Free Banking in Britain

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Theory, Experience and Debate, 1800–1845

SECOND EDITION (REVISED AND EXTENDED)

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To my wife, Linda

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Preface to the First Edition

Economists who today support open competition in other industries commonly balk at the prospect of unfettered competitive supply of currency. Theoretical concerns notwithstanding, this attitude may ultimately be an outgrowth of early 19th-century English experience. England was beset with notoriously unstable country banks whose instability was an indirect consequence of the Bank of England's privileges. The seeming perniciousness of the competition among the country banks in England turned many English economists and policy-makers away from free trade in banking. The supposed inherent instability of unregulated banking provided the pretext for the Bank of England's accumulation of centralising privileges and powers through legislation, culminating in the Bank Acts of 1844 and 1845. It was as the result of legislative acts that the Bank of England came to play its central roles in the English monetary system: virtually the sole holder of gold reserves, guardian of the foreign exchange, lender of last resort, and banker to the state. Thereafter the English system, centred on the Bank of England, served as a model for national banking systems throughout the world. Today the triumph of central banking is largely taken for granted.

Yet England might have moved in another direction in the second quarter of the 19th century. It might have allowed free banking, the unrestricted competitive issue of specie-convertible money by unprivileged private banks. In the banking system of Scotland the English had close at hand the example of a free banking system operating successfully for more than a century. The coronation of the Bank of England as a central bank in 1844 was not compelled by lack of a viable alternative. Nor did free banking lack cogent defenders.

This work re-examines free banking in Britain, both as it existed and as it was regarded by economists of the day. After building a theory of free banking, its central chapters explore the history of Scotland's experience with free banking and the contemporary policy debate over the question of whether Parliament should allow free banking in London. The results begin to provide, we believe, a vindication of free banking in theory and in practice and a rehabilitation of the advocates of free banking. The resuscitation of the heretofore neglected Free Banking School in the British monetary controversies of the 1820-50 period yields, as an important by-product, a revised picture of those famous debates.

As the final chapter emphasises, the question of free banking or central banking need not be solely of antiquarian interest. F. A. Hayek (1978) is foremost among those trying to make it a live issue once again. Whatever the chances of political success for 'denationalisation of money' in the near future (they admittedly seem to be small), it is necessary to consider the feasibility of free banking in order to gain a proper perspective on the role of central banking in a market economy. If the market process is competent to evolve a stable and self-regulating monetary order in the absence of a privileged central bank, as seen in Scotland, then central banking cannot be regarded as a necessary framework without which a free market economy would collapse. It must instead become evident that central banks exist for a different reason, principally that central governments have sponsored them as an effective source of revenue through money creation.

An unintended consequence of central bank activity, one stressed by economists beginning with the Free Banking School and moving on to Mises (1912; 1928) and Hayek (1935) and on still farther to Friedman (1960) and Lucas (1981), is the creation of monetary instability and business cycles. The severity and recurrence of business cycles in modern industrial economies should be viewed as evidence of endemic fumbling not on the part of the market order's invisible hand, but on the part of the non-market institutions of monetary authority. This point of view has been put forth strongly by Hayek (1978, p. 97):

> 'The supposed chief weakness of the market order, the recurrence of periods of mass unemployment, is always pointed out by ... critics as an inseparable and unpardonable defect of capitalism. It proves in fact wholly to be the result of government preventing private enterprise from working freely and providing itself with a money that would secure stability.'

It may seem odd that a work on free banking by an American economist does not examine the well-known American experience and debates over free banking. It became evident early in the research stage that this work could not cover both American and British free banking in adequate depth. The choice was made to focus on Britain for three reasons. Firstly, the trial of free banking in Scotland was both longer and more indisputably free of significant government regulation than the various trials of free banking in American states. Scotland made a clearer case study. Secondly, the debates over free banking in Britain show a higher overall degree of sophistication than the American debates. Thirdly, and most importantly, the fact that Britain both experienced and debated free banking on a major scale is far less well known at least to American economists - than the fact that the United States went through a period of controversy over and experimentation with free banking. There remain for other works the interesting tasks of reinterpreting the American experience and debate, and contrasting them with the British experience and debate explored here.

Lawrence H. White

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This study is a revised version of my doctoral dissertation at UCLA. My greatest intellectual debts are to my dissertation chairman, Axel Leijonhufvud, and to Walter E. Grinder of the Institute for Humane Studies. Walter has been a continual source of ideas and encouragement to me. He suggested during my college years that I look into the writings of William Leggett, an American political-economic essayist of the Jacksonian period. It was in Leggett's (1837) work that I first bumped into a reference to the free banking system of Scotland. Axel Leijonhufvud's wide-ranging monetary theory course in winter quarter, 1979, allowed me the chance to investigate in a term paper whether the wonderful claims Leggett made on behalf of the Scottish system were true. (With only slight exaggeration, they were.) As a later expanded version of this paper was too long for publication as a journal article, Axel sagely suggested that, rather than cut it, I expand it still further into a dissertation. He naturally (and generously) became its chairman. William R. Allen, Robert Clower, D. C. Moore, Ken Sokoloff, and Mary Yeager helpfully served on my oral examination committee, with Professors Clower, Sokoloff, and Yeager staying on as certifying members for the dissertation.

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G. Checkland, and Arthur Shenfield provided useful comments on early drafts of Chapter 2. Charles W. Munn was particularly helpful by pointing out some factual errors arising from my initial reliance on untrustworthy sources. Jack High served as an invaluable sounding board in developing the exposition of Chapters 3 and 4. Frank W. Fetter graciously provided a thorough bibliography of the British monetary pamphlet literature that made my time in the London libraries far more productive than it otherwise could have been. Several of my co-fellows at IHS in the summer of 1981 were helpful: Robert L. Greenfield, Leland B. Yeager, R. M. Hartwell, and Jennifer Roback. George Selgin forced me to put in order my views on Banking School doctrine. David Glasner made useful comments on Chapter 4. Anna J. Schwartz provided valuable criticism of Chapter 5. Colin Day, as my editor, supplied a judicious amount of overall guidance.

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Finally, and most deeply, I thank my wife Linda for moral support and spiritual refreshment.

Lawrence H. White

New York
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Preface to the Second Edition

The modern free banking literature has grown quite a bit in the years since the first edition of this book was published in 1984. Indeed, I have been pleasantly surprised to see how seriously (though often sceptically) mainstream economists have taken the ideas of free banking and *laissez-faire* in money, and how many economists have contributed to advancing the discussion. (Elsewhere I have edited a collection of some of the most important old and new literature, and my colleague George Selgin and I have critically surveyed the modern literature: see White, 1993a, and Selgin and White, 1994.) Quite apart from the academic discussion, the question of privately issued currency has now unexpectedly taken on great practical relevance with the advent of bank-issued 'digital currency' in the form of directly transferable 'smart card' balances.

I have made small changes at various points in the text where revision was necessary in light of recent research. But I have not thought it necessary or desirable to burden the present book with attempts to engage the current literature more fully. That enterprise is pursued in my other writings. I have, however, rewritten the opening paragraphs of the final chapter in light of real-world developments, namely the monetary regime choices urgently facing those countries that have emerged in recent years from hyperinflation or from central planning systems.

At the time the first edition was written, the intellectual market for free banking ideas was not extensive enough to support a great deal of specialisation. This book accordingly offers some theory, some history, some history of economic thought, and some policy analysis, in that order. The history the second chapter's picture of the Scottish banking system between 1716 and 1844 as an example of free banking in practice - is the aspect of the first edition that has been most cited and most criticised. For this edition I have incorporated revisions of the second chapter made for Kevin Dowd's 1992 collection, *The Experience of Free Banking.* And, what is obviously the most substantial change in the text, I have added a new Chapter 3 that embodies a revised version of a reply to my critics first published by Macmillan in the 1991 volume, *Unregulated Banking: Chaos or Order?,* edited by Forrest Capie and Geoffrey E. Wood. I am grateful to these editors for their invitations and constructive comments.

My principal other debts specifically in connection with this edition are to John Blundell of the Institute of Economic Affairs for initiating the project, and to Del Burton and Lori Mock for secretarial support in the non-trivial process of scanning the First Edition to disk.

Lawrence H. White

Athens, Georgia
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CHAPTER 1

A Theory of Free Banking

1.1. Introduction

Free banking, generically speaking, denotes a monetary system without a central bank, under which the issuing of currency and deposit money is left to legally unrestricted private banks.[1] In the 19th century, when private currency was commonly supplied in the form of bank notes redeemable for full-bodied gold or silver coin, free banking was widely advocated. Its advocates could point to Scotland as an area where a nearly unrestricted banking system had functioned successfully for well over a century.

This chapter develops a theory of the mechanisms at work in a free banking system. Chapter 2 uses that theory as a framework for explaining the operation of Scottish banking during the free banking era (1716-1844). Chapter 3 re-examines the Scottish case, responding to recent arguments to the effect that certain features of the case disqualify it as an example of free banking. Chapter 4 establishes that the free banking question was central to the famous British monetary régime debates of the second quarter of the 19th century. Chapter 5 uses the theory and experience previously discussed to interpret and assess the arguments put forth both by free banking's advocates and by the system's critics in those debates. Chapter 6 takes off from the earlier chapters to discuss the relevance of free banking to today's monetary policy debates.

Authors in both the 19th and 20th centuries have claimed that freedom of bank note issue, even where issuers are bound to redeem notes for specie, implies inherent instability in the quantity and value of the currency.[2] The most thorough way to evaluate these claims is to examine the operation of a free banking system theoretically, seeking to discover whether self-interested agents in that system give rise to stable or unstable monetary processes.

The plan of attack is first to consider the equilibrium of an individual bank within a free banking system. The bank issuing redeemable bank notes is modelled as a profit-maximising firm. For simplicity we divide the bank's assets into just two categories, specie (gold and silver coin) reserves and interest-earning assets (commercial bills and loans). On the liability side, we distinguish between bank notes and interest-

[1] Thus Vera Smith (1990, pp.4-7) describes the régime choice made in most countries as one 'in favour of a central banking as opposed to a free banking system' and speaks of 'the disputants in the Free Banking versus Central Banking controversy.' It should be clear that 'free banking' in the generic sense is distinct from the particular sort of systems, unfortunately also known by that label, instituted by a number of antebellum American states. (Those systems were, in fact, rather far from *laissez-faire*.)

[2] For a recent example of this claim, see Brennan and Buchanan (1981, pp.17-18). See also Willett (1968, pp.38-40) and Friedman (1960, p.6), who read inherent instability into the record of American free banking. For 19th-century views, see Chapters 4 and 5.

bearing deposits. We derive the optimisation conditions for the bank, subject to the accounting constraint that assets equal liabilities plus equity.

This exercise shows that the desired note circulation of the bank, considered as a choice variable for the bank, is limited by cost considerations. The rising marginal costs of maintaining notes in circulation set a limit to the bank's ability to expand permanently its holdings of bills and specie through issue of its notes. It may be nearly costless to print up additional notes and to *initiate* their circulation through loans or purchases of commercial bills, but it is quite another matter to *maintain* their circulation in a competitive environment under redeemability. A bank must undertake various investments to make its notes relatively attractive for the public to hold. These propositions similarly apply to bank deposits.

The next step is to consider the equilibrium of a free banking system as a whole. It is simplest to assume that the system operates within a small open economy on an international specie standard.[3] In that case the domestic purchasing power of money is given by the world purchasing power of specie. The demand for real currency balances by the domestic public then determines the desired nominal currency stock. The total stock of specie in the economy is determined by the conjunction of (1) this desired currency stock with (2) the public's desired ratio of coin to notes, (3) the desired specie-note reserve ratios of the various issuing banks, and (4) the shares of the circulation supplied by those banks. Changes in these four variables will change the domestic stock of specie in predictable ways, with the adjustment taking place through international specie flows.

Examination of equilibrium states is, of course, not enough. It is necessary next to reconstruct the market mechanisms that move each bank within a free banking system, and the banks as a group, toward equilibrium and so restrain them from over-issuing. Having seen that the public's desired quantity of a particular bank's notes is a determinate magnitude, given that bank's optimising expenditures, we consider the process by which the actual quantity is adjusted to the desired quantity. The over-issuing bank will find excess notes returning upon it for redemption as note-holders shed their excess notes. This 'reflux' of excess notes occurs either through direct customer redemption or, more commonly, through redemption demands from other banks who have accepted the excess notes as deposits. The second route involves the note-exchange system, an inter-bank clearing mechanism.

Either way the excess notes may return, the over-expansive bank will find its specie reserve dwindling. It must end its expansion and contract to protect itself from running out of reserves. The process by which the notes return may involve temporary changes in domestic prices and self-reversing international specie flows. These will be of greater magnitude the greater is the relative size of the expansive bank (or group of banks acting in concert), suggesting the preferability of free banking to central banking under a specie standard.

Finally, we explain why independent issuing banks in a free banking system left to their own devices will be led, as if by an invisible hand, to participate in a note-exchange system.

3 For the case of the closed economy with a fixed monetary base, see Selgin (1988, 1995).

1.2. The Individual Bank of Issue

A business firm, considered as an economic agent, is conventionally depicted in economic theory as pursuing self-interest in the specific sense of profit maximisation. In recent years the banking firm has been modelled in the same manner, drawing on the familiar optimisation techniques of the neo-classical theory of the firm. The object of the banking-firm literature has been to derive the formal conditions for the bank's optimal size and balance-sheet composition.[4] This approach is adapted here to the situation of a currency-issuing bank, treating the volume of its notes in circulation and the volume of its deposits as among the choice variables for the issuing bank. This model helps to demonstrate that a profit-maximising bank under the constraints of a free banking system does not attempt to push its notes into circulation *ad infinitum*. Rather, the issuing bank seeks to maintain a definitely limited circulation.[5]

In the simplest model adequate to the task at hand, the balance sheet of the issuing bank (Table 1.1.) lists just two assets: specie and bills. The specie (precious metal in coined form) of the bank is its vault cash. Bills are its interest-earning assets. Purchase of commercial bills, or equivalently the granting of loans, is the usual means by which the bank issues its notes. The right-hand side of the balance sheet lists two liabilities, notes and deposits, plus equity capital (or net worth). The outstanding notes of the bank constitute non-interest-bearing sight claims against its specie. Its deposits (these may be thought of either as demand deposits or as time deposits) are interest-bearing claims against its specie. Its capital or net worth is the fund originally contributed to the bank by its shareholders, plus its accumulated net earnings. We let S, B, N, D, and K designate the magnitudes of the respective assets, liabilities, and capital, measured in specie money units. For convenience we treat K as exogenously given, leaving S, B, N, and D as choice variables.

Double-entry bookkeeping imposes the balance-sheet constraint that assets equal the sum of liabilities plus equity capital:

$$S + B = N + D + K \tag{1}$$

Table 1.1. ***Balance Sheet of the Issuing Bank***

Assets		Liabilities + equity
S	(Specie)	N (Notes)
B	(Bills)	D (Deposits)
		K (Equity capital)

[4] For a survey, see Baltensperger (1980). Niehans (1978, pp.166-99) gives a useful exposition. Orr and Mellon (1961) notably anticipate elements of this approach.

[5] The model applies equally to a 21st-century bank that issues currency not in the form of paper notes, but in the form of circulating smart-card balances.

This balance sheet implies, taking equity as given, that the bank cannot make additional loans (acquire more bills) without either also attracting additional depositors or note-holders, or reducing its specie reserves. While a greater volume of interest-earning assets taken by itself means a greater gross income for the bank, the bank must weigh this against the negative income factors ('costs') that necessarily accompany it. Conceptually, we may distinguish three sorts of costs that the bank faces: (1) simple operating costs, (2) liquidity costs, and (3) interest payments to deposit holders. All three costs naturally increase with the volume of the bank's assets and liabilities. Beyond some point their sum increases faster than revenue, so that expansion beyond that point is unprofitable.

The bank's expected profit function is

$$\pi = r_b B - r_d D - C - L \tag{2}$$

where

π = expected profit
r_b = yield rate earned on bills held
r_d = yield rate paid on deposits
C = total operating costs
L = expected liquidity costs (explained below).

We treat the yield rates r_b and r_d as exogenously given to the bank, that is, as invariant with respect to the quantity of bills it purchases and deposits it attracts. This price-taking assumption could easily enough be modified to allow for price-searching behaviour. Operating costs, spelled out more concretely below, are assumed to be a twice-differentiable function of the balance-sheet entries:

$$C = f(S, B, N, D) \tag{3}$$

Liquidity costs are the expenses that the bank must bear in the event of an impending exhaustion of specie during the planning period. These costs may be thought of concretely as the transactions and shipping costs of arranging to purchase (or borrow) specie and have it delivered on short notice. Should temporary deficiency not result in immediate declaration of bankruptcy, they may also include whatever expense is necessary to compensate inconvenienced customers. We may assume the expected liquidity cost function $L = g(S, N, D)$ to take a somewhat specific form:

$$L = \int_S^\infty p(X-S) \cdot \phi(X|N,D)\, dX \tag{4}$$

where

p = percentage adjustment cost for impending specie deficiency, for simplicity assumed constant, so that realised cost $p(X - S)$ is linear in the size of the deficiency, $X - S$;
X = net specie disbursements during the period;

$\phi(X|N, D) =$ probability density function over X, conditional on N and D.

The practical import of Equation (4) is that expected liquidity costs decrease with an increase in S (N and D held constant). It is natural to assume in addition that $\phi(X|N,D)$ behaves in such a way that expected liquidity costs increase with an increase in N or D (S held constant). The greater the volume of its notes or deposits, the greater the threat to the bank that net withdrawals during a period will exceed any given level of reserves. Letting a capitalised subscript denote partial differentiation with respect to the subscripted variable, we may therefore write:

$$L_S < 0, \qquad L_N > 0, \qquad L_D > 0 \tag{5}$$

Profit-maximising equilibrium requires that the bank meet a number of equimarginal conditions. These implications of profit maximisation for the bank may be derived systematically by setting out its choice problem as a Lagrangean constrained maximisation problem:

$$\begin{aligned}
\pi(S, B, N, D, \bar{K}) &= r_b B - r_d D - C - L + \lambda(\bar{K} - S - B + N + D) \\
\pi_S &= -C_S - L_S - \lambda = 0 \\
\pi_B &= r_b - C_B - \lambda = 0 \\
\pi_N &= -C_N - L_N + \lambda = 0 \\
\pi_D &= -r_d - C_D - L_D + \lambda = 0 \\
\pi_\lambda &= \bar{K} - S - B + N + D = 0
\end{aligned}$$

Therefore,

$$r_b - C_B = -C_S - L_S = C_N + L_N = r_d + C_D + L_D$$

We may interpret these results in pairwise fashion:

$$r_b - C_B = -C_S - L_S \tag{6}$$
$$r_b - C_B = C_N + L_N \tag{7}$$
$$r_b - C_B = r_d + C_D + L_D \tag{8}$$

Equation (6) says that in profit-maximising equilibrium, the marginal net revenue from holding bills (yield minus the marginal operating costs of bill holding) is equated to the marginal net benefit from holding specie (reduction in expected liquidity cost minus the marginal operating costs of specie holding). The bank must be indifferent at the margin between holding extra bills and holding extra specie of the same market value, since it can trade one for the other in the market. Equation (7) says that the marginal net revenue from holding bills is equated to the sum of the marginal operating cost and the marginal expected liquidity cost of maintaining notes in circulation. The rising marginal costs associated with a growing volume of banknotes outstanding set a limit to the extent of the bank's discounting operations (i.e., its purchases of bills with its notes). Equation (8) similarly says that the marginal net revenue from holding bills is equated to the sum of the interest payments, operating costs, and expected liquidity costs associated with a marginal addition to the stock of deposits. The rising marginal costs of attracting and servicing deposits set a limit to the extent of the bank's purchases of bills with funds from that source.[6]

$$-C_S - L_S = C_N + L_N \tag{9}$$
$$-C_S - L_S = r_d + C_D + L_D \tag{10}$$

Equation (9) says that the marginal net benefit from holding specie is equated to the total marginal cost of maintaining notes in circulation. The rising marginal costs of maintaining notes in circulation set a limit to the bank's ability profitably to effect permanent purchases of specie with its notes, just as they set a limit to its purchases of bills. Equation (10) similarly says that the marginal net benefit from holding specie is equated to the total marginal cost of acquiring it by attracting and maintaining an increased stock of deposits. The rising marginal costs of expanding the bank's deposit business set a limit to the bank's ability profitably to acquire specie from depositors.

$$C_N + L_N = r_d + C_D + L_D \tag{11}$$

Equation (11) says that the marginal cost of enlarging the bank's assets by an expansion of its note circulation is equated to the marginal cost of enlargement by expansion of deposits. At the margin the two sources of funds are equally costly.

A more sophisticated treatment of the bank's optimisation problem might include other assets and liabilities, or it might make equity capital a choice variable. The spirit of the exercise would nonetheless remain the same. It would remain true that the note circulation of the bank is limited by cost considerations.

We may offer a more concrete interpretation of the various operating costs that the bank faces. The operating costs associated with discounting and holding commercial bills of exchange, or with lending more generally, are costs of information, transaction, and self-insurance. They are expenses incurred in ascertaining the creditworthiness of borrowers, enforcing the repayment obligation upon maturation of the debt, and absorbing some percentage of bad debts. These costs presumably rise at the margin, since as the bank expands its lending it must resort to borrowers whose creditworthiness it knows less well. The bank must either incur greater unit costs to screen these borrowers or suffer a greater percentage of defaulters among them. The operating costs of holding specie are costs of storage and security. These may be flat or even slightly falling at the margin without disturbing the second-order conditions for an interior optimum. The benefit from holding additional specie - the marginal reduction in expected liquidity cost - must be falling, assuming as is reasonable that beyond some point $\phi_X \leq 0$,

6 We assume throughout that second-order conditions are satisfied.

i.e. that the probability distribution over reserve losses has the thinning tails it is natural to expect.[7]

It is very important to understand the cost associated with maintaining notes in circulation, if only because the 19th-century opponents of free banking so often built their case on the implicit assumption that a bank of issue could extend its circulation gratuitously. It is one thing to print up notes and to *initiate* their circulation; it is quite another to *maintain* their circulation in a competitive environment. Where the plurality of competing issuers gives the public a choice among brands of bank notes, each issuer must expend resources in giving his brand the qualities most attractive to at least some members of the public for some purposes. We should expect the rivalry among note issuers to be in many ways similar to the present-day rivalry among issuers of chequing accounts.

Perhaps the most elementary quality dimension on which the public may be expected to distinguish among bank note brands, as among chequing account brands, is ease of redemption. To attract a greater clientele requires, therefore, such expenses as longer operating hours, a greater number of tellers, additional local branch offices, and more extensive advertising of the availability of these conveniences. A second area of quality competition is public confidence in the reliability of an issuer's notes.[8] Individuals will be less disposed to hold the notes of a less trustworthy issuer, so that issuers must compete to convince the public of their superior reliability. Under a system of private bank notes convertible at par into specie, the primary aspect of reliability is the assurance that convertibility will not be delayed or denied on account of the bankruptcy, illiquidity, or fraud of the issuing bank. Confidence-bolstering investments would include construction and maintenance of an impressive bank edifice, publicity of the bank's sound financial health, 'image' advertising, and whatever else effectively reassures note-holders that theirs are not the notes of a fly-by-night outfit. A secondary aspect of reliability is the ease with which the authenticity of individual notes may be ascertained. Enhancing public confidence in their genuine character might call for greater expenditures on the designing, engraving, watermarking, and signing of notes or for a more generous (costly) policy toward counterfeit notes tendered by innocent parties.

