demand. It is assumed, however, that changes in velocity involve uniform changes in real demand for every bank's notes and deposits.

The equation of exchange shows the relation between the money stock and the nominal value of *income*. Let ϕ represent the proportion of real income transactions to total transactions, where $0 < \phi < 1$. Then

$$y = \phi N. \tag{4}$$

The equation of exchange can then be rewritten as $MV = \phi PN$, showing clearly the relation between nominal clearing transactions (PN) and the money stock. The equation also demonstrates a frequently overlooked point, namely, that the volume of clearing transactions (and, hence, the demand for bank reserves) does not just depend on the outstanding quantity of bank money. The public can influence the demand for bank reserves by altering the volume of transactions arising from a given money stock – that is, by altering the velocity of money.[8]

Equations (1)–(4) constitute an equilibrium system that is a more explicit version of Christ's (1989) system. The solutions for the price level and money stock in terms of R, V, y, q, b and ϕ are

$$P^* = \frac{R}{yq}\left[\frac{\phi y}{2(b-1)}\right]^{\frac{1}{2}} \tag{5}$$

and

$$M^* = \frac{R}{Vq}\left[\frac{\phi y}{2(b-1)}\right]^{\frac{1}{2}}. \tag{6}$$

Equation (6) implies that the stock of money adjusts in inverse proportion to changes in velocity. If velocity falls to one-half its former level, the money stock will double, whereas if velocity doubles the money stock will fall to one-half its original value, other things being equal. To see why, consider equation (3) (the equation of exchange) and equation (1). Monetary equilibrium requires that a doubling of V be accompanied *either* by a halving of M *or* (output being assumed constant) by a doubling of P. The latter alternative would, however, lead to a proportional increase in σ and hence to a proportional increase in aggregate reserve demand. Given a fixed stock of reserves, banks must contract their balance sheets to prevent the demand for reserves from exceeding the available stock.

The price-level, on the other hand, is shown by (5) to be invariant to changes in velocity, i.e. to changes in the demand for money relative to real income. Nominal income is likewise invariant, as is seen by multiplying both sides of (6) by V, taking (3) into account. This manoeuvre also shows the relation between

[8] Most discussions of the theory of bank money supply treat the standard deviation of expected reserve deficits as being proportionate to the square-root of the *quantity* of bank money only. Morrison (1966, p. 17) acknowledges, however, that in the presence of transactions costs 'the amount of [reserves] banks desire to hold might be expected to vary directly with the frequency of transactions'. An empirical test, performed using Frost's (1971) model and data and substituting debits for deposits, confirms Morrison's conjecture (Selgin, 1992, pp. 173–4).

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nominal and real income: nominal income grows in proportion to the square-root of growth in real income, holding ϕ constant. This result reflects economies of scale in reserve demand.

These results assume that the other variables – R, q and b – remain unchanged. The effects of *ceteris paribus* changes in each of these are readily ascertained. An increase in R – the total quantity of base money – leads to proportional increases in the money stock and the price level, with no change in the equilibrium reserve ratio, R/M. An increase in q, due to an increase in the penalty cost of default relative to the loan rate of interest, leads to a proportional fall in the money stock and the price level and to a proportional increase in the reserve ratio, while a decline in q has the opposite effect. A doubling of b leads to a fall in σ but (somewhat surprisingly) to a *decline* in the price level, money stock, and nominal income by a factor just less than $\sqrt{2}$. The explanation has to do again with economies of scale in reserve holding: with P, M and MV unchanged, the demand for precautionary reserves of the new entrants would exceed the reduction (due to the fall in σ) in aggregate precautionary reserve demand of the established banks. Hence with fixed R, N, and y the new equilibrium requires monetary contraction. At the opposite extreme, if there is only one bank, no interbank debts have to be settled, so that reserve demand falls to zero and the bank-money multiplier becomes infinite. Both theory and history suggest, however, that free banking is not likely to result in any such natural monopoly (Dowd, 1992; Schuler, 1992, pp. 15–19. Compare Podolski, 1986, p. 196).

Two further implications of free banking deserve notice. First, the system money multiplier, M/R, is independent of changes in the desired currency-deposit ratio. This result follows directly from the assumption that currency in the hands of the public consists of banknotes only, which are not base money and which are assumed to require the same fractional-reserve backing as deposits. If the public insists on holding some fraction, z, of base money in its money portfolio in addition to banknotes and deposits, then the money multiplier will adjust inversely with changes in z, as in conventional textbook models (Christ, 1990). The point, however, is precisely that under free banking consumers can employ, and historically have employed, competitively-issued banknotes in place of base money to accommodate most of their routinely-changing currency needs. In consequence, the money supply multiplier is stabilized.[9] (The possibility of a run for base money under free banking is considered in Section IV below.)

Second, the banking-system reserve ratio is determined even where every bank's net reserve loss has an expected value of zero for the planning period. This finding implies, *contra* Goodhart (1989) and others, that free banks could not expand their balance sheets at will simply by acting in concert. Such a

[9] See Section IV below and Selgin (1988, ch. 8). Lloyd Mints (1950, p. 186) long ago noted that the instability of fractional-reserve banking 'is due in part to a wholly unnecessary legal restriction', namely the prohibition of banknotes. In a more complete model a variety of instruments, including travellers' cheques and electronically transferable funds, would be allowed to serve as substitutes for base money. Cf. note 13 below.