A potential third area of circulation-promoting expense is the payment of an explicit interest yield to note-holders. In the bank's expected profit function, Equation (2), interest payments to note-holders would not appear as part of operating costs but as a new term akin to the term for interest payments to depositors. For competition to compel an issuer to make interest payments to note-holders in practice, it would have to be the case that the payment more than compensates the note-holder for the trouble of collecting the payment and that the operating cost of making the payment does not ren-

[7] For an example (akin to Selgin, 1994), suppose that a coin flip determines for each bank customer whether his account will experience an inflow or outflow of funds, in a given amount, this period. Then the value of the bank's total reserve loss or gain for the period, summed over all customers, will approximate the bell-shaped normal distribution, whose tails are progressively thinner.

[8] Benjamin Klein (1974, 1978a, 1978b) has stressed quality competition in providing confidence with regard to inconvertible currencies.

der interest-bearing notes unprofitable for the issuer. A characteristic feature of hand-to-hand currency, however - a feature that helps sustain the demand to hold it even where interest-bearing chequing accounts are available - is the comparative ease associated with using it in small transactions. To collect interest for the holding of a bank note would require going through a bothersome procedure such as having the date of original issue stamped upon it and having the accumulated interest calculated with each paying over of the note. Since the bother involved is the same for any denomination of note, whereas the interest yield rises with the magnitude of the denomination and the length of time between transfers, interest payments are more likely on notes of large denominations and notes that circulate more slowly (these are likely to coincide) than on notes of smaller denominations and notes that circulate more rapidly. The use of large bank notes in a modern economy, however, is itself likely to be less convenient than the use of chequing deposits. Competitive free banking is therefore not inconsistent with an absence of interest-bearing currency. Notice that travellers' cheques today, even though they are paid over but once and are issued competitively, do not bear interest.

The operating costs associated with deposits are similar to those associated with notes. Depositors, like note-holders, must be supplied assurance of the trustworthiness of the bank whose liabilities they hold. Deposit and withdrawal flows, like demands to change notes for specie and vice versa, must be serviced.

We should add here a few words about our treatment of the problem of reserve losses faced by banks. By depicting net disbursements as a stationary stochastic process, and by treating the single bank in isolation, our model admittedly does little to highlight the possibilities of redemption runs against individual banks and general internal drains of specie into private hoards during times of distrust and panic. These shortcomings are perhaps not serious in light of our intended application of the model. Runs and panics were not a problem in Scotland, as we will note and try to account for in Chapter 2. Nor did these problems figure prominently in the debate over free banking in England that we explore in Chapters 3 and 4, although we will see in Chapter 3 that the instability of English banks did stimulate debate over the narrower question of joint-stock banking.

1.3. The System as a Whole

Having considered the equilibrium position of an individual bank of issue, we now consider the equilibrium position of the system as a whole. We may illuminate certain properties of a free banking system by deriving, in a method similar to the 'money multiplier' approach employed by many money and banking textbooks, a relationship between the currency stock and the monetary base (specie stock). The purpose of deriving these propositions in this way is to show that in a long-run comparative-statics sense the nominal magnitudes of a model free banking system are just as determinate as the magnitudes of the familiar fiat money-central banking system examined by the textbooks. For this exercise it may help to think of a free banking system's many issuers of convertible currency as analogous to a fiat money system's many issuers of convertible demand deposits. The free banking system differs in having its reserve ratios determined entirely by bankers' prudence rather than by a monetary authority's requirements or by a combination of required reserve ratios plus some prudential margin. This difference makes the system no less determinate. The free banking model differs again from the textbook case in being a small open economy with fixed exchange rates, and hence having a nominal currency stock determined 'outside' the banking system by the conjunction of the public's desired real currency balances and the purchasing power of money, both regarded as data for the system. This difference means that what our model of the banking system determines endogenously is not the stock of currency or money, but the stock of specie or the monetary base. The monetary base is not determined, as in a fiat money-central banking system, by a monetary authority.

We define the currency stock as[9]

$$C_p = S_p + N_p^1 + N_p^2 + \ldots + N_p^m$$

where

C_p = stock of currency held by the public
S_p = stock of specie held by the public
N_p^i = stock of bank i notes held by the public.

We define the monetary base as

$$S = S_p + S_1 + S_2 + \ldots + S_m$$

where

S = monetary base
S_i = stock of specie reserves held by bank i.

Then

$$\frac{C_p}{S} = \frac{S_p + N_p^1 + N_p^2 + \ldots N_p^m}{S_p + S_1 + S_2 + \ldots \ S_m}$$

Dividing both numerator and denominator by N_p, where $N_p = \Sigma_i N_p^i$, and rearranging, we arrive at

$$\frac{C_p}{S} = \frac{\dfrac{S_p}{N_p} + 1}{\dfrac{S_p}{N_p} + \dfrac{S_1}{N_p^1}\left[\dfrac{N_p^1}{N_p}\right] + \dfrac{S_2}{N_p^2}\left[\dfrac{N_p^2}{N_p}\right] + \cdots + \dfrac{S_m}{N_p^m}\left[\dfrac{N_p^m}{N_p}\right]} \qquad (12)$$

[9] In our notational scheme hereinafter, a superscript denotes the agent to whom the superscripted variable is a liability. A subscript denotes the agent to whom it is an asset. Note that the letter C has taken on a different meaning than given to it in Section 1.2.

The ratio of the currency stock C_p to the monetary base S thus depends upon the ratio of specie to notes held by the public $[S_p / N_p]$ and upon the various ratios of specie reserves to notes in circulation $[S_i / N_p^i]$ held by the issuing banks, weighted by their respective shares of the total note circulation $[N_p^i / N_p]$.

Equation (12) is, in and of itself, simply an *ex post* accounting identity and does not yet express any theory of economic behaviour. We may develop a behavioural theory around the equation by assuming, first, that there exists for the public a specific *desired* ratio of specie to notes held, toward which the *actual* ratio tends. Should the actual ratio be below the desired ratio, the public will convert notes into specie by redemption. Conversely, should the ratio become too high, the public will exchange specie for notes with the issuing banks. We similarly assume that each bank adjusts its actual ratio of vault specie to outstanding note circulation toward the specific ratio it desires to maintain, and that the public adjusts its note-holdings so that the various issuing banks' shares of the total circulation tend toward the specific shares desired by the public.[10] We examine below the mechanisms of adjustment in this last case.

On the basis of these assumptions we may examine some comparative statics of the system as a whole. A few words first should be said, however, about our left-hand-side variable C_p/S. Were we dealing with a closed economy, or an economy with flexible exchange rates, we would treat the monetary base as an exogenously determined variable. Changes in the domestic monetary base would, *ceteris paribus*, lead to changes in the nominal stock of currency held by the public, via a money multiplier process. In the case of a monetary expansion, prices would rise until the expanded stock of currency was willingly held. It is more natural for our purposes, however, to assume that ours is a small open economy with fixed exchange rates, as Scotland was during its free banking period. We accordingly assume that the base money of our free banking system, gold and silver coin, is money throughout the world economy. Precious metals may be freely imported and exported, with a negligible impact on the world-wide purchasing power of the metals. Interregional specie flows bring the actual monetary base of the region into adjustment with its equilibrium base in accordance with the monetary approach to the balance of payments. In this case, with the purchasing power of money set exogenously for our economy by the world market, the public's desired stock of real currency balances determines exogenously to the banking system a desired nominal currency stock.[11] We shall accordingly treat C_p as an exogenously

[10] Note that we lack a basis in optimising behaviour for desired ratios as such. We did not derive one directly in our discussion of the issuing bank, for example. We derived rather the actual magnitudes of S_i and N^i_p for issuing bank *i*. A theory of the demand for money might similarly derive N^i_j, N_j, and S_j for non-bank agent *j*.

[11] Adam Smith (1976, Vol.1, pp.318-20) had this in mind in postulating his 'law of the reflux,' that is, the invariance of the total nominal currency stock to changes in the volume of bank notes (see Humphrey, 1981). Henry Thornton (1802, pp.95-6) with some justice took Smith to task for implicitly assuming that desired currency balances were invariant to the mix of coin and notes, i.e., for assuming that the velocity of circulation of coins equalled that of notes. We assume here that changes in the level of desired nominal currency balances may be conceptually isolated from changes in the desired note-specie ratio.

determined variable for the sake of long-run comparative statics. Changes in desired nominal currency balances will, *ceteris paribus*, lead to changes in the monetary base via an inverse money multiplier process combined with the interregional specie-flow mechanism.

Whether there is price inflation or deflation in our economy - that is, a trend in the purchasing power of money - will depend, as in any sort of gold standard régime, on the secular trend in the globally determined purchasing power of gold.[12] A tendency for the purchasing power of gold to fall would be brought about by greater growth in world gold supplies than in world demand to hold gold at the existing purchasing power. In that case domestic desired nominal currency balances *Cp* will rise and, under the *ceteris paribus* assumption that none of the desired ratios change, a share of the excess gold will lodge in our economy as reserves held by banks to support a greater volume of notes and as specie held by the public.

Inspection of Equation (12) establishes, assuming C_p constant, the following *ceteris paribus* propositions:

$$\text{As } \frac{S_p}{N_p} \text{ rises, } S \text{ rises, assuming (as is natural) that } \sum_i \frac{S_i}{N_p} < 1 \tag{P1}$$

$$\text{As } \frac{S_i}{N_p} \text{ rises, } S \text{ rises} \tag{P2}$$

$$\text{As } \frac{N_p^i}{N_p} \text{ rises, } S \left\{\begin{matrix}\text{rises}\\ \text{falls}\\ \text{remains}\\ \text{constant}\end{matrix}\right\} \text{ if } \frac{S_i}{N_p^i}(\Delta N_p^i) \left\{\begin{matrix}>\\ <\\ =\end{matrix}\right\} \sum_{j\neq i}\left[\frac{S_j}{N_p^j}(\Delta N_p^j)\right] \tag{P3}$$

Propositions (PI) and (P2) assert that as the public desires to hold a greater share of its currency in the form of specie rather than in notes and as particular banks desire to hold a greater proportion of specie reserves to notes in circulation, there will arise a short-run equilibrating tendency for specie to flow in from outside the region. Proposition (P3) says that as a particular bank's percentage share of the total note circulation increases, there will arise a tendency for specie to flow in if, and only if, that bank's reserve ratio is higher than the weighted average reserve ratio of the banks whose market share declines. The converse propositions also hold.

We may consider whether we should expect there to exist definite secular trends in these ratios and whether changes in these ratios particularly the ratios of specie reserves to notes in circulation - pose difficulties for the free banking system.

[12] The late Murray N. Rothbard (1995, p.491) has complained that the present book, in favourably comparing the Scottish to the English banking system, 'makes not even a token effort to demonstrate that [the Scottish banks] were less inflationary' than the English. I assume that the price-specie flow mechanism kept the Scottish and English price levels on the same track, so that the price-inflation rates in the two countries could not significantly differ. Rothbard may mean something else by 'were less inflationary', however; he may mean 'created less bank-issued money per unit of specie reserves'. (This would have been a virtue in Rothbard's eyes because he favoured mandatory 100 per cent reserves.) I have not tried to compare Scottish to English reserve ratios, but I suspect that the Scottish banks had lower ratios, so that they in fact created *more* liabilities per unit of specie reserves.

We need not concern ourselves in this regard with the various banks' shares of the total circulation, as these must sum to one.

The ratio of specie to notes held by the public will be determined by currency holders' weighing at the margin the benefit (net of inconvenience) of holding coin versus the benefit (net of inconvenience) of holding notes. A fall in the ratio would come about as notes became more widely accepted in transactions (see Section 1.5). The need to make small change for notes prevents the ratio from going to zero. The institution of a token coinage would allow the ratio to go to zero, but there is no obvious reason for any individual money holder to prefer holding redeemable token coins to holding full-bodied coins. Nor would a zero ratio render the system indeterminate.

The desired specie reserve of a bank is determined, in our model, on the assumption that the bank faces a stationary stochastic process generating net disbursements. The bank's desired reserve holdings of specie will not fall over time unless the perceived probability density over specie reserve losses diminishes or the cost of acquiring specie on short notice falls. Banks may reduce the probability of specie losses and hence may economise on specie reserves by joining a clearinghouse that settles temporary interbank flows in a non-specie asset (again see Section 1.5). In that case the clearing medium may be substituted as a reserve asset for some specie holdings. The probability of specie reserve losses for the bank will not vanish, however, as long as there is public use of specie in local circulation or in interregional trade - and hence a non-zero chance of positive net disbursements in cashing notes or deposits for members of the public - or as long as there is a non-monetary demand for gold. It is possible for desired specie reserves to go to zero only if (1) all the world's banks belong to a single clearinghouse, which settles claims with non-gold assets; (2) there is no monetary use of gold by the public; and (3) there is no non-monetary use of gold. Even in the extreme case where (1) and (2) obtain, nominal magnitudes are yet anchored by the redeemability of bank monies for fixed quantities of gold and the relative price of gold as set by its non-monetary demand and supply. Banks would continue to issue claims to gold that could be redeemed in the event of a rise in the nominal price of gold. The probability of positive net disbursements faced by a bank is still positive. Supposing that there is some perceived chance of gold outflows requires us also to suppose that there is some gold in banks' vaults. We consider in Chapter 5 the question of whether the banks may nonetheless keep their reserves of specie inadequately small in some sense.

1.4. Mechanisms Regulating the Currency Stock

We are now in a position to examine generally the working of a note-exchange mechanism and other processes regulating the issue of bank notes.

We saw above that solution of the issuing bank's optimisation problem determined, under reasonable assumptions concerning cost functions, a unique profit-maximising value for the stock of its notes in circulation. For issuer i we denote this value ${N_p}^{i*}$. Because we have treated the 'selling' costs of promoting the demand to hold its notes as simple production costs, which indeed they are from the banking firm's point of view, N_p^{i*} represents the public's desired quantity of bank *i* notes given that bank's optimising expenditures. (We need not bother to distinguish in this section, given the context of convertibility of notes into a medium whose purchasing power is determined on a global basis, between nominal and real quantities of notes.)

Quite general consideration of the possibilities for quality competition among bank-note issuers, then, is sufficient to demonstrate that the desired stock of any particular bank's notes is a determinate magnitude under free banking. It is not necessary to resort to a special assumption that each issuer enjoys a geographic monopoly or that for some other reason each member of the public holds the notes only of a single bank. Nor is it necessary to suppose that within a region of many issuers some individuals refuse to accept the notes of some banks in payments,[13] so long as individuals do refuse to *hold* various brands of notes indefinitely in any but particular desired quantities.

Let us now consider the process by which the actual stock of notes issued by an individual bank (call it Bank A) is adjusted to the public's desired stock. We consider the case in which $N_p^A > N_p^{A*}$. This situation of an excess stock of notes may arise either because Bank A has expanded its issue of notes without warrant or because the demand to hold them has fallen. Perhaps the most readily conceived scenario is one in which Bank A, beginning from an initial optimum, expands its loans and discounts of bills, placing additional notes into the hands of its loan customers and the persons to whom they in turn spend away their loan proceeds, while it does nothing to increase N_p^{A*}. We assume that Bank A is one of many issuing banks within a region, all accepting one another's notes and participating in a regular note exchange. The region is defined as the geographic area of circulation of the participating banks' notes. We begin from an equilibrium situation in which neither specie nor any other banks' notes are in excess supply. We make the *ceteris paribus* assumption that underlying money-holding preferences do not shift.

There are three ways in which an individual agent may in the immediate run respond to an excess holding of Bank A notes: (1) He may redeem the notes for specie at the counter of the issuing bank; (2) he may place the notes in a deposit account, possibly interest-bearing, at his preferred bank; (3) he may hold the notes in buffer-stock fashion with the intention of spending the notes away to other agents within the region. This last action spreads over time the impact of the over-issue. In general the agent will choose a combination of these courses of action in light of his preferences and perceived situation.

Under the first course of action, direct redemption for specie, the reflux of the excess notes is immediate. The issuing bank immediately experiences a loss of specie reserves as they are paid across the counter. In actual experience this path of reflux is likely to be of minor importance. It seems likely to be the typical case that an agent finds it more convenient to deal with his regular bank (assuming that his bank accepts the notes of Bank A), depositing the notes and withdrawing coin from his deposit

[13] Ludwig von Mises (1966, pp.437-38) operates on this assumption in spelling out the equilibrating process. Mises recognises that the assumption may be relaxed to allow for the case where unwanted note brands are accepted in payments but are quickly deposited. This is the case we spell out.

account there should coin be wanted.

The second course of action, deposit of the notes, brings the note-exchange mechanism into play, supposing that the bank receiving the deposit is not the bank of issue in question. The note exchange is simply the periodic settlement among participating banks of the claims represented by their notes. These claims are collected by the banks when they accept deposits and loan repayments in one another's notes. (We examine later in this chapter why issuing banks may be expected to agree to mutual acceptance and to join in a note-exchange system.) The deposit of an unusually large volume of Bank A notes in other banks will result in an adverse clearing balance against Bank A at the note exchange. The balance must be settled by the transfer of an agreed-upon reserve medium - we may assume it to be specie - from Bank A to other banks. Thus the reflux of excess notes placed on deposit at other banks is delayed only until the date of the next note clearing. At that time the expansive Bank A suffers a loss of reserves, while the more conservative banks enjoy a corresponding gain of reserves.

Note that neither of these courses need have yet brought the agent to a final portfolio equilibrium: he may be holding an excess stock of specie or deposits. But we have traced the process far enough to show that Bank A has begun to feel a loss of reserves.

Excess notes redeposited with Bank A do not immediately subject it to a loss of reserves. Thus the immediate check on over-issue is attenuated according to the share of the holders of excess notes who do their deposit banking with Bank A. But redeposited notes do subject Bank A to greater expenses in interest payments, without bringing the added reserves that deposits of specie or another bank's notes do bring.

Notes held or spent away within the region, by agents following the third course of action, do not immediately return to the issuer. Instead they remain in circulation for the time being, where their holders in spending them exert upward pressure on prices. These excess notes will eventually return to the issuing bank through the first and second routes, redemption and deposit, as note-holders reassert their preferences. But we must trace out the intervening sequence.

To some extent the excess stock of notes will bring about increased spending on goods imported from outside the region we have been considering. This spending will result directly as agents spend down excess currency balances and may also result indirectly as they respond to the rise in local prices brought about by increased spending on local goods. Increased spending on imports will in turn give rise to a balance-of-payments deficit for the region. Because local notes are not acceptable outside the region, the balance must be settled in specie. Local banks will temporarily lose specie to the rest of the world during the adjustment process. The loss will not be permanent under the *ceteris paribus* assumption that there occur no underlying shifts in money-holding preferences. The regional efflux of specie will instead be self-reversing.[14]

The expansive Bank A will bear the brunt of the specie lost through the

[14] This statement is made in the spirit of the monetary approach to the balance of payments. See Mises (1912, pp.184-85) for the argument that interregional gold flows must be self-reversing when arising from shocks not accompanied by shifts in relative demands to hold money. See also Salerno (1982).

direct-spending response, as by hypothesis the excess currency balances to be vented consist exclusively of its notes. As these notes do not circulate outside the region, they must be redeemed for specie first, either directly (course 1) or indirectly via deposits in other banks (course 2). The shift in spending in response to higher local prices will impinge upon the reserves of other banks in the region, as holders of all note brands within the region face higher prices. Recall, however, that these banks simultaneously enjoy positive clearings from the reflux of notes through the deposit route.

We thus conclude that the over-expansive bank in a free banking system will sooner or later be disciplined by a loss of its reserves. The process will run its course sooner to the extent that excess notes are immediately vented in the first two ways, later to the extent that they are initially vented in the third way, which must eventually result in their being returned to the issuer in the first two ways. Having started from an initial profit-maximising equilibrium position, Bank A with smaller reserves is now placed in a suboptimal position. Its reduced specie holding subjects it to an unacceptably high risk of exhausting its liquid reserve and consequently defaulting on its note obligations. In terms of the model developed above, the net benefit from holding additional specie now exceeds the marginal net revenue from holding bills. An increase in specie reserves and decrease in bill holdings is called for.

In order to re-establish its initial equilibrium position following a period of over-issue, the expansive bank must reverse course. It must pursue a relatively restrictive policy for a period. During this period of under-issue it will enjoy positive clearings against the other banks and so may replenish its own reserves, while the region as a whole will experience an influx of specie to restore the holdings of its inhabitants and banks to their equilibrium levels.

We have thus far confined ourselves to the case of an over-issuing bank acting alone. The same process, leading back to equilibrium through disciplinary reserve losses, will also operate in the case of over-issue by a group of many or all banks within a region acting in concert. There is, however, a potentially important difference of degree involved. The larger the share of total circulation and deposits supplied by the expanding banks, the greater will be the role of the relatively disruptive process of external drain in bringing the expansion to an end.

That reflux through the note exchange will not check a joint expansion should be clear. Supposing the group of banks to expand by a common factor, no consequent adverse clearings will arise among members of the group. Adverse clearings will not arise among a group of banks in consequence of whatever degree of expansion is common to all. Each member of the group will meet the increased volume of notes returned upon it via deposit in other member banks with an equally increased volume of notes of those other banks deposited with it. There will of course be a loss of reserves from members of the group to any non-expansive banks. Should the expanding group comprise all the banks in a region, the system as a whole must eventually be checked by loss of reserves to the world beyond the region and to the specie holdings of its customers (they will desire additional specie holdings as prices rise in the short run). If the region comprises the world, only the latter check, internal drain to meet the public's desired real specie holdings, operates on bank reserves.

This analysis suggests a potentially important difference between multiple and centralised note issue under a specie standard: the speed with which the self-correcting mechanism operates to reverse an over-issue. Under the free banking system of multiple competing note issuers, the check against over-issues by any single bank is more rapid and direct. Because the single bank's customers comprise only a small fraction of the money-using members of the regional economy, holders of its excess notes, in depositing them with their favourite banks, will place all but a small fraction in other banks. Adverse clearings will consequently approach the size of the over-issue rapidly. The bank in a multi-issuer system that has mistakenly over-issued immediately experiences negative feedback telling it to reverse course to protect its viability. The excess notes may be promptly withdrawn before the bank creates a major monetary disturbance.

Under the central banking system of a single monopoly note issuer, the check against excessive note issue is attenuated. An over-issuing central bank is akin to a cartel of all banks within a region over-issuing in concert. In neither case do interbank clearings within the region arise to provide negative feedback. In both cases the expansion is checked only by the slower process of reserve losses through an adverse balance of interregional trade. This process is slower given the assumption that spending decisions are reformulated relatively slowly in response to excess cash balances, whereas the decision to hold money as an interest-bearing demand deposit rather than as non-interest-bearing currency is made relatively quickly. The latter decision is far more a matter of routine, not requiring the search over numerous alternatives that goes into the purchase of assets less liquid than money.

Concerted expansion by a multiplicity of independent banks is implausible for the same well-known reasons that the attempt to build a stable cartel arrangement among many firms is unlikely to be successful in any industry in the absence of a legal mechanism enforcing cartelisation. Any firm not abiding by the cartel agreement could capture whatever benefits the agreement is supposed to bring the industry to a greater extent than a firm adhering to the agreement. In this case it is not clear what benefit an expansionary policy could bring to the banking industry as a whole. Be that as it may, a non-expanding bank would enjoy positive clearings against its expansive rivals.

Where a central bank is not only the sole issuer of notes but also the sole issuer of demand deposits in a region, its ability to create an excess stock of money in the short run is straightforward. Where the issue of some forms of money is left to satellite commercial banks that hold central bank notes as reserves, the undue expansion of central bank notes increases the holdings by the satellite banks of claims against the central bank. Rather than clear these against the central bank, however, the satellites will hold them as extra reserves and will expand their own issues of monetary liabilities.

Correction of the central bank's over-issue awaits the drain of specie abroad and into the domestic non-bank public's holdings. Because an excess supply of central bank money impinges on aggregate spending behaviour and prices 'with a long and variable lag', to use a well-known modern phrase, the corrective process is likely to take a while before it exercises its discipline on the central bank. The central bank may have sufficient time to generate an artificial boom in business of major proportions through the injection of new money. Such a boom must end in a serious bust when the unsustainable excess supply of bank money begins to be withdrawn.[15]

1.5. The Genesis of the Note Exchange

The discussion of the previous section presupposed the existence of an effectively functioning note-exchange system that embraced a number of independent banks of issue. This section attempts to explain why the independent issuing banks in a free banking system will be led, as if by an invisible hand, to promote the institution of a general note-exchange system. The method of explanation follows that of Carl Menger (1871, Chap.8; 1892), who set out to explain in invisible-hand fashion the emergence of the institution of money. This method of explanation of the origins of social institutions, and of course the phrase 'invisible hand', may be traced to Adam Smith and earlier writers of the Scottish enlightenment. An invisible-hand explanation shows how the decentralised actions of purely self-interested agents may, without their intending it, give rise to a cohesive order.[16]

Consider an initial situation in which there exist in some proximity several banks issuing convertible bank notes, none of whom accepts any other's notes for deposit or loan repayment. Holders of bank i notes must instead go through a costly intermediate step, either of returning the notes to bank i for redemption in specie or of engaging the services of an agent who does so for a fee (a local money changer), should they wish to pay them into bank j, $j \neq i$. The saleability of bank i notes is limited in comparison with specie: the notes cannot buy deposits in other banks, whereas specie can. This limitation has both a minor direct and a major indirect effect on N_p^{i*}, as N_p^{i*} is presumably a function of the saleability of bank i notes. The indirect effect is that sellers who regularly deposit their currency receipts in bank j will likely refuse to exchange their merchandise for bank i notes at par. The saleability of bank i notes is thus further impeded, and N_p^{i*} further reduced.

Were other banks to accept bank i notes, those notes would enjoy increased saleability and consequently a greater demand to hold them in preference to specie. In this situation a pair of issuers - call them Banks F and G would find that each improves his position by their agreeing to accept one another's notes at par. Mutual acceptance increases both N_p^{F*} and N_p^{G*}. At the same time, Banks F and G would both find it profitable to enter into a regular note-exchange arrangement. Neither bank would wish to accumulate the other's notes *ad infinitum* nor to reissue them in place of its own. Were the banks to demand redemption from one another without arranging a note exchange - for example, were Bank F to present its Bank G notes for redemption without allowing Bank G to offset its liability by relinquishing its accumulated Bank F

[15] An in-depth theoretical and historical analysis of business cycles is beyond the scope of discussion here. Several of the various monetary theories of the trade cycle are consistent with the argument advanced here.

[16] Adam Smith (1976, Vol.1, p.477). For a brief philosophical discussion of the beauty of invisible-hand explanations, together with a list of examples of same, see Nozick (1974, pp.18-22). See also the essays by Hayek (1967) cited there.

notes - both banks would incur greater expected liquidity costs from the increased variance of net specie outflow, not to mention greater transportation costs of bringing the specie back home, as compared with arranging to exchange notes. Bank F's claims on Bank G's specie are then offset by Bank G's reciprocal claims. Each bank will want to set the regularity or frequency of the exchange so as to equate the marginal reduction in expected liquidity costs from more frequent exchange to the marginal increase in operating costs from more frequent exchange.[17]

The availability of further gains in bank note saleability will make it mutually profitable for other banks to join the note-exchange arrangement. They may join singly or may enter into other note-exchange arrangements that later merge with the first pair. Eventually a single note exchange will include all profit-seeking banks within a region.[18] No bank aims at the establishment of a systemwide note exchange - Bank C would benefit as much and possibly more were Banks D, E, and F not to exchange among themselves - yet their profit-seeking actions have that unintentional result.

The arrangements among the banks need not be symmetric. In bilateral dealing of this sort there is an indeterminacy in distributing the gains from trade.[19] All banks voluntarily joining a note exchange presumably gain from its existence, however. The mutual acceptance arrangement improves the negotiability of every participant's notes. There is room for every bank to enjoy an increase in the demand to hold its notes, as the public substitutes holdings of notes for holdings of specie at the margin.[20]

In a bilateral note exchange the clearing balance is computed simply between the two participants. Where third and further banks enter the arrangement, it is likely to be cheaper to conduct the exchange multilaterally than as a series of bilateral exchanges. A single clearing balance is computed for each bank against all other banks, and settlement is paid into and out of a central pool. It was assumed in Section 1.4 that adverse clearing balances at the note exchange were settled in specie. Certainly a bank with a positive balance could, given the legal commitments of other issuers to convertibility of their notes into specie, insist upon specie. But the costs of settlement can likely be economised by agreeing to substitute for specie shipments the transfer of some

17 As this trade-off may not be the same for both banks, no particular frequency may satisfy the equimarginal condition for both banks. There may therefore be room for implicit or explicit side-payments to reach a joint optimum.

18 The region will extend to the perimeter beyond which banks find that the augmentation of note demand from participation is so slight as to afford too little revenue to offset the operating costs of participation. Those operating costs include losses from accepting forged notes, which likely will increase at the geographic margin as the region expands.

19 To cite historical examples: Whereas in the Scottish note-exchange system there seems to have been nearly complete symmetry, the Suffolk Bank note-exchange system in Boston was asymmetrical and may be viewed as involving a transfer to the Suffolk Bank of some portion of the other banks' gains from the arrangement. On the Suffolk system, see Trivoli (1979). On the Scottish system, see Munn (1975) and Chapter 2 below.

20 We therefore strongly question the suggestion, made for example by Gunderson (1976, p.195), that the Suffolk system imposed a net loss on the rural banks and that the city banks constituted a cartel formed for the purpose of extracting a transfer from the rural banks.

other agreed-upon medium. All banks might, for example, hold specie reserves on deposit with a single institution that clears note-exchange balances by transferring the deposits on its books. Or they might transfer holdings of an especially liquid interest-earning asset issued outside the banking system.[21] In neither case would the disciplinary power of the note exchange against over-issues by an individual bank be attenuated. A bank could still not permit an outflow of reserves to persist. Unanticipated reserve losses would still place the bank in a suboptimal position and signal it to contract its issues.

[21] Again to refer to historical examples, the Suffolk system operated in the former way, the Scottish system in the latter way.

CHAPTER 2

Free Banking in Scotland Before 1844

2.1. Introduction

Scotland, a relatively industrialised nation with highly developed monetary, credit and banking institutions, enjoyed remarkable monetary stability during the 18th and early 19th centuries. During this time Scotland had no monetary policy, no central bank and very few legal restrictions of the banking industry. Entry was open and the right of note issue universal.[1] If the conjunction of these facts seems curious by today's lights, it is because central banking came to be taken for granted in the 20th century, while the theory of competitive banking and note issue on a specie standard fell into disrepair.

The Scottish success with near-*laissez-faire* in banking caused consternation to many of the monetary theorists of the 19th century as well. Sir Walter Scott, ably pamphleteering in defence of Scottish banking, noted the incongruity of Scotland's 'practical System successful for upwards of a century' with 'the opinion of a professor of Economics, that in such circumstances she ought not by true principles to have prospered at all' (1826, pp.38-39). The Scottish banking system enjoyed widespread popular support from practical men. It had its theoretically minded supporters as well. The Scottish model figured prominently not only in the well-known British banking régime debates of 1820-45 (see Chapters 4 and 5 below), but also in similar debates in America (White and Selgin, 1990) and on the Continent of Europe (V. Smith, 1990).

Scotland's free banking experience subsequently faded from the common knowledge of monetary economists. American economists, at least, have been prone to the misconception that 'free banking' was an experiment limited to several of the United States in the decades preceding the Civil War. It has been commonly believed that English monetary and banking institutions, despite their imperfections, were the most enlightened that the 19th-century world had to offer. An account of the Scottish experience, and especially the contrast of Scottish with English institutions, is therefore informative. The success of Scottish free banking, as the result of self-regulating competitive mechanisms, suggests that England would have benefited from emulation of its northern neighbour. At the root of England's monetary difficulties was not too little central banking, as is sometimes suggested, but too much.

[1] The First Edition of this book overstated the case when it said that Scottish banking had 'virtually no' political regulation and 'complete' freedom of entry. An Act of 1765, mentioned below, banned banknotes that gave the issuer an option to delay redemption, and also banned notes smaller than one pound. Contractual limitation of bank-owners' liability was not freely allowed. All of these were political regulations and, in principle, barriers to entry. They did not in practice, however, significantly impede entry or prevent the industry from being highly competitive. See Chapter 3 below.

This chapter proceeds in the next section to trace the evolution of the banking industry in Scotland during the free banking period, emphasising competitive entry and innovation. The third section then contrasts the arrangement and legal framework of Scottish banking in its heyday with those of English banking during the same period. Some limited evidence on the macro-economic records of England and Scotland is mentioned in the final section. The subsequent chapter, Chapter 3, takes up criticisms of the thesis that Scottish experience really merits the 'free banking' label.

The period of Scottish free banking coincided with a period of impressive industrial development in the Scottish economy. The growth of Scotland's economy in the century prior to 1844 was more rapid even than that of England's. Rondo Cameron (1967, p.94), while acknowledging the lack of separate national income statistics for Scotland in this era, offers it as a reasonable estimate that Scotland's *per capita* income was no more than half England's in 1750 but nearly equal by 1845. Out of a backward agricultural and household economy with an active tobacco trade there developed an advanced (for its day) industrial economy. The leading industries became cotton cloth production, iron production, engineering and shipbuilding. Given Scotland's poor natural resource endowment and lack of other advantages, its ability to reach high income levels was remarkable. There is good reason to believe, as several historians have followed Adam Smith (1976 [1776], pp.314-15) in suggesting, that Scotland's banking system played a major role in promoting the economy's growth.

2.2. Evolution of Scottish Banking, 1695-1845

The Bank of Scotland was created by Act of the Scottish Parliament in 1695, one year after the creation of the Bank of England.[2] The Act provided a legal monopoly on banking and the right of note issue for 21 years. Apparently thinking one bank was the most the country could accommodate, the bank made no effort to renew its monopoly upon its lapse in 1716.

Its founders intended the Bank of Scotland to be purely a commercial bank, to provide secured loans to merchants and noblemen and to discount commercial bills. Bank notes were to be placed in circulation by way of these advances. The public's holding of its bank notes enabled the bank, just as deposit balances enable a modern-day bank, to extend its credit. By issuing notes, that is, the bank could lend far more than its paid-up capital. The bank was initially able to earn a handsome profit from the interest and commissions it charged.

Despite its official-sounding title, the Bank of Scotland was - uniquely among European banks at that time - not a state institution. The government neither did business with the bank nor regulated it. In fact, the act creating the bank prohibited its lending to the government, under heavy penalty. This unusual separation of bank and state was largely the result of the peculiar historical circumstances under which the bank was

[2] This section draws its history primarily from the works of Checkland (1975), Munn (1981), Graham (1911), Kerr (1884), Boase (1867), Munro (1928), and Wenley (1882). Other earlier accounts are Fleming (1877) and Somers (1873).

chartered. The crown of Scotland had been joined to that of England since 1603, and union of the parliaments was soon to come in 1707. Shortly after the bank's founding there would no longer be a Scottish government with which to become entangled. In London the Bank of Scotland was commonly suspected of disloyal Jacobite leanings throughout the early 18th century. The British Parliament therefore turned a deaf ear to the bank's petitions against the chartering of its first rival, the pointedly named *Royal* Bank of Scotland, in 1727.

An acrimonious rivalry between the two banks arose the day the new bank opened its doors. Both banks were housed in Edinburgh. As the Royal Bank's historian Munro puts it, 'at close quarters opened a brisk duel in which the combatants used each other's notes as missiles' (1928, p.55). The Royal Bank dispatched agents to trade its new notes for Bank of Scotland notes and to present the latter in large quantities at the Old Bank's office for redemption in coin, hoping to embarrass its rival. The Old Bank responded in kind, but lost the 'duel'. By March 1728 it was forced to suspend payments, call in its loans, make a 10 per cent call upon its shareholders, and even close its doors for several weeks.

This was already the third suspension in the Bank of Scotland's history. A run on the bank in 1704, sparked by rumours of imminent upward revaluation of coin, had forced it to suspend payments for four months.[3] The bank was not insolvent, but its assets were illiquid. The bank set an important precedent by announcing at the time of suspension that all notes would be granted 5 per cent annual interest for the period of the delay, payable when convertibility was resumed. The same policy was adopted for the eight-months suspension following a run during the civil unrest of 1715, and again for the eight-months suspension of 1728. We may think of these interest payments as part of the penalty cost of a shortfall of specie reserves, necessary to maintain the demand to hold the suspended notes.

Part of the Royal Bank's advantage in this note duel came from the sums of cash lodged with it by government agencies. The Old Bank was of course bound to be confronted with an unusually great reflux of its notes upon the opening of a new note-issuing institution, regardless of that institution's tactics. The demand to hold Bank of Scotland notes sharply declined as the Royal Bank began to satisfy a large portion of the total demand for notes. The presentation of one bank's notes for payment by agents of the other bank provided the first step toward a regular and more amicable system of note exchanges that still later evolved into a central clearing-house for notes and cheques.

The Royal Bank took advantage of the opportunity to put its own notes into wider circulation during the suspension, for a while offering them or specie in exchange for notes of the Old Bank. The Bank of Scotland's notes continued to trade at face value during the suspension. During the suspension a merger of the two banks was proposed by the Royal Bank's directors. The two sides were unable to reach agreement on

[3] This event incidentally inspired Scotsman John Law to the belief that a bank run could correspondingly be forestalled at any time by an announcement of an imminent devaluation of coin. That belief was put to the test in Law's ill-fated Mississippi Scheme.

how to value the Bank of Scotland's stock, and so nothing came of the proposal, testifying to the difficulty of arranging cartelisation of an industry even with only two firms. At the same time, a private individual brought suit against the Bank of Scotland for its failure to honour the promise to pay given on the face of its notes. After much legal wrangling, the note-holder's right of 'summary diligence' or immediate payment on Bank of Scotland notes - a right stipulated in the bank's charter - was upheld.

To lower expected liquidity costs, by protecting themselves against resumption of duelling tactics, the Bank of Scotland's directors in 1730 began inserting an 'option clause' into the obligation printed on its notes. The bank's pound note now promised to the bearer 'one pound sterling on demand, or in the option of the Directors one pound and sixpence sterling at the end of six months after the day of demand'. The implicit annual interest rate in case of delay was 5 per cent.[4] Having finally learned from experience the proper specie reserve to maintain, the bank did not have to exercise the option until the 1760s. Its notes continued *de facto* to be redeemable for specie on demand, much as thrift institutions in more recent periods have seldom invoked the notice-of-withdrawal clauses in their deposit contracts.

Competitive innovation by the two banks soon began to benefit the public. In 1728 the Royal Bank introduced the cash credit account, a form of overdraft account. An individual applying for a cash credit account had to provide evidence of sound character and two or more trustworthy co-signatories, who were jointly liable in case of the individual's insolvency. Once the account was opened, he could draw out the whole amount or any fraction for personal or business transactions. Interest was charged only on the outstanding daily balance. The cash credit system evidently lowered the cost of maintaining a note circulation by introducing more of the public to the use of bank notes. It proved an advantageous way for the bank to increase its note circulation while expanding its earning assets. The account allowed an individual to borrow against his human capital at lower transaction costs and so enabled him to undertake productive projects that otherwise would have been unprofitable. David Hume praised the system as 'one of the most ingenious ideas that has been executed in commerce' (1955 [1752], p.70) and noted how it eased the cash constraints within which merchants could transact. The Bank of Scotland adopted the cash account system in 1729. During the note duel of 1728 it had furthermore begun actively to solicit deposit accounts by offering interest upon them. After 1731 it offered interest-paying accounts on a regular basis. Checkland comments that 'Scottish banking was thus attracting deposits by the payment of interest long before this happened in England' (1975, p.68). This innovation was a natural outgrowth of the competition for funds between the two banks.

Competition had a dramatic effect on the profits of the Old Bank. It is reported

[4] By contractually reserving the option to suspend its notes for a specified time, the bank could avoid a liquidation so rapid that assets must be sold at distressed prices (the problem of 'fire sale' losses). Avoiding such losses was in the interest not only of the bank's shareholders but also of its note-holders, who stood to lose if the bank became insolvent, so note-holders have good reason to welcome option-clause notes. The high interest payment promised in the event of suspension assured potential note-holders that the bank would not choose to suspend opportunistically. For more on option clauses, see Dowd (1989).

(Wenley, 1882, pp.124, 127) that from 1696 to 1728 its proprietors had received dividends ranging from 0 to 30 per cent (no dividends were declared during two years) and averaging 15.5 per cent. From 1729 to 1743 the dividends ranged from 3.75 to 6.25 per cent and averaged just 5 per cent.

A number of non-issuing private banking houses appeared in Edinburgh in the 1730s and 1740s. These were small partnerships dealing primarily in bills of exchange and commercial loans, many holding cash credit accounts at the chartered banks. The typical private banker was a merchant whose dealings in bills of exchange had grown gradually from a sideline into his primary business. The private bankers played a limited role in the industry, but were notable for demonstrating the freedom of entry that prevailed.

Rivalry between the two chartered banks[5] continued into the 1740s. To counteract the Royal Bank's popularity with Glasgow merchants, the Bank of Scotland in 1749 granted a large cash advance to a partnership in Glasgow for the purpose of forming the Glasgow Ship Bank. The partners promised to promote circulation of Bank of Scotland notes in Glasgow, just as private bankers promoted their circulation in Edinburgh. In competitive fashion, the Royal Bank sponsored the formation of the Glasgow Arms Bank in 1750. To the surprise of the two Edinburgh banks, the Ship Bank and the Arms Bank both soon began issuing their own notes. At this the chartered banks ceased feuding with one another. The Bank of Scotland's historian tells how their directors met together in 1752 to consider means of dealing with the problem of 'private persons erecting themselves into Banking Companies without any public authority, particularly the two Banking Companies lately set up at Glasgow' (Malcolm [n.d.], pp.59-64). They decided to withdraw their credits from the Glasgow banks and to stop credit to any Edinburgh or Glasgow customer circulating Glasgow notes. By 1756 the Glasgow banks were ready to come to terms with the Edinburgh banks, and in fact proposed a geographical division of the Scottish market between the pairs of banks. No agreement on terms could be reached. Once again the inherent instability of cartels had preserved competition in Scottish banking. The chartered banks then allegedly turned jointly to the tactic of note duelling, but their Glasgow rivals survived the assault by a series of evasive manoeuvres.

An agent of the public banks eventually brought suit against the Arms Bank for non-payment of notes. After three years of proceedings an out-of-court settlement was reached. One historian (Graham, 1911, pp.57-58) has correctly commented that the Glasgow banks would never have had to resort to ruses had they kept sufficient specie reserves against their notes. The sufficient quantity of reserves, however, was something that bankers could learn only through trial and error.

The Banking Company of Aberdeen, a joint-stock venture established in 1747, was less fortunate in maintaining its foothold in the industry. The bank issued a great quantity of notes and was evidently unprepared to cope with the reflux of notes upon it.

5 Strictly speaking, the Bank of Scotland was not created by royal charter, but by act of the Scottish Parliament. It is nonetheless expedient to refer to the Bank of Scotland and the Royal Bank of Scotland (and the British Linen Company, after 1746) as 'the chartered banks'.

Drained of specie by the notes returned from Edinburgh, it retired in 1753. A petition for summary diligence by a note-holder was refused on the grounds that this remedy was enforceable on bills but not on promissory notes such as bank notes. The Act chartering the Bank of Scotland had provided for summary diligence on its notes, but this provision did not extend to other banks. The question of summary diligence against bank notes was finally settled in 1765, when the option clause was outlawed and summary diligence made enforceable. Until then the notes of the banks circulated despite the notes' unclear legal standing.

The most important entrant during these years was the British Linen Company, a corporation chartered in 1746 to promote the linen trade as wholesalers. The company began providing banking services to its clients much in the manner of the Edinburgh private bankers. The company's historian reports that in 1747 its directors started issuing interest-bearing promissory notes with which to pay its 'agents, weavers, manufacturers, and other customers' (Malcolm, 1950, p.26). In 1750 it began issuing non-interest-bearing bank notes, payable on demand. In the 1760s the company began to withdraw from the linen trade and to devote itself entirely to banking. Expanding vigorously, it enjoyed Scotland's - and the world's - first success with branch banking. The branches began on a small scale as agents appointed in various cities to discount bills and circulate the bank's notes. By 1793 the British Linen Company had 12 branches in operation, with six added shortly thereafter. As a result of its extensive branching the bank had the industry's greatest bank note circulation in 1845. The evolution of the British Linen Company into a banking firm (eventually renamed the British Linen Bank) illustrates once more the freedom of entry into banking that prevailed in Scotland.

A number of small private bankers entered the industry in the late 1750s, followed by several provincial banking companies in the early 1760s. Many of these new banks, apparently in response to the denominational disequilibrium created by a loss of coin through an external drain occurring at the time, issued notes for fractions of £1. The banks typically included the option clause in their larger notes but did not include it in notes smaller than 10 shillings. The Royal Bank and the British Linen Company adopted the option clause for the first time in 1762, though not for their 20 or 10 shilling notes. The directors of the Dundee Bank went the option clause one better by promising to redeem their larger notes, on demand or with interest after six months, in specie *or* in the notes of either the Royal Bank or the Bank of Scotland, at the directors' option. This 'double optional clause' appears to have been an aberration rather than part of any wider movement toward pyramiding of reserves. The issue of pyramiding is further discussed later in this chapter.