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concerted effort would not be expected to lead to long-term reserve losses by any particular bank or group of banks. It would, nonetheless, increase the precautionary reserve needs of every bank by causing an increase in clearing transactions, and hence an increase in the standard deviation of net reserve losses faced by individual banks.

IV. PANICS AND RESTRICTION OF PAYMENTS

The discussion so far has abstracted from consumer demands for base money by taking public confidence in the banking system for granted. So long as such confidence is widespread, the public has no reason to hold base money in a closed free banking system where banknotes are a convenient form of hand-to-hand money. 'Routine' (non-panic driven) demands for currency are readily satisfied by issues of banknotes, with no drain of base money from bank reserves.

A loss of confidence in one bank, or in a limited subset of banks, by itself does not motivate any lasting increase in public demands for base money. Instead such a loss of confidence would typically lead to a redistribution of reserves and demand for bank money to the remaining banks. The implied fall in the total number of banks would in fact have a somewhat *expansionary* effect on M, P and MV, for reasons described previously. A deflationary increase in public demand for base money must be due to some *general* loss of confidence in banks – a banking panic.[10]

Such a panic could lead to the collapse of a fractional-reserve banking system restricted by law to issuing unconditional demand liabilities. Banks in a free banking system might, however, avoid such a fate by issuing liabilities contractually subject to a 'restriction' of base money payments. When a bank restricts payments, it temporarily stops redeeming its notes and cheques over the counter in base money, while continuing to receive them on deposit along with cheques and notes from other banks. The option-clause notes issued by Scottish banks from 1730 to 1765 are one example (White, 1984, pp. 26–30). By restricting payments banks can insulate the money stock and other nominal magnitudes from panic-related effects. According to Dowd (1988) and Gorton (1985), because restriction would be very costly to any banker who resorted to it unnecessarily, it tends to be resorted to only under panic conditions when its use serves both banks' and bank customers' interest.[11] Bank-initiated restrictions of payment need not (and historically did not) interfere with the regular settlement of *interbank* debts, and so would not reduce banks' demands for precautionary reserves for clearing settlements. The primary effect of restriction is to prevent any increase in public holdings of base money. The

[10] On the relatively low probability of a general banking panic under free banking conditions see Selgin (1989b) and Dowd (1988).

[11] Diamond and Dybvig (1983) consider private deposit contracts allowing for restriction of payments as a market-based alternative to deposit insurance for protecting a banking system from panic-related withdrawals. They argue, however, that restriction prevents bank withdrawals for non-panic-motivated consumption. Selgin (1993) argues that this conclusion rests on the absence of bank-issued money in the Diamond-Dybvig model: claims on a bank cannot be used to *buy* the consumption good, but instead are *redeemed* for the consumption good.

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results described in Section III above would therefore continue to apply to a free banking system in which payments have been temporarily restricted. Also, because restriction typically would not apply to interbank transactions, an ill-managed bank could still fail despite having restricted payments. Liabilities subject to restriction would therefore continue to embody the beneficial incentives attributed to demandable banking debt by Calomiris and Kahn (1991) and others.

V. EFFECTS OF LEGAL RESTRICTIONS

Statutory Reserve Requirements

Statutory reserve requirements and the prohibition of private banknotes are two reasons why real world banking systems do not function like a free-banking system. The model is easily modified to show the consequences of a statutory reserve requirement by rewriting (2) as

$$R = (1-\pi)\,\sigma bq + \pi M, \tag{2'}$$

where $0 < \pi < 1$ is the minimum legal ratio of reserves-to-bank-issued money. Equation (2′) shows total reserve demand to be the sum of net precautionary and legal requirements. Solving for M gives:

$$M^* = \frac{R}{Vq(1-\pi)}\left[\frac{\phi y}{2(b-1)}\right]^{\frac{1}{2}} + \frac{R}{\pi},$$

which shows that velocity-induced adjustments in the money stock are more limited than in the free-banking case. Consider, for example, a situation where the stock of base money is frozen and velocity is declining. Under free banking the money stock could, as we have seen, grow in response to a fall in velocity sufficiently to prevent any contraction of aggregate money income. If a statutory reserve requirement is imposed, however, marginal changes in velocity are only partly offset by opposite changes in the money stock, with the price level (and, by implication, real output if prices are 'sticky') bearing the burden of the remaining equilibrium adjustment. With a given reserve base, or a base growing at a fixed rate, statutory reserve requirements lead to greater instability of nominal income and a greater likelihood of deflation in response to secular or cyclical declines in velocity. Statutory reserve requirements may, therefore, increase rather than reduce the perceived need for discretionary monetary policy.