As numerous small traders began issuing optional notes for sums of 5 shillings and 1 shilling and other private traders minted copper coins for still smaller change, there arose some public agitation against the option clause and the small notes. One later commentator, viewing the circulation of the small notes as a natural response to the scarcity of specie, characterised their opponents as 'country gentlemen, led on most probably by some who visited Edinburgh occasionally, and there picked up theories on religion, politics, and commerce, of a very unpractical character', whose speeches and resolutions contained 'the same exaggerated assertions, fallacious inferences, and ridiculous fears that have pervaded the more modern discussions on the circulating medium' (Boase, 1867, p.2). Some industry historians (for example, Kerr, 1884, pp.67-74), apparently taking the provincial resolutions more at face value, have described a 'small note mania' taking hold. Public dissatisfaction may also have stemmed from the difficulty, occasioned by the ongoing external drain, in getting the banks to provide short-dated bills on London or specie for their notes (Logan, 1839, pp.43-44). Recall that the legal remedy of summary diligence had been denied to note-holders. The inconvenience led note-holders in 1763 to memorialise the British Parliament on the subject. In 1764 the government in London intervened, after receiving a memorial from the Glasgow banks and after hearing from a joint committee of the Bank of Scotland and the Royal Bank. Effective from 1765, notes bearing the option clause and notes of denomination smaller than one pound were prohibited in Scotland. All notes were to be either unconditionally redeemable in gold on demand (ordinary bank notes), or explicitly post-dated (promissory notes). The right of note issue remained universal, despite the chartered banks' rent-seeking attempt to have the right legally restricted to themselves (Checkland, 1975, pp.120-21). The Act of 1765 left Scotland with free banking in most respects, though it apparently raised an entry barrier against very small-scale banks of issue. Shortly after passage, five of the small-partnership note issuers in the city of Perth amalgamated into a single bank.

Entry continued apace during the late 1760s. The total number of Scottish banks (both issuing and non-issuing) having risen from five in 1740 to 14 in 1750, to 23 in 1760, and to 27 in 1765, reached 32 in 1769. The year 1769 saw the establishment of Douglas, Heron & Co. in the town of Ayr. The Ayr Bank, as it was known, showed little sign of having learned the lesson of the Bank of Scotland's suspensions and the Banking Company at Aberdeen's retirement. In three years the bank's reckless management extended a great quantity of bad credit via its note issues and achieved a spectacular insolvency. The discipline of the market soon asserted itself. The bank came to grief in 1772 with losses estimated at some two-thirds of a million pounds (see Hamilton, 1956). The failure of the Ayr Bank brought down 13 small private bankers in Edinburgh,[6] thinning the number of private banks from 19 to six. A provincial banking company in Perth also ended sometime in 1772, leaving the industry with 16 institutions in 1773 (Checkland, 1975, pp.132-35).

In order to tell the story of the Ayr Bank crash, it is necessary first to discuss the formation of the Scottish note-exchange system. Section 1.5 above provides a theoretical account of why such a system would evolve.[7] Charles W. Munn (1975; 1981a, pp.21-29) has recounted the particular facts surrounding the origin of the Scottish note exchange. The Bank of Scotland and the Royal Bank of Scotland agreed to accept and

[6] I am indebted to Larry Sechrest for pointing out that my previous figure of eight was in conflict with Checkland (1975, p.132).

[7] See also Selgin and White (1987).

regularly exchange one another's notes as part of the accommodation they reached in 1751. Provincial banks, as they entered the industry in the 1750s and 1760s, did not initially accept one another's notes as a general practice. In 1768 the Aberdeen and Perth United Banking Companies initiated a policy of mutual acceptance and exchange. This arrangement was in the profit-seeking interest of both firms because, as Munn (1975, p.48) points out, it promoted the demand to hold the notes of both banks by merchants doing business between the two cities. The Perth United made a similar arrangement with the Dundee Banking Company.

The Ayr Bank arranged from the outset for mutual acceptance and regular exchange of notes with a number of the provincial banks. The exchange was conducted weekly by the Edinburgh agents of the participating banks. The British Linen Company soon entered the exchange. In 1771 the Bank of Scotland and the Royal Bank agreed to join in accepting and exchanging provincial notes, recognising that they could thereby promote the demand to hold their own notes. Some provincial bankers were apparently reluctant at first to enter the exchange with the chartered banks, but soon recognised that exchanging regularly was more convenient than confronting irregular demands for redemption of notes collected by the Edinburgh banks. Following a brief hiatus in the wake of the Ayr Bank crash, the note-exchange system revived to encompass all the Scottish issuing banks from 1774 on (Checkland, 1975, pp.140-41). Membership in the exchange became recognised as a valuable brand-name capital asset. One historian (Graham, 1911, p.59) records:

> 'So completely did opinion change, that instead of the senior banks needing to coerce their juniors towards the practice, it became an object of emulation amongst the latter to share in the rank and respectability enjoyed by members of the note exchange.'

In accordance with our theory, each member of the industry benefited from the mutual par acceptance as its notes gained in circulability. This quality improvement meant that the Scottish public's margin of preference between specie and notes shifted in favour of notes. Bank notes thereby displaced specie in circulation to a large extent. The Scottish note-exchange system long antedated the well-known Suffolk system of New England (see Trivoli, 1979), whose origin and impact can be explained in a similar way.

The episode of the Ayr Bank failure did not impugn but, in fact, confirmed the effectiveness of the Scottish note-exchange system in preventing over-issue by a single bank. Settlement between two clearing-house members, for the difference in the sums of notes exchanged, was made primarily in bills or drafts negotiable at correspondent London banks, or in specie.[8] As the clearing-house rapidly returned the Ayr Bank's notes to it, the bank piled up ever greater liabilities in the form of bills on London. The bank was in effect borrowing from the other banks to re-lend to the public. This was not a profitable strategy, as Adam Smith noted in 1776, especially when so many of its

[8] The First Edition of this chapter said that settlement was also made in Exchequer bills, but I have been unable to discover the basis for that statement.

loans went sour. The bank soon found it difficult to roll over, let alone retire, its obligations. Public confidence in the bank broke when its London correspondent failed and its bills were refused by other brokers. At liquidation the Ayr Bank's liabilities consisted of £300,000 in deposits, £220,000 in notes, and £600,000 in outstanding drafts on London.

The crash of the Ayr Bank, spectacular as it was for its day, did not imperil the Scottish banking system as a whole. Other banks of issue were not dependent on the Ayr Bank's survival for their own. They did not hold large quantities of its notes, thanks to the operation of the clearing-house. Sir William Forbes, a leading private banker, recorded that a 'smart demand for money' confronted the Edinburgh banks for less than a day. Even this brief run 'was a new and unexpected circumstance, for nothing of the kind had occurred' following the failure of one private bank in 1764 or another in 1769 (Forbes, 1860, p.43). Only those private banking houses involved with the Ayr Bank's circulation of bills were brought down. The three chartered banks, four strong private banks in Edinburgh, three banks in Glasgow, and three provincial banks escaped trouble, having prudently avoided holding the liabilities of the Ayr Bank. The Merchant Bank of Glasgow found it necessary to suspend payments for three months, and a private bank in Edinburgh to close for a month, but both resumed business. The repercussions of the Ayr failure on the industry were short-lived (Checkland, 1975, p.133). Private banking revived in the next few years, with new entrants in Edinburgh and in provincial towns. The Bank of Scotland took the opportunity finally to establish successful branches of its own in five cities.

Any potential erosion of general confidence in bank notes from the Ayr failure was halted by joint action of the Bank of Scotland and the Royal Bank. On the day before the Ayr Bank went into liquidation the two banks advertised that they would accept the notes of the defunct bank. The benefits of this action to the two banks are clear: it would bolster public confidence, attract depositors, and help put their own notes into wider circulation. The potential cost was surprisingly low because of one of the most remarkable features of Scottish free banking: the unlimited liability of a bank's shareholders. Despite their magnitude, the Ayr Bank's losses were borne entirely by its 241 shareholders. The claims of its creditors, including note-holders, were paid in full.

New provincial banks continued to spring up all about Scotland in the decades following 1772. Many had extensive networks of bill-discounting agents to promote note circulation.

According to the typology of S.G. Checkland's authoritative chronicle of the industry (1975, pp.320-21), the Scottish banking trade at the start of 1810 was divided among three chartered ('public') banks, centred in Edinburgh with branches in a few large towns; nine private (non-issuing) bankers, eight of them in Edinburgh and one in Glasgow; and 22 provincial banking companies, three of them in Glasgow, 12 in secondary burghs, and seven in lesser burghs. Checkland reserves the term joint-stock bank for enterprises to be founded later, and Charles W. Munn (1981) follows this usage in his history of the provincial banking companies. Previous industry historians had indicated that at least two provincial banks at this time (Wenley, 1882, p.135), or the majority of them (Fleming, 1877, p.98), were founded on joint-stock principles. The law made no distinction among provincial, joint-stock and private banks, as the rule of unlimited liability made all non-chartered banks effectively partnerships. The important distinction came along financial lines: the private banks and provincial banking companies were based on their partners' contributions, with shares generally not freely transferable, whereas joint-stock banks raised capital by issuing a limited number of transferable shares. There were important functional differences among the chartered banks, the private banks of Edinburgh and the provincial banks. The chartered banks served as bankers to many of the private banks, whereas the latter specialised in serving certain sorts of borrowers not served by the former. The private bankers also served as Edinburgh agents of the provincial banking companies. The private bankers in Edinburgh did not issue notes, whereas provincial banks typically were banks of issue. The arrangements between the Edinburgh private and chartered banks were so close that private bankers often exercised considerable control as directors of the Royal Bank and the Bank of Scotland. Their vertical division of labour apparently arose from the comparative advantage held by the smaller private bankers in dealing with commercial borrowers, whereas economies of scale operated in the business of issuing. The three 'public' banks were distinctly larger and more prominent in the industry than any of the other banks at the start of 1810. That was about to change.

Schumpeter (1942, p.84) has remarked that 'the problem usually being visualised is how capitalism administers existing structures, whereas the relevant problem is how it creates and destroys them'. The 'perennial gale of creative destruction' soon transformed the structure of Scottish banking. The entry of the Commercial Bank of Scotland in 1810, founded on the joint stock of over 650 shareholders, spelled the end of the small private bankers and ushered in an era of extensive branch banking (on this transformation, see Munn, 1982). A contemporary observer quoted in the Commercial Bank's history claimed that the perceived aloofness of the chartered banks from the working public gave rise to 'a demand for a bank founded on more liberal principles; ... hence the origin of the Commercial, professing to be the bank of the citizens' (Anderson, 1910, pp.3-5). The Commercial Bank announced publicly that no private bankers would sit on its board of directors.

By 1819 the Commercial Bank had opened 14 branches in addition to its head office, as compared with the British Linen Company's 17, the Bank of Scotland's 14, and the Royal Bank's single branch office in Glasgow. The structure of the industry as of 1826 is shown in Table 2.1. In 1830 the score stood at 30 branches for the Commercial Bank, 28 for British Linen, 18 for the National Bank of Scotland (established in 1825 with over 1,200 shareholders), 17 for the Bank of Scotland, and still only one for the Royal Bank. Smaller banks also branched out. The following decade saw the seven leading banks alone add another 110 branches, bringing the national total to more than 300 branch banking offices in 1840. On the eve of 1845 there were 19 banks of issue in Scotland with 363 branches, providing one bank office for every 6,600 persons in Scotland, as compared with one for 9,405 in England, and one for 16,000 in the United States (Macfarlan, 1845, p.12).

Table 2.1. *Scottish Banks, 1826*

	Name of bank, date established	Head Office	Number of partners	Number of branch offices
Chartered banks				
1.	Bank of Scotland, 1695	Edinburgh	–	16
2.	Royal Bank of Scotland, 1727	Edinburgh	–	1
3.	British Linen Co., 1746	Edinburgh	–	27
Provincial banks, joint-stock banks, and private banks of issue				
4.	Sir William Forbes & Co., c.1730	Edinburgh	7	0
5.	Ramsay, Bonars, & Co., c.1738	Edinburgh	8	0
6.	Glasgow Ship Bank, 1749	Glasgow	3	0
7.	Thistle Bank, 1761	Glasgow	6	0
8.	Dundee Banking Co., 1763	Dundee	61	0
9.	Perth Banking Co., 1766	Perth	147	5
10.	Banking Co. of Aberdeen, 1767	Aberdeen	80	6
11.	Hunters & Co., 1773	Ayr	8	3
12.	Commercial Bank of Aberdeen, 1778	Aberdeen	15	0
13.	Paisley Banking Co., 1783	Paisley	6	4
14.	Greenock Banking Co., 1785	Greenock	14	3
15.	Paisley Union Bank, 1788	Paisley	4	3
16.	Leith Banking Co., 1792	Leith	15	4
17.	Dundee New Bank	Dundee	6	1
18.	Renfrewshire Banking Co., 1802	Greenock	6	5
19.	Dundee Union Bank, 1809	Dundee	85	4
20	Glasgow Bank, 1809	Glasgow	19	1
21.	Commercial Banking Co. of Scotland, 1810	Edinburgh	521	31
22.	Perth Union Bank, 1810	Perth	69	0
23.	Montrose Bank, 1814	Montrose	97	2
24.	Exchange & Deposit Bank, 1818	Aberdeen	1	4
25.	Shetland Banking Co., 1821	Lerwick	4	0
26.	Aberdeen Town & County Bank, 1825	Aberdeen	446	4
27.	Arbroath Banking Co., 1825	Arbroath	112	2
28.	Dundee Commercial Bank	Dundee	202	0
29.	National Bank of Scotland, 1825	Edinburgh	1,238	8
Non-issuing private banks				
30.	Thomas Kinnear & Co., 1731	Edinburgh	–	–
31.	James & Robert Watson, c.1763	Glasgow	–	–
32.	Donald Smith & Co., 1773	Edinburgh	–	–
33.	Alexander Allan & Co., c.1776	Edinburgh	–	–
34.	Robert Allan & Son, 1776	Edinburgh	–	–
35.	Inglis, Borthwick & Co., 1805	Edinburgh	–	–

Sources: Graham (1911, p.192), Kerr (1884, Appendix D), Checkland (1975b, pp.320-21).

The Scottish banking system had thus evolved by 1844 the following features to which free banking advocates in England and elsewhere pointed. There were many competing banks; most of them were well capitalised by a large number of shareholders; no single bank was disproportionately large or dominant; all but a few of the banks were extensively branched. Each bank issued notes for £1 and above; most banks' notes passed easily throughout the greater part of the country. All the banks of issue participated in an effective note-exchange system. All offered a narrow spread between their deposit and discount (loan) rates of interest.

In contrast to their 'big three' dominance in 1810, the public banks now ranked first, fourth, and seventh in size of circulation (see Table 2.2). Five of the joint-stock banks had paid-up capitals as large as the Bank of Scotland's £1 million, and eight had capitals as large or larger than the British Linen Company's £500,000. The Commercial Bank had more branches than any of the three public banks, and the National Bank more branches than two of the three. The National Bank, the North of Scotland Banking Company and the Edinburgh and Glasgow Bank each had more shareholders than any of the public banks. Randomly arranging the rows of Table 2.2 and removing the dates of establishment, it would certainly not be obvious which three banks were the senior members of the industry.

Competition among the public banks and large joint-stock banks was clearly vigorous in note issue, deposit-taking, lending and discounting, inland exchange, and other aspects of banking. Profit margins were squeezed.[9] Competitive bidding for loans and deposits kept the spread between loan and deposit interest rates down to 1 per cent (Checkland, 1975, pp.384-88). As Munn notes, 'the competitive nature of the business' meant that 'all earning assets had to be managed with fine attention to detail. There was no room for error or even slackness if dividends were to be maintained' (1982, p.118). Attempts were made in the 1830s and 1840s to limit interest rates and activity charges through cartel agreements, but such agreements proved unsustainable in the face of strong competitive pressures (Checkland, 1975, pp.449-50; Munn, 1982, p.122).

The rise of branch banking on a nation-wide scale in the half-century prior to 1826 was preceded by the network of agents employed by the major banks for the discounting of bills in distant towns. Fully fledged branch offices became profitable only as deposit accounts became a major part of the banking business, while the growth of deposits awaited the growth of real *per capita* income. Broadly based banks tended increasingly to displace one-office banks because secularly falling costs of communication between areas allowed branched networks profitably to take advantage of economies of scale in fund gathering and asset management, particularly opportunities for risk spreading among various localities. The failure of a local industry whose bills the bank held or an annual variation in the local demand for coin would not imperil the local branch of a national bank so much as it would a purely local bank.

[9] Cowen and Kroszner (1989, p.226), by contrast, hypothesize that the charters of the public banks had the effect of 'reducing competitive pressures (hence relaxing the zero-profit condition)' throughout the free banking period. For further discussion, see Chapter 3 below and White (1990).

Table 2.2 *Scottish Banks of Issue, 1845*

Name of bank, date established	Head office	No. of Shareholders	No. of Branches	Capital	Noteissue*
Chartered banks					
1. Bank of Scotland,1695	Edinburgh	654	33	£1,000,000	£300,485
2. Royal Bank of Scotland, 1727	Edinburgh	854	6	2,000,000	183,000
3. British Linen Co., 1746	Edinburgh	206	43	500,000	438,024
4. Dundee Banking Co., 1763	Dundee	57	1	60,000	33,451
5. Perth Banking Co., 1766	Perth	185	3	100,000	38,656
6. Banking Co. of Aberdeen, 1767	Aberdeen	370	15	240,000	88,467
7. Commercial Bank of Scotland, 1810	Edinburgh	550	52	600,000	374,880
8. National Bank of Scotland, 1825	Edinburgh	1,482	34	1,000,000	297,024
9. Aberdeen Town & County Bank,1825	Aberdeen	489	10	150,000	70,133
10. Union Bank of Scotland, 1788	Glasgow	598	30	1,000,000	327,223
11. Ayrshire Banking Co., 1792	Ayr	109	12	50,000	53,656
12. Western Bank of Scotland, 1832	Glasgow	703	39	1,000,000	284,282
13. Central Bank of Scotland,1834	Perth	405	7	65,000	42,933
14. North of Scotland Banking Co., 1836	Aberdeen	1,605	27	300,000	154,319
15. Clydesdale Banking Co., 1838	Glasgow	947	11	500,000	104,028
16. Eastern Bank of Scotland, 1838	Dundee	552	4	600,000	33,636
17. Caledonian Banking Co., 1838	Inverness	938	10	75,000	55,434
18 Edinburgh & Glasgow Bank, 1838	Edinburgh	1,546	20	1,000,000	136,657
19. City of Glasgow Bank, 1839	Glasgow	906	6	1,000,000	72,921
Totals		13,156	363	£11,240,000	£3,087,209

*As authorised by the Act of 1845, equal to the bank's average outstanding note-issue for the year ending 1 May 1845.
Source: Wenley (1882, p.144), Checkland (1975b, pp.372-73).

The rise of nationally branched banks went hand-in-hand with the demise of the small local institutions. Edinburgh's last non-issuing private bankers were gone by 1835. Provincial banks unable to meet the new competition either failed or sold out. The Glasgow Union Banking Company, founded in 1830 with a partnership of 488 shareholders, soon grew to be a major national bank by acquisition of small local banks (Rait, 1939).

The Union Bank also pioneered the competitive practice of regularly publicising its asset and liability status, in 1836 becoming the first British bank to publish an annual balance sheet. Previously the Bank of Scotland had published its accounts to demonstrate its solvency during the suspensions of 1704 and 1728.

The rise of nationally branched joint-stock banks and the decline of local banks in Scotland by 1844 indicates that there emerged substantial economies of scale in producing bank-note services, that is, the public confidence, easy redeemability (through branching and reserve management), and other qualities necessary to keep bank notes in circulation in a competitive environment. But these economies were always limited.[10] Thomas Kinnear, an Edinburgh private banker who also served as director of the Bank of Scotland, testified (British Sessional Papers BSP 1826, p.132) that the Bank of Scotland had been forced to abandon some of its branch offices due to competition from local banks. No one bank could serve the entire market so cheaply, by virtue of its greater size, as to exclude others. Scottish experience offers no reason to suppose that there exists a 'natural monopoly' in the production of redeemable currency.

Freedom of entry into the banking trade in Scotland was closed off by Peel's Act of 1844 and the subsequent Scottish Bank Act of 1845 (see Chapter 4 below). The years prior to 1845 had seen the entrances of some 109 distinct banking firms. Of those, 36 had failed or been wound up, 12 had disappeared for reasons unrecorded, 11 had retired voluntarily or ended without apparent failure, and 30 had merged into other banks (Checkland, 1975, Tables 2, 3, 9, 11). Twenty banks remained in business in 1845, 19 of them banks of issue (see Table 2.2). Nine of these 19 had entered since 1830. The Clydesdale Bank, established in 1838, is notable for being one of three Scottish banks issuing notes even today (the others are the Bank of Scotland and the Royal Bank, the industry's first two entrants). Since 1845 the number of native Scottish banks has declined steadily, primarily through merger, to today's three banks.

2.3. The Contrast Between Scottish and English Banking

J. Shield Nicholson (1893, p.502) noted that the Scottish system from 1716 to 1845 was 'more than any existing system, the result of continuous development', and owed 'less than any to the direct interference of the legislature'. James Wilson (1847, p.30), first editor of *The Economist*, commented that

> 'we have only to look to Scotland to see what has been the effect of a long career of perfect freedom and competition on the character and credit of the banking establishments of that country'.

[10] In stating my conclusion this way, I am admittedly downplaying the fact that the Scottish banks, like other banks typically, produced a number of outputs jointly with bank-note services.

Its freedom from legislative intervention sharply distinguished Scottish banking prior to 1844 from banking in England and Wales.[11] After the lapse of the Bank of Scotland's legal monopoly in 1716, no Scottish bank enjoyed the legal privileges bestowed on the Bank of England. Correspondingly, the Scottish provincial and joint-stock banks suffered under none of the peculiar series of makeshift restrictions placed on English country banks (apart from the small-note ban).

The original charter of the Bank of England in 1694 did not grant it exclusive privilege in note issue or in other aspects of banking. In 1697 Parliament resolved that no other bank would be chartered while the Bank of England remained, but left the field open to private bankers. Shortly thereafter, as a *quid pro quo* for the bank's taking up more Exchequer bills (the bank actually originated in a war loan to the government), an Act of 1708 barred any English private joint-stock bank of greater than six partners from issuing bank notes or any other obligations with maturities shorter than six months during the continuance of the Bank of England.

The business of supplying bank notes in the English countryside was thereby left to a host of poorly capitalised, locally based banks. Bank of England notes hardly circulated outside London in 1708, and even 120 years later were not commonly encountered outside the city. The Bank of England faced diseconomies of scale in providing bank notes with desired qualities. Local country notes circulated more freely because their authenticity was more easily ascertained, and their acceptance by nearby bankers for redemption or deposit more likely. Bank of England notes bore unfamiliar signatures, could be redeemed for specie only in London, and were not widely accepted by country bankers. In addition - and here the bank may have overlooked a profit opportunity - its notes were issued only in denominations too large for common use, the smallest being £20, until a £10 note was introduced in 1759 and a £5 note in 1793.

Smaller notes were issued by the country bankers who, incidentally, often failed. It became popular in England to attribute the instability of these banks to their issues of small notes rather than their under-capitalisation. Parliament in 1775 prohibited English banks from issuing notes smaller than £1. Two years later notes smaller than £5 were banned. Token coins issued by local manufacturers, differing from bank notes only in form, soon arose to meet the demand for money of small denominations. The £1 notes of Scottish banks, already circulating in northern England, gained greater currency in the northern counties.

Bank of England notes did not gain widespread circulation until the bank finally began opening branches after being prompted by the government to do so in 1826. Their circulation was furthered in 1833 by their becoming a form of legal reserve for the country banks. Country banks had previously been obliged to redeem their own notes in gold or silver coin; now their customers could not legally refuse redemption in Bank of England notes. J. R. McCulloch (1837, p.170) remarked that 'Bank of England notes are now legal tender everywhere except at the bank and her branches'. The notes of the Bank became a form of high-powered reserve money, giving the Bank substan-

[11] This theme has been emphasised by Cameron (1967, Ch.3), and criticised by Checkland (1968). For rejoinders, see Cameron (1982) and Chapter 3 below. Of course, Scotland did not enjoy literally *perfect* freedom; see note 1 above.

tial short-run influence over the English money stock.

In Scotland neither native bank notes nor Bank of England notes were legal tender. Yet the notes of the major Scottish banks circulated freely throughout the country. One-pound notes performed the great bulk of the transactions. An anonymous English writer (1802, p.108) commented:

> 'Whoever has been to Scotland knows that, notwithstanding the appearances which denote real wealth, no coin but that of copper is common; gold and silver are scarcely visible; it is even difficult sometimes to get silver in change of a twenty shillings Bank Note. Purchases and payments of all kinds are commonly made in paper.'

Unlike Bank of England notes, the notes of a major Scottish bank came in conveniently small denominations (though notes smaller than £1 had been outlawed by the Act of 1765). Unlike English country bank notes, their value was secure and their acceptance by other banks commonplace. In the early days, immediately following the Aberdeen, Glasgow and Ayr Bank episodes, the Edinburgh banks refused for a while to accept provincial notes, although they freely accepted one another's notes. Even so, private brokers in the city would change the provincial notes at a discount of 1/2 pence per 20 shillings (0.6 per cent). General acceptance, as we have noted, was the norm after 1774. An individual bank thought over-extended by the industry would occasionally be disciplined by the threatened refusal of its notes.

It is sometimes suggested that free banking is inherently attended by a counterfeiting problem of major dimensions. Counterfeiting was not a significant problem in the Scottish experience. Counterfeiting *was* a problem for the Bank of England, however, especially during the period of the suspension of payments. The explanation is that the likelihood of undetected counterfeiting varies directly with the length of time a note circulates before returning to the issuing bank - where it passes under a teller's discriminating gaze   for deposit or payment. Coppieters (1955, pp.64-65) points out that Scottish notes had a very brief average period of circulation, as other issuing banks would not hold them as till money, but would return them through the clearinghouse. The same could not be said for Bank of England notes.

Because of competition, moreover, we should expect each Scottish bank to pursue a policy towards forgeries of its notes designed to bolster public confidence in its notes (to the point where the marginal revenue derived from increased circulation equalled its marginal cost of confidence bolstering). Thomas Kinnear testified (British Sessional Papers, 1826, p.126) that the Bank of Scotland generally honoured forgeries of its notes tendered over the counter by innocent parties. The bank would then promptly trace the bogus notes back to their source. The bank did not honour forgeries accepted by other banks and returned through the note exchange, since presumably that policy would have been more costly. By raising the costs to the bank of discovering who had forged the notes, and hence of discouraging forgeries, it would have invited a greater supply of forgeries. The accepting banks could not be expected to keep an eye out for forgeries of Bank of Scotland notes unless the burden fell upon them.

The six-partner rule of the Act of 1708 prevented England from experiencing the rise of strong nationally based joint-stock banks like those whose branches superseded local and private banks in Scotland. As Sir Henry Parnell (1833, p.73) explained:

> 'What has been the cause of the failures of Country Banks in England? The facility with which every cobbler and cheesemonger has been able to open a Bank, in consequence of the limitation of the numerous opulent Banks. What has been the cause of so few failures in Scotland? The freedom of the Banking Trade, and the establishment of opulent Banks.'

Good banks could drive out bad, given the chance. In 1826, a recent banking panic having made the inferiority of the English system plain, Parliament granted a limited concession to public agitation on behalf of Scottish principles of joint-stock banking. An Act of 1826 removed the old Act's restriction on the number of partners permitted to establish a note-issuing bank, but only for banks to be housed more than 65 miles from London. Joint-stock banks could do business in London only if they did not issue notes. The new Act also encouraged the Bank of England to open branches outside London. At least one banking historian (Macleod, 1866, pp.335-37) has argued forcefully that the 65-mile restriction continued to deny England the best feature of the Scottish system, the freedom to develop a broad banking network based in the country's financial centre. The freedom to branch into Britain's financial centre - London - was, however, equally denied to the Scottish banks.

In the event of failure of a Scottish bank, a call would go out to its shareholders - who were publicly listed - to pay up in proportion to the nominal value of their shares. The most severe call on record seems to have followed the failure of the Fife Bank in 1829. The holder of each £50 share was assessed at £5,500. All liabilities were paid in full. By one account (Wenley, 1882, p.142), all failed banks having more than nine partners were able to pay their liabilities to the public in full. The loss to the Scottish banking public from all failures to date was estimated in 1841 at only £32,000. Public losses in London during the previous year alone were estimated at twice that amount (Aytoun, 1844, p.678). This experience enhanced the great confidence the Scottish public put in bank notes and contributed importantly to the cyclical stability of Scottish banks.

Limited liability was not available to the non-chartered banks[12] until 1862. The system of compulsory unlimited liability for new entrants can be viewed as a potential barrier to entry, because it may have restricted new banking firms to a suboptimal sharing of bankruptcy risk between shareholders and debt-holders (Carr and Mathewson, 1988, pp.776-77; Cowen and Kroszner, 1989, pp.225-27). It is possible, however, that the restriction was not binding. The unchartered Scottish banks chose to retain unlimit-

12 More precisely, only the Bank of Scotland, the Royal Bank of Scotland and the British Linen Company enjoyed limited liability during the free banking era. The Commercial Bank and the National Bank were granted charters in 1831, but these charters expressly retained unlimited liability. On the question of the liability of joint-stock companies in Scotland, see Campbell (1967); on the liability of the banks in particular, see Logan (1839, p.1).

ed liability even after limited liability became available to them through the Companies Act of 1862. In Checkland's (1975, p.480) view the Scottish banks 'preferr[ed] that the obligation should continue to rest on shareholders; they felt that such a step [adopting limited liability] would reduce public confidence in them, and so harm their business'. Not until 1882, after the 1878 failure of the City of Glasgow Bank helped to change shareholders' perceptions of the risks they faced, and after the 1879 passage of a revised Companies Act, did the remaining seven non-chartered Scottish banks agree to limit their shareholders' liability. (For more on this issue see below, Chapter 3.)

As an investment to bolster public confidence in its obligations, it was not unusual in the 18th century for a local bank to lodge with the town clerk a personal bond guaranteeing payment of its notes. One of the points of contention in the case against the Glasgow Arms Bank was that it had violated its bond by inserting the option clause into its notes. Enforcement of liability was facilitated by Scottish bankruptcy law, which was stricter than English law. In England only the personal estate of an insolvent debtor could be attached. A Scottish creditor was legally entitled to the debtor's real and heritable estate as well. The amount of real and heritable estate an individual possessed could be easily determined by consulting public records. This enabled each partner of a local banking venture to gauge his personal exposure to loss and aided a bank in verifying the collateral property pledged against loans and cash credits. It also enabled members of the public, if they wished, to ascertain the ultimate assets of a local banking partnership. The great security provided to creditors under Scots law helped immunise Scottish banks against any danger of a panic-induced run.

English country banks were never able to create adequate public confidence in their notes. The limitation of English banks to a partnership of six hamstrung their confidence-creating efforts. Joint-stock banking with unrestricted capitalisation and freedom of issue was prevented from evolving. Its trial was limited to 11 years and prejudiced by its exclusion from London. The fact that Scottish notes crossed the border to form the common circulation of the northern counties of England - there is no evidence of English notes travelling north - stands as clear evidence of the superior reliability of the Scottish banks. In 1826 the citizens of Cumberland and Westmorland counties in northern England petitioned Parliament against the proposed restriction of their Scottish note circulation. Their petition, setting forth the facts of their situation, supports the argument that high-quality bank notes will out-compete low-quality notes in gaining public circulation. The petition (quoted by Graham, 1911, pp.366-67) noted that the freedom of Scotland from the six-partner rule

> 'gave a degree of strength to the issuers of notes, and of confidence to the receivers of them, which several banks established in our counties have not been able to command. The natural consequence has been, that Scotch notes have formed the greater part of our circulating medium.'

The petitioners added that they had, with one exception, never suffered any losses from accepting Scottish notes for the last 50 years, 'while in the same period the failures of banks in the north of England have been unfortunately numerous, and have occasioned the most ruinous losses to many who were little able to sustain them.'

Because of the legal limitation on their capitalisation and their consequently restricted ability to spread risks through portfolio diversification and office branching, the English country banks were artificially prone to failure. Experience with country bank failure in turn made the banks less trustworthy and hence more susceptible to sudden panic-induced demands for redemption of notes.

The Scottish banks were both stable and competitive. The English country banks lacked the first of these attributes; the Bank of England lacked the second. The Bank of England did not open branches until the Act of 1826 specifically encouraged it to do so. Adhering to the policies of the London office, the branch offices did not offer interest-bearing current accounts, unlike the Scottish banks, or even interest-bearing six-month time deposit accounts, unlike many country banks. The branches did not allow overdraft privileges, although these (on the model of the Scottish cash credit system) had become popular with merchants. The branches of the Bank of England refused to accept country notes as a matter of course.

Though the country banks operated regular note exchanges in a number of localities, they were excluded from operating on a nationwide basis by their legal exclusion from London and by the Bank of England's refusal to enter into arrangements with the country banks for mutual acceptance and exchange of notes. Competition had long since led the Scottish banks to accept one another's notes. The sole competitive impact of the Bank of England branches seems to have come in their driving down local rates of discount on bills.

Free banking was beneficial to the Scottish public not only for its improvement of the payments mechanism. The unrestricted note issue of Scottish banks also enhanced their intermediation. The contrast between Scottish and English deposit practices - only the Scottish banks paid interest on deposits as small as £10 and paid interest on current accounts without charging a fee for withdrawals may be attributed to the effectiveness of competition in the supply of bank notes in Scotland. Banks were eager to attract active account-holders in part to serve as conduits for placing more notes in circulation. The cash account system, original to Scotland, was similarly the product of competitive note issue. Perhaps the most distinctive feature of the Scottish system to contemporary observers was the extensive branching of the national joint-stock banks. Freedom of note issue, by allowing each bank to hold its own paper rather than precious metals as till money for redemption of deposits, made it economically feasible for banks to establish numerous and dispersed branch offices. Competition in maintaining a national circulation gave them the incentive to branch. The broad basis for the Scottish banks, especially after 1810, was a major source of their stability in the 1775-1845 period.

In light of the evolution of the English banking system, as told in Bagehot's celebrated *Lombard Street*, it is noteworthy that Scotland prior to 1844 did not develop an inverted-pyramid structure of specie reserves. It rather maintained a system of 'each tub on its own bottom'. Each bank held onto its own specie reserves.[13] The English '*one*-reserve system', whereby the Bank of England alone held substantial specie, was, as Bagehot (1873, p.100) explains, the product neither of conscious design nor of natural market evolution. It was instead 'the gradual consequence of many singular events, and of an accumulation of legal privileges on a single bank'. There is no reason to suppose any tendency toward centralisation of reserves in the absence of government intervention.[14] Bagehot (1873, pp.66-68) comments at length that 'the natural system - that which would have sprung up if Government had let banking alone - is that of many banks of equal or not altogether unequal size', and cites Scotland as an example of a system 'where banking has been left free' and where there is 'no single bank with any sort of predominance'. In such a system no bank 'gets so much before the others that the others voluntarily place their reserves in its keeping'.[15]

2.4. Cyclical Stability of Scottish Banks, 1793-1837

The Scottish free banking system proved far hardier during periods of commercial distress than did its English counterpart. As a result, Scottish industry as a whole seems to have suffered less severe cyclical variation than English industry. Even critics of the idea of allowing free banking in London, like J. R. McCulloch, acknowledged 'the comparative exemption of this part of the empire [Scotland] from the revulsions that have made so much havoc in England' (1826, p.281). Non-bank-related differences between Scotland and England may be cited in explaining the relative mildness of Scottish cycles - McCulloch invoked the greater role of agriculture in the Scottish economy, for example - but these are of secondary importance. Scotland largely caught up with England in industrialisation during the free banking period but retained its advantage in macro-economic stability.

Scottish and English experiences may be contrasted for the crises of 1793,

[13] Munn (1981, p.141) provides statistics on the ratios of specie to demand liabilities held by six provincial Scottish banking companies during various decades. In the second half of the 18th century their ratios, averaged for each bank by decades, stood between 10 and 20 per cent in six out of ten cases reported, and over 20 per cent in one case. In the first half of the 19th century the ratios were substantially lower, ranging from 0.5 to 3.2 per cent. The drop may be attributed to lower costs of obtaining specie on short notice or to lower risk of substantial specie outflows.

The claim that Scottish banks held much of their reserves in the form of Bank of England liabilities, and thus characteristically 'pyramided credit on top of the Bank of England' (Rothbard, 1988, p.231; see also Sechrest, 1988, p.247), is in error. See below, Chapter 3.

[14] This point is made by Vera Smith (1990 [1936], p.170).

[15] In order that the 'natural system' may prevail it is important that the central government not play favourites in placing its deposits among the banks. This was an issue that concerned the Jacksonian free banking advocates in the United States (e.g., Leggett, 1984, pp.119-26), and led to their insistence on an 'independent Treasury'. The argument that a favoured bank of the central government must play a special role in the banking system and tends to become a central bank has been raised as an objection to Hayek's (1978) proposal for 'denationalisation of money' by Congdon (1981). This argument may be regarded not as pointing to an insurmountable obstacle to free banking, however, but merely as re-emphasising the importance of government neutrality toward banks in placing its deposits.

1797, 1825-6 and 1837.[16] The weaknesses of the English country banks led to their frequent failure even in good times. This record in turn enhanced their cyclical instability, for it undermined public confidence in them. Benjamin Klein (1978, p.6) has rightly remarked that 'the major way in which monetary confidence is produced is successful past performance'. The slightest suspicion could touch off a run on the country banks. These smallish banks could not turn to one another for financial support in such a circumstance; neither did they appear an attractive investment opportunity to the Bank of England. The Scottish banks, by way of contrast, stood ready to lend one another liquid funds in the event of a short-term disturbance. During the Ayr Bank episode in 1772, for example, the Bank of Scotland and the Royal Bank advanced cash to the three Glasgow banks.

Threat of war from France apparently prompted a great demand for cash in Great Britain in early 1793. The crisis was severe in England. MacPherson's *Annals of Commerce* (1805, p.266) reports: 'Many houses of the most extensive dealings, and most established credit, failed; and their fall involved vast numbers of their correspondents and connections in all parts of the country.' The precise numbers involved are not clear. MacPherson reports the failure of more than 100 of the banks in England and Wales (out of a total variously estimated at 280 and above 400). Macleod (1866, Vol.1, p.383; Vol.2, p.103) avers that of some 400 country banks, 300 were 'much shaken' and 100 failed. Gilbart (1837, p.109), however, reports only 22 bankruptcies. The demand for cash was felt in Scotland as well. Two of the Glasgow banks (the Arms Banks and the Merchant Banking Co.) succumbed in March, but both met their liabilities in full. Hamilton (1963, p.334) notes that 'other banks weathered the storm by paying out freely and by helping each other'. The house of Sir William Forbes, James Hunter & Co., alone extended more than a quarter of a million pounds to other houses. Most of the distress experienced by Scottish businesses was attributed at the time to the tightness of the London discount market.

An even greater trade crisis occurred in 1797. An ongoing outflow of gold prompted the Bank of England to restrict its discounts in 1795. This action checked the external drain temporarily, but an internal drain (public redemption of bank notes following a rise in the domestic demand to hold gold, attributable to reduced confidence in bank obligations) became serious in the following year. An alarm caused in February 1797 by threat of French invasion accelerated the drain and finally led the Bank of England, with the permission of the Privy Council, to suspend payment on its notes. The suspension was approved by Parliament and was not to be lifted until 1821. Scottish banks were largely exempt from the internal drain, as noted by Henry Thornton (1802, pp.112-13) in his account of the events of 1797:

> 'The fear of an invasion took place, and it led to the sudden failure of some country banks in the north of England. Other parts felt the influence of the alarm, those in Scotland, in a great measure, excepted, where, through long use, the confidence of the

[16] The evidence that follows is suggestive. It is certainly not a substitute for a detailed comparative study of Scottish and English business cycles.

> people, even in paper money of a guinea value, is so great (a circumstance to which the peculiar respectability of the Scotch banks has contributed), that the distress for gold was little felt in that part of the island. A great demand on the Bank of England was thus created . . . on the account of people in the country.'

Upon receiving news of the London suspension, the managers of the four leading banks in Edinburgh at this time - the Bank of Scotland, the Royal Bank, the British Linen Company, and Forbes, Hunter & Co. - met and decided to follow the Bank of England's example. Had they made specie available while the Bank of England refused, they feared English demand would rapidly have drained them of their reserves. The suspension of convertibility by Scottish banks was illegal under the Act of 1765, but curiously enough no one seems to have challenged them seriously in court.[17] There is evidence (Checkland, 1975, p.222) that in practice the banks continued quietly to redeem some notes for favoured customers. The suspension brought on a severe disequilibrium in the denominational structure of Scottish currency. The banks would officially no longer give change, and the public hoarded gold and silver coins. The public resorted to making change by tearing £1 notes into halves and quarters, and merchants began to issue token coins (illegally, given the Act of 1765), until the issue of fractional notes by existing banks was temporarily authorised by Parliament.

The period of the suspension provided no let-up in English country bank failures. Thomas Joplin (1826, p.5) observed that 300 bankruptcies of English banks had occurred in the 30 years prior to 1821, 'an average of failures . . . in all probability far exceeding that of any regular business'. He noted that no Scottish joint-stock bank had failed in over 40 years. McCulloch (1826, p.272) reported that 'no fewer than ninety-two commissions of bankruptcy were issued against English country banks' during the period 1814-16: 'and one in every seven and a half of the total of these establishments existing in 1813 was entirely destroyed'. An annual record of country bank licensures and bankruptcies for the period 1809-30 is provided by the history of Gilbart (1837, p.110). This record is reproduced as columns 1 and 2 of Table 2.3. The differing bankruptcy statistics of Pressnell (1956) are also shown. From Gilbart's figures a failure rate has been computed (column 3) and compared with the failure rate for Scottish banks (column 5). The Table shows that over this period the average annual failure rate

[Continued on page 44]

[17] It is not immediately clear why the Scottish banks (and likewise the English country banks) did not remain tied to specie and let their currency float against the Bank of England note. One explanation is that, London being Britain's financial centre, suspensions by the London banks made the Scottish banks unable to get extra gold from their correspondent banks or from sale of securities in the London market. In other words, their secondary reserves were immobilised, making it infeasible to continue gold redeemability (unless the banks were prepared to incur the costs of purchasing and importing additional gold). A second explanation is that Scottish bank customers preferred a note convertible into what had become London's basic cash due to the importance of trade with London. In other words, Britain as a whole was the natural currency area.

Irish banks, by the way, were directed to suspend by the British government, a directive ratified by the Irish parliament. Northern Ireland, where bank notes did not circulate, continued on the gold coin standard. On this interesting episode (which is paralleled by California's continuing on the gold standard while the rest of the Union left it for the green back standard during the American Civil War), see Fetter (1955, pp.12-16).

Table 2.3 *English and Scottish Bank Failures, 1809-30*

Year	Licensed English note issuers[a] (1)	English bankruptcies[b] (Gilbart) (2)	English bankruptcies[b] (Pressnell)	English bankruptcies per thousand (3)	Scottish banks year end (4)	Scottish bankruptcies per thousand (5)
1809	702	4	5	5.7	37	0
1810	782	20	13	25.6	38	26.3
1811	789	4	11	5.1	37	0
1812	825	17	11	20.6	37	0
1813	922	8	6	8.7	36	27.8
1814	940	27	20	28.7	37	0
1815	916	25	33	27.3	37	0
1816	831	37	16	44.5	36	27.8
1817	752	3	1	4.0	36	0
1818	765	3	8	3.9	37	0
1819	787	13	9	16.5	37	0
1820	269	4	6	5.2	37	0
1821	781	10	12	12.8	36	0
1822	776	9	5	11.6	35	28.6
1823	779	9	11	11.6	35	0
1824	788	10	3	12.8	35	0
1825	797	37	60	46.4	36	27.8
1826	809	43		53.1	35	28.6
1827	668	8		11.9	35	0
1828	672	3		4.5	35	0
1829	677	3		4.4	34	29.4
1830	671	14		20.9	36	0
Total		311				
Avg/yr	781.7	14.1		18.1	36.1	7.8

[a] Beginning 1808 a licensing duty was imposed on note-issuing English banks. The number of licensed note issuers represents roughly, but probably overstates, the number of country banks, because banks having more than one note-issuing office were required to take out a separate licence for each office up to the fourth. On the other hand, non-issuing banks were not licensed. If the figures in column (1) overstate the number of country banks, then the figures for bankruptcies per thousand in column (3) are biased downward. An earlier version of this table in White (1984, p. 48) adjusted the Scottish figures similarly by counting a bank's first three branches as separate banks, but because Scottish banks were more commonly branched, this adjustment probably biased the Scottish bankruptcy rate figures downward more severely. Columns (4) and (5) are not adjusted in this way, so that the computation is now most likely biased *against* showing lower rates in Scotland. The Scottish bankruptcy rates now shown are consequently higher than those appearing in the earlier version of this table. Column (5) has also been revised to square the years in which Scottish bank failures are recorded with the accounts of Munn (1981b) and Checkland (1975); I thank Larry J. Sechrest for drawing my attention to previous descrepancies.

[b] Although Gilbart (1837) and Pressnell (1956) offer differing figures on the number of English bank failures in each year 1809-25, their totals for those years are the same.

Sources: Gilbart (1837, p. 110); Pressnell (1956, p. 538); Checkland (1975, pp. 177-79, 320-21); Munn (1981b, pp. 69, 86-7).

was more than twice as high for English banks as for Scottish banks.[18]

The crash of 1825-6, attributable to Bank of England policy, brought down a number of England's most reputable country banks and London banking houses as well as scores of smaller banks. A single month in 1825 saw 73 banks stop payment, only 10 of which eventually resumed business. One member of Parliament took note that 700 or 800 country banks - virtually the entire industry - had asked the Bank of England for assistance during the general panic. The Bank of England itself, in the words of Bagehot (1873, p.15), 'was within an ace of stopping payment' due to depleted specie reserves. Gilbart records 80 commissions of bankruptcy issued against English country bankers for the years 1825-6. Macleod (1866, Vol.2, p.103) puts the number at 76, but adds that 'from the different ways of making compositions, etc, the number of failures should probably be estimated at four times the number of commissions of bankruptcy'. Repercussions of the distress reached Scotland in late 1825, but unsettled only four small members of the banking trade. One retired, apparently still solvent, in 1825; another was taken over by the Commercial Bank of Scotland in 1825 with no inconvenience to depositors or note-holders; a third failed in 1826 but paid its liabilities in full; and the Fife Banking Co. stopped payment in 1825 but did not wind up until 1829 (Checkland, 1975, pp.314-15).