Prohibition of Bank Notes

The effects of prohibiting banknote issuance are more complicated. When banks cannot issue notes, the public's 'routine' demand for currency becomes a demand for base money. To allow for this, our system of equations must include

$$\sigma = \frac{P}{b}\sqrt{[2N(1-c)\,(b-1)]}$$

$$R = \sigma bq + cM,$$

where c represents the public's desired currency-to-deposit ratio, and it is

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assumed that the ratio of currency to deposits reflects the ratio of currency transactions to transactions conducted by cheque. The standard deviation of bank clearings now depends upon the frequency of deposit transactions only. Solving the new system for M gives

$$M^* = \frac{R}{Vq}\left[\frac{\phi y}{2(1-c)(b-1)}\right]^{\frac{1}{2}} + \frac{R}{c}.$$

An increase in the currency ratio (unlike an increase in the reserve ratio) has an indirect expansionary effect because it reduces total clearing activity and, hence banks' precautionary reserve needs. But this indirect effect is slight compared to the direct contractionary (reserve-reduction) effect of an increase in c. The latter effect accounts for much of the 'inherent instability' of fractional reserve banking systems that rely exclusively or primarily on base money to satisfy routine public demands for currency.

VI. IMPLICATIONS FOR MONETARY CONTROL

We are now prepared to state some general implications of free banking for monetary control. Assuming that ϕ, q, y and b remain unchanged, money income is a constant multiple of the stock of base money, unaffected by changes in the desired currency-deposit ratio or the income velocity of money. The banking system automatically accommodates changes in velocity with offsetting changes in the money stock. Otherwise, if the monetary base is held constant, the money stock remains constant. Bank money is endogenous in the strict 'cloakroom' or pure-intermediary fashion once described by Edwin Cannan (1935) and more recently revived by exponents of the 'New View' of commercial banking and of 'moneyless' or 'pure-accounting' payments systems.[12]

Yet a free banking system is *not* 'moneyless'. We can therefore consider its compatibility with particular monetary policies. By minimizing the destabilising effects of changes in velocity and the currency-money ratio, a free banking system would obviate problems that traditionally rationalize discretion in central banking systems. Free banking thereby remedies some of the more obvious drawbacks in proposals (e.g. Friedman, 1984; Timberlake, 1986, pp. 760–2) for freezing the monetary base. It also complements more 'moderate' and popular policy rules aimed at targeting the growth of money income. Under free banking such targeting would be simplified. The authorities would be relieved from the difficult task of responding to velocity-induced changes in income or from having to compensate for reserve losses due to changes in the public's requirements for hand-to-hand money. The range of the authorities' discretion could be curtailed accordingly.

If real output is growing, free banking still succeeds in offsetting changes in velocity. Both the money stock and nominal income will be positively (though less than proportionately) related to real output. The price level, on the other

[12] On the 'New View' see Selgin (1989a); on 'moneyless' payments systems see Hoover (1989, ch. 5).

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hand, will tend to decline. These results suggest that a free banking system in a growing economy with a frozen monetary base would offer something of a compromise between constancy of nominal income and constancy of the price level, regardless of the behaviour of velocity and currency demand. This range of outcomes, plus others that could be achieved by allowing the base to grow at some constant rate, suggests that free banking may promote rather than endanger monetary stability, and that it could contribute toward the success of a strict, simple and enforceable monetary rule.

This conclusion appears to contradict the more frequently-encountered view that deregulation tends to 'alter unpredictably the relationships between variables, upon whose stability the effectiveness of monetary control depends' (Podolski, 1986, p. viii). In particular, deregulation is supposed to undermine 'the stability of the links between certain monetary aggregates and nominal income' which provides the empirical basis for monetary targeting (Goodhart, 1986, p. 79). The apparent contradiction is resolved by observing that past discussions have focused mainly on the implications of financial liberalization for the behaviour of the demand for money, concluding that deregulation would tend to destabilize the demand for any particular monetary aggregate. We have not questioned this last claim. Indeed, in treating velocity as an exogenous variable we have scrupulously avoided making any assumptions concerning the stability of the demand for money. Where our results differ is in heeding the implications of complete deregulation for the behaviour of the money *supply*. Although free banking may well loosen the links connecting velocity to variables like the rate of interest, and although it tends as well to loosen the links connecting the monetary base to broader monetary aggregates, it makes for a relatively *tight* link connecting the monetary base to nominal income.[13] Because the monetary base is itself relatively easily controlled, and because the stability of nominal income is ultimately more important than that of any monetary aggregate, the presence of this one tight link under free banking serves to improve rather than reduce the overall prospects for monetary control. In short, although free banking makes monetary targeting in the traditional sense of controlling the growth of some monetary aggregate more difficult, it also makes such targeting unnecessary.

University of Georgia,

Athens, GA, USA

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[13] Some tightening of the link between the monetary base and nominal income has already been observed in connexion with financial innovations in the United Kingdom during the late 1970s and early 1980s (Johnston, 1984). This appears to have been due in large part to the public's increased resort to bank cheques and electronic funds transfer in place of base money. The use of private banknotes as currency under free banking is viewed here as providing a basis for *complete* substitution of bank- for base-money. Although Goodhart (1986, p. 97) correctly observes that there has been 'no attempt by financial intermediaries to chip away directly at the authorities' monopoly in the provision of currency', he neglects to add that such attempts might be illegal under existing banking laws.

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