English joint-stock banks, newly legalised by the Act of 1826, sprang up in great numbers in the English countryside after further liberalisation of entry in 1833. Over 200 fresh banks were established in the years 1835 and 1836, a period of Bank of England expansion. Their inexperience in maintaining adequate reserves became evident in the panic of 1837, which was precipitated by the Bank of England's being compelled to reverse course and contract. 'In the heavy losses and banking failures which ensued,' one historian (Graham, 1911, p.202) notes in passing, 'Scotland had little share'. Robert Bell (1838, p.8) commented that 'while England, during the past year, has suffered in almost every branch of her national industry, Scotland has passed comparatively uninjured through the late monetary crisis'.

[18] The limitation of the Table to the years 1809-30 is due to the limitation of Gilbart's figures to those years.

CHAPTER 3

Challenges to the Free Banking View of Scottish Experience

3.1. Introduction

The previous chapter supports the view that the Scottish banking system before 1844 warranted the label of 'free banking' that it has traditionally received. The regulatory régime approximated *laissez-faire* closely enough that the system's institutions, practices, and performance were basically those of an unregulated free-market monetary system. This view was promoted by the 19th-century advocates of free banking in Britain, America, France, and elsewhere, who cited Scottish banking as a model to be emulated.[1] It permeates the early histories of Scottish banking, most notably that of Andrew Kerr (1884). In more recent literature, it underlies the summaries of the Scottish experience offered by Vera Smith (1990, Ch.2) and Rondo Cameron (1967, Ch.3) as well as by Chapter 2 above. It also underlies the use of the Scottish experience as counter-evidence to the legal restrictions theory of money (White, 1987, 1990).

Several critics have challenged this interpretation. Economic historians Checkland (1968), Munn (1985), and Tyson (1985), who understandably wish to bring greater nuance to any simple view of a complex historical experience, have pointed to features of the Scottish case seemingly at odds with the free-banking model.[2] They have offered alternative interpretations, according to which the Bank of England, or the two most important Scottish banks, played key regulatory or supervisory roles. Monetary economists Cowen and Kroszner (1989) and Rothbard (1988), who wish to defend visions of *laissez-faire* payments systems (the legal restrictions theory of money, and the one-hundred-per-cent gold standard, respectively) that do not coincide with the Scottish model, have argued that the Scottish régime was not close to *laissez-faire*. The second group draws primarily on Checkland (1975) and Munn (1981) for historical details, but it appears that they have not read those sources closely enough.

The aim of this chapter is to rebut the most important criticisms of the free-banking view of Scotland. Several critics have usefully emphasised certain special features of the Scottish case, and have correctly cautioned against regarding Scotland as a case of pure *laissez-faire*. But the major claims of others do not withstand critical scrutiny. Checkland (1975) and Munn (1981) continue to serve as the most authoritative chronicles of events. What is at issue is both the 'basic facts' and their interpretation. What pattern best fits the facts? I find that the free-banking pattern fits best.

[1] See Vera Smith (1990), Nataf (1984), White and Selgin (1990), and below, Chapters 4-5.

[2] Writes Munn (1991, p.66): 'I feel that this debate tends to force history into a straitjacket of economic theory which, like all straitjackets, is very uncomfortable to wear.' There is some justice to this charge. It could be levied with equal justice against most economic history done by economists.

If this is correct, then the Scottish experience remains relevant to current policy debate over banking deregulation. However, although the Scottish example is important, and perhaps even the most important historical case of relatively unregulated banking, in light of the wide variety of other evidence available (see particularly Dowd, 1992a), neither the case for nor the case against a free-banking policy depends exclusively on how well the Scottish experience exemplifies free banking.[3]

3.2. Is the Traditional Contrast Between the Scottish and English Banking Systems False?

As an introduction to the debate over the nature of the Scottish banking system, it is useful to consider an issue that Sidney Checkland (1968) raised in an essay-review of Rondo Cameron's (1967) work on English and Scottish banking. Cameron (1982) responded belatedly in a *festschrift* for Checkland, but did not criticise his arguments point by point as the argument below does.

Checkland (1968, p.153) argued that Cameron's contrast between a *laissez-faire* Scottish system and a legislatively hobbled English system 'is overdone, and rests, in part, on false grounds'. In Checkland's view (pp.147-48) Scottish banking was not distinctly less regulated than English banking in the early 19th century. The British state 'played a minimum role', but a role, in both systems. The state did not attempt mercantilistic control, did not impose 'alien objectives and rules', and did not coerce the banking system in an attempt to foster growth in either country. Its 'watching brief', Checkland contends, 'was confined to the question of stability'. Thus he concludes (p.154): 'It is realistic to regard the English and Scottish banking systems as being essentially similar. They share ... that category of banking institutions that were part of spontaneous, atomistic, liberal growth, with its dilemma of stability. The real contrast lies between them and the other systems discussed' in Cameron's book, namely France, Belgium, Germany, Russia, and Japan.

The contrast between Scottish and other systems is indeed greater. But there are important contrasts between England and Scotland before 1844. Checkland's own history of Scottish banking shows, as Cameron (1982, pp.102-03) puts it, that 'there were significant differences in the two systems at that time and that the Scottish system was markedly superior'. The contrast between Scotland and England is important because it is more nearly a *ceteris paribus* experiment than other possible international contrasts. In a passage Cameron does not cite, Checkland (1975, p.xviii) notes that its advocates 'wished to see the Scottish system of banking extended to England in the nineteenth [century]'. If these people were not deluded, and Checkland does not suggest that they were, then the English and Scottish banking systems must have differed in important respects.

[3] Charles Goodhart (1987, p.131) is correct to point out, as against my statement that the Scottish case 'provides unique evidence on the workability of monetary freedom', that there have been many other relevant historical experiences. Schuler (1992) lists some 60 known historical episodes of plural note-issue, and counts Scotland as one of 27 such episodes subject to no more than mild legal restrictions.

In saying that the state intervened only for the sake of stability, Checkland neglects the important role of state fiscal concerns - the desire to have a pet bank from which to borrow - in motivating the original grants of privilege to the Bank of England, and presumably in motivating the preservation and extension of those privileges. He also neglects the rent-seeking self-interest of the Bank of England working in the same direction.

Checkland's attempt to argue that England's banking system was practically as 'spontaneous, atomistic, liberal' as Scotland's is clearly strained. He declares (p.151): 'In England until 1826 there was only one kind of state intervention [in banking], namely the maintenance of the preferred position of the Bank of England.' This neglects the ban on small notes. More importantly, the means chosen for maintaining the Bank's preferred position had profoundly distortive effects. As Checkland recognises, the chief means were 'the six-partner rule and the employment by the government of the Bank as its fiscal agent'. He tries, unpersuasively in my view, to diminish the importance of both means.

Checkland (p.151) excuses the fiscal favouritism as justified: 'Though politics and vested interest were certainly present the case was strong for recognising as primary a single institution acting as the financial agent of the state.' It is unclear, however, what this 'strong' case was, or why the state could not have conducted its financial affairs without favouritism. Checkland (p.150) denies that the Scottish system was freer than the English from distortion due to government finance: 'The Scottish banking system, with its close ties both with the London private bankers and with the Bank of England, together with its holdings of government debt, was no less than the English an instrument of government finance.' But surely there is a difference between the concessionary loans that the Bank of England made to the government in its early days, the *quid pro quo* for which was the six-partner rule, and the Scottish banks' voluntary holding of government debt purchased at the market price. This is Cameron's point.

Unless the Scottish chartered banks were compelled to hold government debt as a *quid pro quo* for their charters, which Checkland does not suggest, Scotland without the six-partner rule was indeed freer than England from distortions arising out of government fiscal needs.

This brings us to the question of the impact of the six-partner rule, which restricted other English banks to six or fewer partners (neither could any other bank receive a charter). Checkland (p.152) dismisses as 'exaggerated' the traditional argument that the rule promoted instability in English banking by preventing the formation of joint-stock banks large enough to be adequately capitalised and diversified. Let us consider his reasons one by one:

1. Checkland notes that apart from the three chartered banks (and the short-lived Ayr Bank), no large joint-stock banks arose in Scotland before 1810. But this tells us that the six-partner rule was more binding after 1810, exactly when the contrast in stability was most remarked upon, not that it was never binding. Furthermore, competition among several chartered banks was a salutary ele-

ment lacking in England. The six-partner rule prevented any competition with the Bank of England for note-issue business in the London area, and thereby prevented the emergence of a note-exchange system which could discipline the Bank against over-extending its circulation.

2. Checkland argues that the 'relatively greater stability of the Scottish banks' had less to do with the number of partners than with three other distinguishing circumstances: the Edinburgh banks' large holdings of government securities, weekly note-exchanges, and mutual support through inter-bank loans from the two oldest chartered banks. But the first factor hardly seems relevant to the greater stability of the Scottish provincial banks compared to the country banks of England. The absence of a six-partner rule helps to explain why Scotland developed a regular note-exchange system sooner than England. The plurality of large banks made mutual support possible, and this support could later be safely and hence profitably extended to smaller banks in part because no six-partner rule weakened the other banks.

3. Checkland suggests that the six-partner rule actually promoted stability in two ways. First, with the rule in place, the partners in a bank 'were not endangered by the threat of a joint-stock mammoth invading their territory and destroying them'. Second, joint-stock enterprises could be unstable, as seen in the 17th century and in the behaviour of at least some joint-stock banks after 1826. But surely restrictions that shelter undersized banks or other uneconomic enterprises cannot enhance the soundness and stability of the economy, however much they may do for those firms in the short run. That some larger banks made errors is no argument for compulsory smallness.

After 1826, Checkland (p.151) says, 'the government ended the six-partner rule but began to regulate the English note-issue'. He attributes this regulation to an empirically justified 'fear of a perilous conjunction between those notoriously volatile elements, note-issue and joint-stock promotion'. But the six-partner rule *remained* in place for issuing banks within 65 miles of London, reinforcing the Bank of England's predominance in the financial centre. The drawing of the circle around London seems better explained by concern for the stability of the profits of the government's favourite debt-holder, the Bank of England, than by any proclaimed concerns for the stability of the economy. The Bank's historian, Clapham (1945, ii, pp.87-88, 102-06), documents its directors' lobbying efforts to retain its privileges as the sole bank of the state and the sole issuer in the London area. There likewise seems to be more than 'the influence of the quantity theory of money and the fear of irresponsible note-issuing' that Checkland cites behind the provisions of the 1833 Act giving Bank of England notes quasi-legal-tender status, and behind the provisions of the 1844 Act giving the Bank a more complete monopoly of the note-issue. These essentials of the 1844 Act were proposed to Peel early in 1844 by the Bank of England's Governor and Deputy Governor.

Horsely Palmer, Governor of the Bank in the 1830s, had long wanted to monopolise the circulation (Clapham, 1945, ii, pp.113-14, 178-79).

Checkland states that 'After 1826 the Treasury did not really obstruct the spontaneous growth of joint-stock banks'. But the spontaneous growth of joint-stock banks was very likely obstructed in an important way by their exclusion from London even after 1826. It certainly was obstructed by the Bank Charter Act of 1844, which froze authorised issues and absolutely barred new banks of issue.

Checkland finds Cameron's criticisms of interventionist British banking legislation unwarranted, apparently because Checkland believes (for unspecified reasons) that a free-banking policy was not really an option. Regarding alternative policy courses, he writes (p.152):

> 'There were two possibilities: either the state might have allowed banking to evolve 'freely' (e.g. without control of note-issues or of joint-stock banking organisation or of any other aspect, and without creating a special position for certain banks) or the state might have undertaken a much more far-reaching control of banking. Neither was practicable in the Britain of the eighteen-thirties and 'forties.'

If free banking was impracticable, then certainly Scotland cannot have practised something close to it.

3.3. How Important Were the Privileges of the Scottish Chartered Banks?

Those who have offered the Scottish system as an example of free banking have generally recognised that *laissez-faire* did not prevail in its purest form. The point at issue is, how important were the deviations from *laissez-faire*? Several critics have argued that the chartered banks in Scotland had privileges that significantly affected the system.

Cowen and Kroszner (1989, pp.225-27), following Carr, Glied, and Mathewson (1986) and Carr and Mathewson (1988), point to the restriction of limited-liability charters to three particular banks, which made unlimited liability compulsory for other banks, as a barrier to entry.[4] Clearly such a restriction on the contractual risk-sharing arrangements firms may adopt is potentially a barrier to entry. Statements to the effect that Scotland enjoyed 'perfect freedom' (Wilson, 1847, p.30), 'complete freedom from legal restriction' (Wenley, 1882, p.142), or 'complete freedom of entry' (the First Edition of the present work, pp.3, 29), are therefore incorrect. But how important was this barrier in practice?

Chapter 2 above recognises that compulsory liability rules are potentially an obstacle to optimal risk-sharing arrangements, but suggests (following Checkland, 1975, p.48) that the restriction against limited liability banks in Scotland was not binding because the unchartered banks of Scotland chose to retain unlimited liability in the 1860s and '70s even after limited liability became available to them through the Companies Act of 1862. Carr, Glied, and Mathewson (1986) challenge this interpreta-

[4] In the 19th century Henry C. Carey (1840) raised this point as an objection to the Scottish banking system.

tion of the evidence. They point out that while the 1862 Act allowed limited liability for other bank obligations, it retained unlimited liability for note-issues. They conclude (p.9): 'Consequently it is not surprising that no Scottish bank adopted the restricted limited liability privileges of the 1862 Act.' This conclusion seems a *non sequitur*. If unlimited liability was inefficient for Scottish banks, as their theory (Carr and Mathewson 1988) suggests, would not those banks have found a substantial limitation of liability better than no limitation, and therefore have taken advantage of the 1862 Act?

A question of the magnitude arises here. Carr, Glied, and Mathewson (p.9) say that 'the 1862 Act continued to maintain unlimited liability for a significant share of the liabilities of Scottish banks'. In fact notes were only 7.9 per cent of total liabilities for the Scottish banks in 1865 (Checkland 1975, Table 44, p.743), or 6.6 per cent of liabilities plus capital (a figure Carr, Glied, and Mathewson themselves cite on p.10). Whether or not 7.9 per cent is 'a significant share' or not, clearly a limitation of liability for the other 92.1 per cent is not trivial.

A more direct test of the thesis of Carr *et al.* seems possible but has not yet been carried out. According to Carr, Glied, and Mathewson (1986, p.5), 'the inefficiency of banking firms with unlimited liability implies that the value of unlimited liability shares are reduced relative to their limited liability counterparts'. It should be possible to test this hypothesis by comparing share prices for the Scottish chartered banks against those for the joint-stock banks with unlimited liability. Did the shares of the chartered banks really command a premium *ceteris paribus*? The traditional view implies that any such premium was negligible.

Carr, Glied, and Mathewson (1986, p.10) believe that the surviving Scottish joint-stock banks finally adopted limited liability in 1882 because an 1879 Act offered 'substantially lessened' liability for notes. On my reading, however, the 1879 Act retained greater shareholder liability for notes than the 1862 Act. Historians of the industry have traditionally attributed the adoption of limited liability not to the change in the law, but to the 1878 failure of the City of Glasgow Bank, which evidently changed the perceptions of shareholders concerning the risks they faced.

We can also assess how binding compulsory unlimited liability was before 1844 by contrasting the three limited-liability 'public' banks (the Bank of Scotland, Royal Bank of Scotland, and British Linen Company) with the unlimited banks. Cowen and Kroszner (1989, p.226) note that the public banks were larger on average, and (following Carr and Mathewson, 1988, pp.776-77) that none of them failed. They plausibly conclude that 'limited liability made it easier to raise capital and that the corporate form was conducive to survival'.

As evidence to the contrary, however, several facts regarding the unlimited-liability banks as of 1845 (from Table 2.2 above) can be noted: (1) the Commercial Bank of Scotland had more branches than any of the public banks, a greater note circulation than two of the three, and more shareholders than one; (2) the National Bank of Scotland had more branches than two of the three public banks, a note circulation only 1 per cent smaller than that of the second largest public bank, and more shareholders than any of the three; (3) the North of Scotland Banking Company and the Edinburgh and Glasgow Bank each had more shareholders than any of the three public banks; and (4) the Union Bank of Scotland had a greater note-circulation than two of the three public banks. All told, the public British Linen Company ranked first, the Bank of Scotland fourth, and the Royal Bank seventh in size of circulation. Banks with unlimited liability apparently did not have great difficulty raising capital on a large scale: five had capitals as large as the Bank of Scotland's £1 million, and eight had capitals as large or larger than the British Linen Company's £500,000. Nor was the survival of unlimited banks obviously impaired once they attained adequate size: none of the five above-mentioned large joint-stock banks failed while they had unlimited liability. (Two of the eight with the largest capitals eventually did fail after 1844.)

Still, the banks that made efforts to get legislative charters, and to deny them to other banks, must have wanted them for some reason. Cowen and Kroszner (1989, p.226, n. 11) correctly point out that 'since resources were expended to fight for and against corporate charters, we can infer that the bankers of the time believed that the privileges associated with charters were valuable'. Cowen and Kroszner cite several possible advantages beyond limited liability, one of which clearly had some value: government customs officers were instructed to accept only the notes of the chartered banks in payment of duties (Checkland, 1975, p.186).

Cowen and Kroszner (1989, p.226) also claim that 'only they [the public banks] were authorised to "hold and remit" government revenues'. The basis for this claim is unclear, since it is not in the pages of Munn and Checkland that they cite.[5] Checkland (1975, p.166) in fact relates that the private bank of Sir William Forbes and Company in the late 18th century 'had the remittance of the excise duties from Edinburgh to London'. He adds: 'The Royal Bank had long had the remittance of the customs; the British Linen that of the revenue of the Post Office[;] the Bank of Scotland had nothing.' Thus a charter was neither necessary nor sufficient to benefit from government patronage.

Cowen and Kroszner cite two other advantages: (1) 'the appearance of official sanction', which Checkland (1968, p.149) also notes, and (2) escape from 'the uncertain legal identity of unincorporated entities', which existed until a statute clarified their status in 1826. It is not clear how important these really were. But in at least one respect, receivability for duties, the public banks enjoyed politically created rents. The existence of such rents is clearly contrary to strict *laissez-faire*. Accounts of the Scottish system as free banking have perhaps under-emphasised (though they have not ignored) the 'preferred position' of the public banks (Checkland, 1975, p.235) in this respect.

Contrary to Cowen and Kroszner (1989, p.226), however, the charters did not have the effect of 'reducing competitive pressures (hence relaxing the zero-profit condition)' throughout the free-banking era. The evidence indicates that while the public banks may have enjoyed a more-or-less advantaged position before 1810, they clearly

[5] Cowen and Kroszner cite *inter alia* Checkland (1975, p.150), a page not relevant to the question. Perhaps they meant to cite Checkland (1968, p.149), which contains the statement that 'A charter was a useful prelude to gaining a share in the holding and remitting of government revenues, a source of trading funds of great value'.

faced effective competition at the relevant margins between 1810 and 1844. Competition between the public banks and the large joint-stock banks was vigorous in note-issuing, deposit-taking, lending and discounting, inland exchange, and other aspects of banking.[6] Profit margins for all banks were squeezed as competitive bidding for loans and deposits kept the interest differential down to 1 per cent (Checkland, 1975, pp.384-88), exactly Neil Wallace's (1983) estimate of the competitive spread in the absence of legal restrictions. Contrary to Cowen and Kroszner's hypothesis of a 'relaxed' zero-excess-profit condition, Munn (1982, p.118) comments that 'the competitive nature of the business' had the result that 'profits were reduced and therefore all earning assets had to be managed with fine attention to detail. There was no room for error or even slackness if dividends were to be maintained'. Attempts were made in the 1830s and '40s to limit interest rates and activity charges through cartel agreements, but such agreements proved unsustainable in the face of strong competitive pressures (Checkland, 1975, pp.449-50; Munn, 1982, p.122).

Munn (1981, p.93) quotes a statement by the directors of the National Bank of Scotland in 1842: 'The great competition which now exists amongst the numerous banks in Scotland has had the effect ... of reducing the profits of Banks in operation.' Munn adds, citing Gourvish (1969) and an 1840 Bank of Scotland document:

> '[T]he public banks also felt the strain. The Bank of Scotland in particular had its profits squeezed. It attributed the fluctuations and the general decrease in profits between 1814 and 1840 to four causes. The note circulation which had formerly been the major source of profit had decreased due to the increased competition for business and the growing use of cheques. Secondly the yields on government securities had fallen by more than one per cent. Thirdly the par of exchange had been reduced from 50 days to 5 days. Lastly commission on bills and on letters of credit had been reduced while stamp duties on notes had been increased.'

The elimination of excess profits in note-issuing, exchange, and bill-discounting, is evidence of the effectiveness of competition among the banks. Cowen and Kroszner fail to inquire after this evidence. It appears that they simply assume, incorrectly, that the infringements of *laissez-faire* to which they point precluded effective competition. Goodhart's (1988, p.51) characterisation of the Scottish system as 'oligopolistic in form' and his tentative hypothesis that in a system of the Scottish sort 'competitive . . . pressures *may* be less' are similarly misplaced for the 1810-44 period at a minimum.

Checkland's account also sometimes overstates the public banks' advantages. In a chapter on the state of the system as of 1810, Checkland (1975, p.186) asserts: 'The larger banks, of course, enjoyed self-reinforcing advantages, for because they were the principal sources of lending, they were better able to get their issue out.' He goes on to call this the 'law of cumulative success for larger concerns'. This assertion, however, embodies a complete *non sequitur*. The larger banks lending more notes out equally had more notes returning home each week. It remains to be shown that their

[6] Generalisations about the Scottish system thus need to be carefully dated. Munn (1982) discusses the structural changes in Scottish banking between 1810 and 1844.

efforts to keep notes in circulation enjoyed continually increasing returns to scale. If they had, then the larger banks could have grown ever more dominant. In fact, according to Checkland's own figures (table 8, p.250; table 14, p.424; table 15, p.426) the public banks' share of the circulation declined significantly in the period after 1800, from 54 per cent in 1802 to 46 per cent in 1825, and thence to only 33 per cent in 1850.

3.4. Did the Chartered Banks Play a Controlling or Central Banking Role in the Scottish System?

In his review of Cameron, Checkland (1968, pp.149, 154) suggests that the public banks played a regulatory role in the Scottish banking industry much like the Bank of England played south of the Tweed. In doing so, they acted as stand-ins for the government, which 'wishing to minimise its own participation in banking, thought that it could best do so when "leadership" (e.g. a sense of responsibility for the working of the system as a whole) was provided by a dominant element within the system'. Thus 'the Edinburgh banks regarded themselves as the custodians of the system', and 'constituted, in effect, a state-recognised "gild".' Most provocatively, he adds (p.153) that 'it can be argued that through the chartered banks Scotland's banking was more "controlled" than that of England'. Munn (1985, p.341) seems to argue somewhat along the same lines, citing 'forms of influence from the centre' and the belief by contemporary banker Alexander Blair in 'his role at the Bank of Scotland as policeman of the system'. Tyson (1985) expresses a similar view.

It is noteworthy that Checkland hedges the word 'controlled' with quotation marks. What was the 'controlling' or 'leadership' role of the public banks? Explains Checkland (1968, p.149): 'They developed a code of banking among themselves, and they sought, not without success, to enforce it upon others.' In particular, they insisted that member banks in the note-exchange system hold a secure secondary reserve in government stock, as well as an adequate primary reserve. This practice, however, was clearly *not* a matter of cartelisation or discretionary direction of the banking system. Any note-exchange or clearinghouse system requires minimum standards for admission because members are agreeing to accept and to hold until settlement one another's liabilities. This sort of banking industry 'self-policing', as Munn (1985, p.341) calls it, has nothing intrinsically to do with some banks having superior legal status to others. It emerged in the United States among legally equal clearinghouse members (Timberlake, 1984, Gorton, 1985, Gorton and Mullineaux, 1987). The 'gild' of Scottish public banks did not successfully control interest rates or otherwise prevent inter-bank competition. The behaviour of the Scottish system, especially from 1810 to 1844, was shaped by the dictates of competition, not by the desires of the 'leading' banks. Checkland's (1975, p.205) summary of the situation is consistent with this view:

> 'The public banks, though they insisted on every possible occasion upon their public role, were very limited in their ability to control the system ... . [I]n a system of free banking, as in Scotland, such devices [as they could employ to threaten other banks] could be of only limited effectiveness.'

Membership in a common clearing system does not itself reflect cartelisation, but instead reflects the natural evolution of a competitive system (*Selgin* and *White*, 1987). In opposition to this view, *Munn* (1985, p.341) refers to 'the reign of terror exercised by the public banks in Edinburgh which forced the other banks to join the exchange, that is, the exchange did not emerge as if by some invisible hand but required a very visible hand to bring it about'. It is true that the public banks played an important role in the development of the Scottish note-exchange. But the applicability of the metaphor of the invisible hand does not require that all agents be atomistic and anonymous, only that their actions produce a pattern which is not deliberately designed. The emergence of the Scottish note-exchange system among the provincial banks, before the public banks decided to join it in 1771 (Munn, 1981, pp.21-25), meets this criterion. The 'reign of terror' to which Munn so colourfully refers (his book of 1981, p.27, termed it more mildly as 'period of "rough wooing"') was simply the public banks' self-interested policy of redeeming notes over the counter when an issuer short-sightedly resisted participating in the regular exchange. Non-participation was short-sighted because, as Munn (1981, p.28) indicates, mutual acceptance and regular exchange increased the demand to hold a bank's notes and thus increased its sustainable circulation, even though it shortened the average circulation period of its notes.

Munn (1985, p.341) mentions as an additional form of 'influence from the centre' the willingness of the *Royal Bank of Scotland* to 'act as a lender of last resort to the provincial banking companies'. It is not clear what sort of 'influence' the Royal Bank attached to its loans, though it naturally insisted on certain evidence of soundness in its borrowers. Inter-bank lending has no intrinsic connection with hierarchical relations among banks, as modern inter-bank lending markets show.

3.5. Did Dependence on London Make Scottish Banking a Mere Satellite System?

Several critics have argued that the Scottish system's status as a mere '*satellite* to the London centre' (*Goodhart*, 1987, p.131) undermines the free-banking interpretation of Scottish experience. There are two sets of claims here. The first is that the Scottish banks customarily '*pyramided*' their credit on that of the Bank of England, or that the Scottish money supply was geared to the quantity of Bank of England liabilities. The second is that the Scottish system depended on the London money market for occasional liquidity needs or, even more damaging to the free-banking interpretation, depended on the Bank of England as a lender of last resort.

3.5.1. The Question of Pyramiding

Sechrest (1988, p.247) advances the first claim: 'the Scottish system was de facto a central bank system in which individual private banks pyramided their note issues upon the reserves of the three chartered banks, which, in turn, pyramided their issues upon the reserves of the ultimate source of liquidity for the entire British Isles: the Bank of England.' Rothbard (1988, p.231) similarly asserts that the Scottish banks 'pyramided credit on top of the Bank of England'.

To say that one bank 'pyramids credit' on top of another is to say that the first holds fractional reserves in the form of the second's liabilities. (The credit structure then forms an 'inverted pyramid' in which each dollar of the second bank's liabilities 'supports' several dollars of the first bank's.) This is indeed what Sechrest tries to demonstrate. Sechrest (p.250) cites Checkland's (1975, p.186) statement that 'it became the custom of other banks, both the private bankers ... and provincial banking companies, to hold part of their cash in the notes of the public banks, rather than hold cumbersome gold', and takes this to indicate (p.253) that 'much of the reserves of the non-public banks were held in the form of public bank notes'. He then adds, quoting Fetter (1965, p.34): Similarly, 'the three chartered banks of Scotland kept their reserves largely in deposits with the Bank of England.'

If this demonstration were successful, it would indeed upset Chapter 2's picture of Scottish banking as a system in which 'each bank held onto its own specie reserves'. On closer examination, however, it does not stand up. Although there were some exceptions in the earlier days of the system, other Scottish banks did not generally pyramid on the public banks, and especially did not do so during the heyday of the system. Nor did the Scottish public banks customarily pyramid on the Bank of England, except possibly during the Restriction period.

Checkland says that certain other banks held 'part' of their reserves in the form of public bank notes - not 'much', as Sechrest would have it. Was it a negligible part or a significant part? Balance-sheet figures sufficient to answer this question unfortunately are not provided by Checkland, or by Munn (1981, pp.239-84), who presents provincial bank balance sheets that lump all reserve items together as 'cash'. Munn (1981, pp.139-40) does offer a summary discussion of the question, however, which Sechrest appears to have overlooked. Munn notes that 'the most liquid of the assets of the banking companies took three forms - namely balances with correspondents in London and Edinburgh, the notes of other banks, and specie'. After discussing the first item, Munn says the following about the holding of other banks' notes:

> 'The mixed notes which often figure in the balance sheets were the notes of other banks and banking companies which had been taken in the course of business. These were unimportant as a reserve asset because they were exchanged at least once per week after the formation of the note exchange in 1771. The amount which appeared in the balance sheet would largely depend on whether the exchange took place before or after the balance was struck. Nevertheless, in times of pressure the amount of mixed notes taken between exchanges might prove to be a useful temporary relief from a liquidity crisis.'

This provides a very different picture from Checkland's statement or Sechrest's interpretation of it. The provincial banking companies evidently did not customarily hold on to public bank notes as a part of their reserves. It makes little sense, moreover, to suppose that they would. Public bank notes would be no less costly to hold than specie in terms of forgone interest. It is difficult to believe (contra Checkland) that the degree to which gold is more 'cumbersome' than notes mattered much for the form in which reserves were held.

In the early days of Scottish banking, provincial banking companies whose notes had geographically limited circulation may have held small inventories of public bank notes for the sake of certain customers (those travelling to Edinburgh, say) who preferred to make withdrawals in that form. But it is unlikely that such holdings formed a significant part of reserves, and *Munn* does not mention them. Travellers could have instead used drafts on correspondent banks. Other customers would just as willingly have taken the provincial banks' own notes as public bank notes.

The case of the non-issuing private banks is different. It makes perfect sense for such banks to have held reserves of public (or other widely acceptable) bank notes to satisfy customers who preferred to make withdrawals in the form of notes rather than specie. These banks did then 'pyramid credit' on top of the banks whose notes they held. Their role in the industry was small, however, and vanished before the end of the free-banking era.

Checkland's statement concerns Scottish banking practices as of 1810, before the entry of the larger joint-stock banks, which displaced the Edinburgh private banks and the provincial banking companies to which he refers. The joint-stock banks evidently did not hold public bank notes as reserves, and there is no reason to suppose that they would have. Thus Scottish banking at the most developed stage of the free-banking era did not exhibit *pyramiding* of other banks' note issues on the reserves of the public banks.

Fetter's (1965, p.34) statement that the Scottish public banks held Bank of England deposits appears during his discussion of the *Restriction period (1797-1821)*. During that period Scotland, like England, was on a Bank-of-England-note standard rather than a gold standard. Given that Scottish notes were ultimately redeemable only for Bank of England notes, pyramiding on Bank of England liabilities might be expected. According to Fetter there was direct pyramiding. Fetter also says that during the Restriction period 'Scottish private banks held most of their reserves in notes and deposits of the chartered banks of Scotland'. (This may be the source of Sechrest's statement that 'much' of the reserves of non-public banks were normally so held.) This would also make some sense during a period in which gold redeemability was suspended and an alternative redemption medium was needed to maintain par acceptance among the Scottish banks. Evidence supporting or contradicting either of Fetter's statements seems to be absent from Checkland (1975), however. Fetter himself does not supply the evidence for them.

Other evidence indicates that the Scottish banks did not hold significant Bank of England deposits either during the Restriction or during other periods. In discussing the forms of liquidity held by the Scottish banks as of 1810, Checkland (1975, p.194) writes:

> 'It had become necessary to provide a secondary reserve, after specie, against a sustained run. The Scottish banks had discovered by the 1760s, if not earlier, that in times of trouble they needed assets that were readily realisable in London. They had tried various devices: seeking credits with the Bank of England, or in Holland. But they

> learned from the late 1770s that nothing served so well as a hold of good securities, of a kind that could be realised in London without serious loss. These were of three kinds: government obligations (including Exchequer Bills), Bank of England stock and East India Company stock. If these were sold, creating a credit with a London correspondent, then a bill could be drawn upon London, which could be tendered to note holders and depositors as very nearly the equivalent of specie.'

This statement will concern us again later for the light it sheds on the extent of Scottish reliance on the London money market for occasional liquidity needs. But for the present it serves to indicate that deposits with the Bank of England or other London banks were not held by Scottish banks as reserves in any quantity worth mentioning.[7]

Elsewhere, *Checkland* (1975, p.445, 453) relates the views of *Horsely Palmer* of the Bank of England, and of *Alexander Blair* of the *Bank of Scotland*, which also indicate that Scottish banks did not hold Bank of England deposits as reserves. Their views do suggest, on the other hand, that Scottish banks held BOE notes as reserves. The size of these note-holdings is unclear, but in light of the above discussion it was probably not significant. The likely rationales for reserve holdings of BOE notes (the convenience of customers travelling or remitting funds to England) suggest very small inventories. Checkland's information on the Bank of Scotland's and the Royal Bank of Scotland's balance sheets (1975, tables 39, 41-2, pp.740-42) unfortunately does not distinguish between BOE notes and notes of other Scottish banks accumulated between exchanges.

If Scottish banks did not hold Bank of England liabilities, or deposits at London banks (which in turn held Bank of England liabilities) as reserves, then the Scottish money stock was not specifically geared to the quality of Bank of England liabilities. In the long run, Scotland's money stock was determined by the quantity of money demanded at the given purchasing power of the monetary unit. The purchasing power of the monetary unit was in turn determined by global supply and demand for gold. *Cowen* and *Kroszner* (1989, pp.228-29) suggest that Scotland played the role of a 'small' country to England's 'big' country in 'a two-country model' of international finance. But surely Britain as whole was an open economy during the period of an international specie standard.

In the short run, the Bank of England could disturb the quantity of money in England significantly enough to cause cyclical effects on the price level, interest rates, and real activity, with spill-over effects on the Scottish economy. Far from being inconsistent with the free-banking view of Scotland, this view of the Bank of England's powers was first developed by the *Free Banking School* in the 1820-44 period. (The School argued in defence of Scottish free banking that cyclical disturbances in Scotland had been imported and had not originated with the Scottish banks.) The existence of spill-over effects from London to Scotland would imply that the English and Scottish economies were integrated, as the traditional view of Scottish banking has always

[7] Elsewhere, Checkland (1975, p.385) does speak of Scottish banks holding 'London reserves often yielding no interest' against their personal credit-line ('cash-account') commitments. This suggests inter-bank deposits, but he does not provide details.

recognised. It would not imply, contrary to Cowen and Kroszner (1989, p.11) that 'BOE policies effectively controlled the Scottish ... banking system', or that 'the Scottish system must be considered as a part of the overall British banking system under the aegis of the BOE'. A finding of spill-over effects of BOE actions on the United States economy, about which American writers at the time complained, would not lead one to deny the distinctness of the English and US banking systems.

3.5.2. The Question of a Lender of Last Resort

Was the Bank of England a lender of last resort for the Scottish banking system? Sechrest (1988, p.252) argues that a reading of Checkland (1975) and Fetter (1965) 'certainly seems to establish the Bank of England as the lender of last resort for the whole British Isles rather than just for England'. Cowen and Kroszner (1989, p.227) claim that 'the readiness of the BOE to act as a lender of last resort for the Scottish system provided a source of insurance'. They suggest that the Bank, acting as a lender of last resort, extended support at subsidy rates that distorted the banking system: 'The support of the BOE effectively socialised the costs of stability and redemption problems'.

To act as a lender of last resort, as Humphrey and Keleher (1984, pp.227-28) define the role, is to act as a 'backstop or guarantor ... of a fractional-reserve banking system' or to take on 'the responsibility of guaranteeing the liquidity of the entire economy'. If this definition is accepted, the Bank of England clearly was not a lender of last resort for Scotland before 1844. In a few cases the Bank provided loans to Scottish banks. But in other cases (most importantly the crises of 1825-6 and 1836-7) it refused to lend. In the case of the Ayr Bank in 1772, which Sechrest (1988, p.252) curiously cites as an example of last-resort lending, the Bank of England set such stiff terms that the Ayr Bank declined its 'support' (Checkland, 1975, p.131). Cowen and Kroszner, along with Sechrest, give as an example of last-resort lending a long-term credit the Royal Bank negotiated with the Bank of England in 1830. But Checkland (1975, p.444) adds that 'in October 1836... the Bank, as part of a general credit contraction, required the Royal Bank of Scotland to pay off its advance'. This withdrawal of credit in a time of stringency was not only much to the consternation of the Royal Bank's general manager, but contrary to the behaviour of a lender of last resort.

Sechrest (1988, p.252) cites a third supposed example of last-resort lending: 'In the crisis of 1793, a total of £404,000 was granted to several Scottish banks'. Cowen and Kroszner (1989, pp.227-28) cite the same episode. Closer reading of the sources both cite (Checkland, 1975, pp.219-20; Andreades, 1924, p.188), however, shows that the loans in question were granted not by the Bank of England, but by the government, and were granted not to the banks, but to Scottish business firms. Officials of the Scottish banks had gone to London to plead for general relief measures for Scotland, not for Bank of England loans to the banks. Cowen and Kroszner seriously misrepresent this episode when they describe it as an example of how 'the [Scottish] public banks depended upon the BOE directly in crisis times'. None of the three examples stands up as evidence of a last-resort lending policy by the Bank of England.

Fetter (1965, p.267) makes a relevant distinction between 'supporting the market *ex post*, as compared with giving assurance *ex ante* that credit would be available at some price'. The second is an essential part of the lender of last resort role of guaranteeing liquidity. Before 1844 (and apparently until the Baring Crisis of 1890) the Bank of England played only the first role, and did not do even that consistently. Fetter elaborates:

> 'Historically, in a given situation the Bank might have advanced £5 million, but the result and the expectations for the future - would be quite different if this were rationed credit, given as an ex gratia act by the Bank in a crisis, than if it had been known in advance that credit would be available at a uniform rate to all who wished it. To support the market in time of crisis is not necessarily to act as a lender of last resort in the Bagehot sense, as the action of the Bank in 1793, 1825, 1835, and 1847 had shown.'

One might question whether the loans the Bank extended were given as ex gratia acts, or whether the Bank was instead lending to make a profit. Contrary to Cowen and Kroszner, there is little reason to believe that the Bank of England extended inter-bank credit at subsidy rates that 'socialised' costs.

Because the Bank of England did not assure its willingness to lend, or even act consistently with such an assurance, it was not a lender of last resort (in the standard sense) to the Scottish system before 1844. This is not just a terminological point. The substantive point is that the Scottish banks did not rely ex ante on advances from the Bank of England as a backstop source of liquidity. Cowen and Kroszner (1989, p.227) acknowledge that 'there was no explicit obligation for the BOE to act as a central bank for the Scottish system'. Neither was there any implicit policy of acting in such a manner. Thus Cowen and Kroszner (pp.228-29) are incorrect in calling the Bank of England a 'shadow' central bank for the Edinburgh banks, and in saying that the Scottish banks faced 'incentives to... come under the wing of the Bank of England'.

In fact the Bank of England explicitly rejected the idea that it had lender of last resort obligations. Fetter (1965, pp.118-20) describes the Bank's unwillingness to extend credit during the crisis of 1826. In correspondence accompanying the Bank of England's withdrawal in 1836 of its advance to the Royal Bank of Scotland (quoted by Checkland, 1975, p.447), Horsely Palmer of the Bank of England wrote to the Royal Bank that

> '...he deemed it expedient to reduce the Bank's advances to other Banks of issue, there by making them dependent in such times upon their own respective resources. ... Every Bank of issue should be prepared to support its own circulation by its own reserve ... without requiring any issues from the Bank of England.'

3.5.3. *The Question of 'Dependence' on the London Market*

Did the Scottish banks rely on the London financial market to meet occasional liquidity needs? In one sense they clearly did. The Scottish banks held 'secondary reserves' in the form of 'good securities, of a kind that could be realised in London without serious loss' (Checkland, 1975, p.194). The ability to sell these assets quickly and at low cost for claims on London banks, which the Scottish banks could in many cases use as a redemption medium, permitted the Scottish banks to meet their liquidity needs with less specie in the vault. As Goodhart (1988, p.51) notes, it is 'clear that Scottish banks felt able to economise in some part on individual [specie] reserve holdings by being able to draw on London when necessary'.

Contrary to Goodhart (1987, p.131), however, this does not make it 'questionable whether the Scottish case is a good example of "free banking"'. In any free-banking system banks economise on their specie holdings, *inter alia*, by holding liquid securities as secondary reserves. In the Scottish case the market in which these securities could be sold happened to be outside their banking orbit. Why does that matter?

The market was outside their orbit because London was indeed Britain's financial centre, and because the Scottish banks were legally excluded from opening branch offices in London. This exclusion was an infringement of their freedom. It compelled them to use London correspondents rather than participating in London banking themselves. Thus the Scottish banks did face a legal restriction here. But this is presumably not what is at issue when 'dependence' on the London financial market is cited. Had they opened London branch offices, the Scottish banks would presumably have made similar use of the London market.

What is at issue is the significance of the Scottish banks' use of the London financial market as a source of liquidity. Goodhart (1987, p.131) makes the following argument:

> 'The Scottish banks relied on London, and ultimately on the Bank [of England], as a financial centre ... The Scottish banking system could be regarded as a satellite to the London Centre .. . I do not believe that the performance of such satellite systems really gives much indication of how a free banking system would work in a closed economy, or when its centre was shut.'

Several issues are raised in this passage, which we will consider in turn.

1. The Scottish banks did rely on the London centre in the short-run sense that at any given moment they held securities that they counted on being able to sell there. A surprise suspension of the gold standard in London clearly would affect them, as it did in 1797. But they did not rely on London in the long-run sense that Scottish access to the London market was essential to the way the Scottish banks economised on specie holdings. Alexander Blair (1926, p.51), then general manager of the British Linen Company, testified that the Scottish banks might draw gold from Hamburg if it were not available in London. Checkland (1975, p.194) indicates that they could also draw on Holland to meet occasional liquidity needs.

2. The ability of Scottish banks to borrow reserve money from foreign financial centres is consistent with, and indeed implicit in, the free-banking interpreta-

tion of Scottish banking according to a model of a small open economy whose base money (specie) is money throughout the world economy. Chapters 1 and 2 above argue for the applicability of such a model to Scotland. They do not claim that the Scottish experience provides *direct* evidence on 'how a free banking system would work in a closed economy'. Sechrest (1988, p.252) incorrectly infers that I 'apparently' believe that Scotland had 'monetary autonomy' in the strong sense proposed by Checkland (1975, pp.447-48) as an unrealistic foil.

3. The nub of Goodhart's argument for rejecting Scotland as a good example of free banking is the suggestion that in relying on the London market, the Scottish banks ultimately relied on the Bank of England as a central bank in that market. He quotes Checkland's (1975, p.432) statement that for the Scottish banks 'the principal and ultimate source of liquidity lay in London, and, in particular, in the Bank of England'. It is true that the Bank of England was the principal source of specie in London. To draw gold from London, the Scottish banks acquired and redeemed Bank of England liabilities. Concentration of London's specie reserves in the Bank of England may have distorted the market for specie somewhat. But it probably did not loosen constraints on the acquisition of specie, compared with those the Scottish banks would have faced had there been a plurality of issuing banks serving as specie sources in London. It is not true, as we have seen, that the Bank guaranteed to make reserves available to the market in times of stringency. Inter-bank loans, such as the Bank of England occasionally made, might have been at least as readily available on similar terms from competitive London issuing banks. An inter-bank loan market surely would have existed even without a privileged bank in the financial centre, and might well have been *more* active.

In the crisis of 1839 the Bank of England turned to the Bank of France for an emergency extension of credit, to meet severe liquidity needs that had brought the BOE close to suspending payments. The Bank also arranged for sizeable credits in Hamburg (Fetter, 1965, p.175). Yet no one would say that the London banking system customarily 'depended' on the Bank of France, or the Hamburg market, as a lender of last resort. Still less would anyone say that the London banking system was a 'satellite' to the Paris centre.

To borrow the words Sechrest (1988, p.252) uses in anticipating such an argument, the foregoing is intended to show that 'recourse to the London money market does not necessarily imply recourse to a central bank'. Sechrest asserts that those who would make such an argument 'need to refute Checkland's statement that the Bank of England directly controlled both interest rates and the supply of credit in London'.[8] This assertion is confused. That the Bank of England had the power (in the short run)

[8] Here Sechrest cites a page of Checkland (1975, p.447) that speaks of 'the increasingly dominant role of the Bank of England as final arbiter of British credit availability'.

to alter the total supply of credit at the margin, and thereby to disturb interest rates, does not mean that any firm drawing on the total pool of funds in London was explicitly or implicitly borrowing from the Bank of England.

3.6. Conclusion

This chapter has reviewed the principal arguments against considering Scotland before 1844 a good example of free banking. Needless to say, not all criticisms of the free-banking view of the Scottish case have been considered here.[9]

The conclusions may be summarised as follows. The traditional contrast between the freer Scottish system and the more restricted English system is warranted. The privileges of the chartered Scottish banks may have generated some small rents worth protecting, but they did not impede competition in intermediation or in the provision of inside money. The chartered banks may have played a special leadership role before 1810, but did not control, direct, or cartelise the Scottish banking industry. The Bank of England was not a lender of last resort to the Scottish system before 1844. Nor was it a central bank in the sense of providing a reserve base of high-powered money for the Scottish banks, except perhaps during the Restriction period. The Scottish banks used the London financial market to meet occasional liquidity needs, but this did not imply reliance on the good graces of the Bank of England.

At least from 1810 to 1844, then, the traditional free-banking model is valid for understanding the Scottish banking system. Correspondingly, the Scottish experience provides useful - and favourable - evidence on the performance of a competitive banking system without a central bank.

[9] For responses to the criticisms of Sechrest (1) that Scottish banking was not significantly less failure-prone than English banking; and (2) that Scottish notes were not in practice redeemable on demand, see White (1991). For fuller discussion of the argument of Cowen and Kroszner (1989) that the Act of 1765 banning the option clause profoundly distorted the evolution of Scottish payments institutions, see White (1989, 1990).

CHAPTER 4

The Free Banking Question in the British Monetary Controversies, 1800-1845

4.1. Introduction

The second quarter of the 19th century in Britain was a period of vigorous public debate and landmark legislation on a number of social and economic issues. The struggle for religious freedom was highlighted by the Catholic emancipation of 1829, the calls of dissenters for disestablishment of the Church of England, and the contest over voluntary versus government-financed and church-administered education. Demands for democratic constitutional change, unsatisfied by the Reform Act of 1832, gave birth to the Chartist movement. The Anti-Corn Law League led agitation on a remarkable scale for free trade, culminating in the 1846 repeal of the corn laws. Concern for the perceived problems of an industrialising and urbanising society fuelled the campaigns that produced the Ten Hours Act of 1846 and the Public Health Act of 1848.[1]

In this welter of controversies the 'currency question', as it was known, did not reach the popular dimensions it did in the United States, where Andrew Jackson staked his 1832 re-election campaign on his veto of the second Bank of the United States' recharter. The sizeable literature on monetary and banking reform that Britain nonetheless did produce is today likely to be of greater interest to the historian of economic thought than to the political historian. Yet it would be wrong to think that the monetary controversy and legislation of the day focussed solely on value-free questions of financial technology. At stake was the health of the entire economy insofar as it was affected by the hegemony of the Bank of England over the nation's monetary system. As were the disputes over education and free trade, the contest over the currency question was animated by differences of ideological principle.

The range of opinions aired in the debates leading up to Peel's Acts of 1844 and 1845, in the knowledgeable words of one anonymous participant (1845, p.8), 'stretched betwixt the advocates of free trade in banking, on the one extreme, and those who advocated the absolute extinction of the right of private issue on the other'. At the heart of the controversy stood the choice between free banking (unrestricted competitive supply of convertible banknotes) and central banking (currency supply controlled by a single institution).

This perspective on the period has been largely lost today. The standard 'Currency School versus Banking School' framework for recounting the debates of the era, as developed by a number of historians of monetary thought, fails to come to grips with the free banking question. Secondary accounts have correspondingly slighted a

[1] For primary material of the period, see Gash (1968); on the debate over state education in particular, see George H. Smith (1982). Smith notes that writer Thomas Hodgskin, for one, supported both voluntary education and free banking.

substantial body of free banking literature.[2] When they have noticed the advocates of free banking, they have often misclassified them as belonging to the Currency School or the Banking School.

This chapter undertakes to reinterpret the British currency debates in terms of the free banking question by bringing the neglected literature to light. It aims to show that free banking versus central banking was indeed the focal point of the monetary policy debates between 1820 and 1845. Although detailed examination of the theoretical differences underlying the divergent policy positions is left to Chapter 5, this chapter suggests that the advocates of competitive currency supply be recognised as forming a distinct and fairly coherent third body of monetary thought, what for expository purposes we may reasonably call the Free Banking School. The school's most noteworthy spokesmen and contributors in this period were Sir Henry Parnell, Samuel Bailey, and James William Gilbart. Others were Alexander Mundell, Robert Mushet, Thomas Hodgskin, Edward Edwards, John Easthope, Peter Watt, Francis C. Knowles, Robert Bell, W. B. Brodie, J. B. Smith, G. M. Bell, and Henry William Hobhouse. Important 'fellow travellers' with the school were Sir John Sinclair, G. Poulett Scrope, Robert Torrens, and James Wilson.

The bullionist controversy was concluded for all practical purposes in 1819 with a parliamentary decision in favour of resuming gold redeemability for Bank of England notes.[3] Thereafter, the overriding concern of British writers on money and banking was with the causes of and cures for the general business fluctuations that repeatedly beset the economy. The differences of opinion among the three schools of thought on this issue may be summarised as follows.[4]

[2] See Viner (1937), Daugherty (1942-3), Morgan (1965), and Mints (1945). The eclecticism of Fetter (1978) and the oblique treatments of Wood (1939) and Coppieters (1955) are only a little more helpful. Only Vera Smith (1936) has treated the controversy in terms of the free banking-central banking issue. Because she surveys the debates not only in Britain but also in France, Germany, and the United States, her account of the British debate is understandably far from comprehensive. Ludwig von Mises, himself an advocate of free banking, discusses the period (1928, pp.144-45; 1966, pp.436, 448) with only a passing reference to the existence of a free banking literature. Henry Meulen (1934, pp.118-26), an advocate of 'free banking' without specie redeemability (for a secondary account, see Dowd, 1992b), briefly discusses the debate preceding Peel's Act without mentioning the free banking literature.

[3] The opponents of the gold standard, led by Thomas Attwood of Birmingham, continued to publish a sizeable number of pamphlets each year. We shall here follow the practice of their contemporaries by neglecting their contribution to the debate. Hawtrey (1928, pp.64-81) provides an able exposition of the views of the Birmingham School.

[4] Contrast our approach with Mints's (1945, pp.75, 86) capsule summaries of Currency and Banking School tenets. He includes neither trade cycle theories nor legislative proposals among the essentials of the schools' positions.

Mints (pp.109-15) spends several pages on arguments for and against competition in banking (including, but not limited to, note-issuing), but regards these arguments as having been made 'more or less independently of the central issues in the banking and currency school controversy'. By doing so he divorces the 'banking and currency school controversy' from the central policy question under consideration. It is true that competition in note issue was not a matter of contention between the Currency and Banking Schools - both were friendly toward the Bank of England's monopoly - but that fact suggests only the inadequacy of the narrow Currency School-Banking School framework for dealing with the policy debate.

The Currency School of Samuel Jones Loyd (Lord Overstone) and J. R. McCulloch held a partly monetary theory of trade cycle causation that charged both the Bank of England and especially the country banks with disequilibrating conduct in issuing bank notes. The Banking School of Thomas Tooke and John Fullarton traced fluctuations in trade to non-monetary causes, essentially exculpating both segments of the note-issuing industry. The Free Banking School developed a monetary theory of the cycle that, unlike the Currency School theory, distinguished between the disequilibrating capabilities of the Bank of England and those of the country banks. They argued that the Bank of England, as a bank of central monopoly status, held the power to cause monetary disturbances by arbitrarily altering the volume of currency in circulation. The country banks, their behaviour constrained by competition, lacked that power. To contrast the three positions even more summarily: Whereas the Currency School held that any bank could over-issue, and the Banking School that no bank could over-issue, the Free Banking School held that only a central bank like the Bank of England could over-issue.

As a cure the Currency School advocated centralising control of the currency supply by eliminating the country banks' right of issue. Central control was thought necessary in order to regulate the volume of currency according to a specific designed rule, termed the 'currency principle'. The Banking School had no essential legislative programme. Tooke, however, was (until the tail-end of the debate) unreservedly hostile toward the idea of free banking for London. Members of the Free Banking School proposed ending the Bank of England's monopoly power by opening its London domain to rival joint-stock banks of issue. They hoped thereby to subject the Bank of England to the salutary discipline of competition. Debate focussed on the proposal to open London to plural issuers for the greater part of two decades, though modern accounts of the period's monetary controversies have scarcely mentioned the proposal.

4.2. The Heritage of Adam Smith

To set the stage for the monetary controversies of 1800-45, it is necessary first to go back to 1776. Although the programme of the Currency School clearly had its roots in Ricardo's monetary tracts, the doctrinal ancestry of the Free Banking School may be traced to Book II, Chapter II of Adam Smith's *The Wealth of Nations*. Such free banking advocates as Alexander Mundell (1823, pp.4-5), Thomas Hodgskin (1827, p.215), Sir Henry Parnell (1827, pp.73, 85, 87), and G. Poulett Scrope (1832, pp.439-40) were fond of invoking Smith's authority on money and banking.

Smith (1976, Vol.1, pp.309-16) emphasised the social capital savings that banks of issue brought about by substituting paper for precious metals as hand-to-hand currency. Scotland, with its rapid growth since the introduction of bank notes, served as a ready example of such savings at work. He saw (p.350) three definite advantages in having a multiplicity of issuers: (1) 'The rivalship of so many competitors' and the threat of adverse clearings in relation to them makes each issuer more prudent not to extend his note circulation beyond the proper level, based on his specie reserves; (2) the failure of any one bank is of lesser consequence; and (3) competition for business forces banks to offer more liberal terms to the public.

Smith's policy conclusion at chapter's end was simply an endorsement of the *status quo* of Scotland: free banking, subject to the two restrictions imposed by the Act of 1765. He wrote (p.350):

> 'If bankers are restrained from issuing any circulating bank notes, or notes payable to the bearer, for less than a certain sum; and if they are subjected to the obligation of an immediate and unconditional payment of such bank notes as soon as presented, their trade may, with safety to the public, be rendered in all other respects perfectly free.'

Smith (p.320) saw the volume of notes in a plural issuing system, where each issuer pursued his individual self-interest with some foresight, as self-regulating. Nowhere did he suggest a rationale for central banking.

4.3. The Free Banking Question in the Bullionist Controversy, 1800-1820

The literature of monetary theory and policy in the first two decades of the 19th century revolved around the bullionist controversy. The primary policy question at hand was when to resume the right of holders of Bank of England notes to redeem their notes for specie, a right that had been suspended in 1797. Theoretical debate focussed on the relationship of the suspension to the subsequent fall in the value of the pound. The question of free versus central banking was nonetheless touched upon by several participants in the controversy in their discussions of the role of country banks in the English banking system.[5]

Walter Boyd (1801, pp.19-24) defended the country banks from the charge that their actions were partly responsible for the depreciation of the irredeemable pound. He explained that the country bank notes, being convertible into Bank of England notes, were closely regulated in their quantity by the quantity of the latter that the country banks held as reserves. Boyd's position, that redeemability alone was sufficient to regulate the volume of notes issued on a decentralised basis, implied that centralisation of the note issue was at best unnecessary. Boyd in fact proposed that the Bank of England be subject to the discipline of competition from a new rival bank of issue to be established in London (see Thornton, 1802, p.44).

The Smithian tradition was explicitly upheld by the anonymous author (1802, pp.106-09) of *The Utility of Country Banks Considered*. This pamphleteer cited Smith on the capital savings from paper bank notes, adducing Scotland as an illustration, and reiterated the virtues of multiple issuers.

Henry Thornton (1802) broke from the Smithian tradition in his *Paper Credit of Great Britain*. He explicitly denied (pp.206-08) that the note issue in a free banking system would be self-regulating in the way Smith supposed, though he agreed

[5] For an able review of the position of Thornton, Ricardo, and the bullionist committee and its contrast with the position of Adam Smith, see Joplin (1832, pp.32-43). Joplin unfortunately lumps Boyd and King, whom he admits not having read, together with the other bullionists.

(pp.208-11) with Boyd that the volume of country paper was regulated by that of London paper. Favouring the discretionary use of its power by the Bank of England in times of external drain (pp.152-53), Thornton viewed with alarm (pp.115-16) the possibility of rival issuers in London, since those rivals would strip the Bank of England of its power to regulate the metropolitan circulation. He also argued (pp.126-27) that a system of competitive issuers in London would lead to over-economisation of gold reserves, each issuer supposedly depending on the others for specie and none 'taking upon itself the superintendence of general credit'.

Thornton evidently did not conceive that the task of regulating the volume of convertible bank notes could be left, as it was in Scotland, to the invisible hand. In considering the proposal to establish a rival to the Bank of England, he commented (p.228) that

> '...we derive a material advantage from the power enjoyed by the Bank of England of exclusively furnishing the paper circulation of the metropolis. To this very circumstance the bank stands indebted for its faculty of regulating all the paper of the kingdom. On the bank is devolved the task of providing guineas for the whole country: with the bank is lodged the power of so restricting the general paper, as to render bullion purchasable, except in some extraordinary cases of alarm or difficulty.'

In such extraordinary cases of alarm, when (it had been the main thrust of Thornton's book to argue) a suspension of payments was justifiable and expedient, the monopoly of the Bank of England again served the nation in good stead.[6] It gave the Bank the power and the undivided responsibility over the stock of base money necessary for controlling the national volume of paper currency, and thereby gave it the means of sustaining the purchasing power of the nation's money (pp.228-29):

> 'If a rival institution to the Bank of England were established, both the power and the responsibility would be divided; and, through the additional temptation to exercise that liberality in lending, which it is the object of competition to promote, the London notes, and also the country bills and notes, would be more liable to become excessive.'

In enumerating the advantages and disadvantages of country banks, Thornton (pp.174-82) was particularly critical of their susceptibility toward redemption runs in times of alarm and the consequent burden they placed on the Bank of England's specie reserves. Nowhere did he stop to consider that the instability of the country banks was the consequence of the way in which the Bank of England's monopoly had been secured. Though he noted in passing (p.112) that the Scottish banks had been free of redemption runs in 1797 due to their 'peculiar respectability', he did not inquire as to why the English country banks lacked such respectability. Nor did he examine whether the 'general credit' of Scotland in fact suffered, as under his theory it should have, for lack of a privileged superintendent. The contemporary assessment of Thornton's views

6 It might be noted that Henry Thornton's older brother Samuel was a long-time director of the Bank of England and its governor from 1799 to 1801. See Thornton (1802, pp.14-15).

by Glasgow banker Scott Moncrieff (quoted in Anonymous, 1960, p.44), upon learning of Thornton's plans to write on paper credit and banking, was therefore not unfair:

> 'I dare say Henry's pamphlet will be sensible, but they will be English ideas and in the subject of Banking, these Englishers have no conception of our Scots system. There is no dinning into the head of an Englishman just ideas on Scotch Banking.'

Lord Peter King (1804, pp.108-24), coming to the defence of country banking in his works on the effects of the suspension of specie redeemability, rebutted Thornton's charge that the country banks' occasional demands for specie had unfairly burdened the Bank of England. He pointed out, as Walter Bagehot (1873, p.49) would much later in the century, that the one-reserve system of England had resulted from the legal monopoly given by Parliament to the Bank. He went on to commend Thornton, to whom he aptly referred as 'the most able and judicious of [the Bank's] advocates', for acknowledging that the country banks were not responsible for the depreciation of the pound.

King propounded Smith's doctrines anew. To King the very emergence and existence of the country banks in a free market showed that they provided services valuable to the public. These benefits could not be adequately provided by a solitary national bank of issue. To the benefits of plural issues enumerated by Smith, he added two advantages of decentralised issues: (1) Local issuers provide more trustworthy notes, preventing forgeries by their local vigilance; and (2) local issuers offer greater convenience and security of redemption. King went considerably beyond Smith in spelling out theoretically the self-regulating mechanism at work in a free banking system. And he went beyond Smith in his explicit policy conclusion in favour of free banking and against the monopoly of the Bank of England. Given the beneficial nature of the country banks,

> 'to suppress the circulation of their notes, or to restrict them in any manner tending to give an exclusive privilege to the Bank of England, would be as unjust and impolitic as to grant a monopoly of any other branch of skill and industry to any private merchant or company. When we consider the nature of the banking system, of all other branches of trade the most complex and delicate and deriving its very essence and existence from the confidence of the public, it will appear that there is no subject upon which legislative interference would be more improper or more pernicious.'

David Ricardo shared none of King's *laissez-faire* attitude toward the note-issuing aspect of the banking industry. Far from seeing it as a complex and delicate thing, he evidently thought paper currency so simple a matter as to be suitable for centralised provision according to a few simple designed rules. His attitude toward the institution of gold redeemability - regarding it as though it were a device that had been designed by someone with specific ends in mind naturally led him to consider redesigning it in a more efficient way. In his 1816 *Proposals for an Economical and*

Secure Currency, Ricardo (1951, pp.65-73) argued that the ends of redeemability[7] could be accomplished more cheaply through redeemability of Bank of England notes for bars of bullion rather than for coin, with country bank notes redeemable only for Bank of England notes. The issue of bank notes was furthermore one of those 'very few exceptions' to the doctrine of 'the liberty of trade' where 'the interference of Government may be beneficially exercised' to prevent fraud, by requiring a security deposit from country note issuers.

In his *Plan for the Establishment of a National Bank*, published posthumously in 1824, Ricardo (1951, pp.276-97) went still farther in his redesigning of monetary institutions. The right of note issue was to be stripped from both the Bank of England and the country banks and lodged exclusively with a state-run National Bank that performed no other banking operations. The stated motivation for the entire operation (p.281) was a monetisation of government debt. Ricardo's plan embodied already, in a more radical form, two of the leading features of Peel's Bank Charter Act of 1844: restriction of the right of private note issue and separation of issuing from other banking functions in the privileged public bank.

4.4. The Free Banking Question and the Joint-Stock Banking Question, 1821-1833

The movement for freer banking competition in England began in earnest, naturally enough, in the form of agitation on behalf of Scottish banking principles. Let us briefly review the contrast between English and Scottish banking as of 1820. The monopoly privileges of the Bank of England had been secured since 1708 by an Act of Parliament limiting other banks of issue in England and Wales to not more than six partners. The Bank had no offices outside London, where it was the sole issuer. Its notes circulated only in the London vicinity and Lancashire and made up one-half to two-thirds of the stock of notes in circulation for England as a whole. The business of supplying bank notes to the English countryside was left to a host of small and weak local partnerships. Bankruptcies and stoppages among these country banks were alarmingly frequent. Scotland, by contrast, had no central bank of issue. Free of the six-partner rule, the industry was characterised by strong branched banks whose notes circulated extensively. The large joint-stock banks became increasingly conspicuous after 1810. Their failure rate was remarkably low.

The six-partner rule thus had two unintended consequences that drew the attention of banking reformers: (1) The banks outside London were artificially stunted and failure-prone; and (2) the Bank of England as sole London issuer occupied a position of unrivalled hegemony over the currency system as a whole. Discussions of freer banking competition correspondingly encompassed two related but distinct questions: (1) *the joint-stock banking question*, that is, the question of an unrestricted number of partners for firms in the provincial banking industry; and (2) *the free banking question*, that is,

7 It is clear that the ends Ricardo (1951, pp.65-66) had in mind were not simply the ends pursued by money users themselves. He was prepared to deny gold coins to the public even though he recognised that to do so was to contravene public demand.

the question of an openly competitive supply of bank notes, which in the English context was the question of open entry of joint-stock banks of issue into direct competition with the Bank of England in London. Writers advocating joint-stock banking only for the countryside emphasised the problem of country bank failures. Those advocating free banking emphasised the problems of business cycles more broadly. On both questions the experience of Scotland was consulted, for Scotland had both free banking and joint-stock banking. The six-partner rule meant that England had neither.

The earliest public champions of joint-stock banking for England were James Mill in 1821, Thomas Joplin and Sir John Sinclair in 1822, and Alexander Mundell in 1823 and 1825, though the bullionist MP William Huskisson (see Hilton, 1977, p.55) had favoured legalisation of joint-stock banking as early as 1818. Mill (1821, pp.110-27), briefly discussing the drawbacks of paper money in his *Elements of Political Economy*, argued that free competition with unrestricted partnership size would alleviate the problem of bank failures and attendant dishonouring of bank notes. He cited Scottish experience as demonstrating that unrestricted competition from sound issuers would drive out unsound issuers. Joplin (1822), in a pamphlet frequently republished (see Joplin, 1826a), marvelled at the freedom of Scottish banks from the bankruptcies continuously befalling English banks. He attributed the difference to the joint-stock basis of the Scottish establishments. Neither Mill nor Joplin proposed free banking. Mill (1821, p.113) on the contrary stated explicitly what was implicit in Ricardo: The issue of notes was so simple that it might just as well be conducted by government.

Sinclair (1822, pp.17-20), on the other hand, lauded the competitive arrangement of the Scottish banking system as much as the soundness of its banks.[8] He combined his praise for Scotland's plural note issue with a direct attack on the Bank of England's monopoly status. He suggested that a competitive banking system provided for self-regulation of the currency, in contrast to the ability of a monopoly bank to over-issue. All monopolies were mischievous, he thought, but a single corporation in command of the circulation and credit of a great empire was pernicious in the highest degree. Sinclair nonetheless fell short of proposing free banking in the strict sense of open entry into note-issuing. He favoured plural chartered banks rather than unlimited entry, and still conceived of a central reserve-holding role for the Bank of England in order to allow variation in the bullion content of the pound. His overriding concern was with preventing deflation (or promoting inflation), and it was toward that end that he favoured plural issuers.[9]

Alexander Mundell (1823), a Scottish practitioner before Parliament, initially joined the clamour for repealing the six-partner rule in order to extend the benefits of Scottish joint-stock banking to the English countryside. Repeating his praise for Scottish banking two years later, Mundell (1825, pp.157-82) shifted to a more radical free banking position in favour of nationwide repeal.

8 Sinclair credited free banking with contributing to Scotland's rapid growth rate, as has Cameron (1967, Chap.3) more recently.

9 Because he was not nearly so concerned with preventing inflation, he can be considered an inflationist. See, for example, Sinclair (1819) and (1829). Sinclair had been a tireless promoter of agricultural interests as a long-time member of Parliament, 1780-1811.

Joplin's appeals to the public gave added impetus to the passage of the Act of 1826, which repealed the six-partner rule for banks of issue situated at least 65 miles from London. The Act also encouraged the Bank of England to open branches in the countryside (on the model of the Scottish banks), and raised to five pounds the minimum bank-note denomination. The Bank of England retained its monopoly of the metropolitan circulation,[10] which Joplin (1841, pp.63-64) had no intention of eliminating. Joplin (1826a, pp.41-43) meant only to secure the Bank's monopoly in a way more sensible than the stunting of country banking. Like the Currency School, of which he may be considered a peripheral member, he opposed unrestricted competition in note-issuing while favouring unrestricted competition in other aspects of banking.

The continuation of the Bank of England's legal monopoly over the London circulation was in serious question in the minds of the government ministers responsible for framing the Act of 1826. Lord Liverpool and Frederick John Robinson commented in a January 1826 letter to the Bank's directors (BSP, 1826b, p.4):

> 'With respect to the extension of the term of their exclusive privileges in the Metropolis and its neighbourhood, it is obvious ... that Parliament will never agree to it. Such privileges are out of fashion, and what expectation can the Bank under present circumstances entertain that theirs will be renewed?'

Two parliamentary advocates of free banking, Joseph Hume (*Hansard*, 1826, XIV, col. 161) and G. Poulett Scrope (*Hansard*, 1833, XVIII, col. 1,318) registered their concurrence with the ministers' sentiment. Commercial bankers evidently took seriously the ministers' forecast of non-renewal of the Bank of England's charter. James William Gilbart (1828, p.61) reported that, given the restrictions against joint-stock banking left in place by the Act of 1826, 'large capitalists have deemed it more prudent to wait until after the bank charter has expired, in 1833, before they engage in the establishment of an opposition bank'. Contrary to the forecast, however, opposition to renewal of the bank charter was to be distinctly a minority sentiment within Parliament.

In the aftermath of the crisis of 1825-6, Sinclair renewed his theme. He was joined in print by Robert Mushet in 1826 and Sir Henry Parnell and Thomas Hodgskin in the following year. Sinclair defended the Scottish banking system in an exchange of letters with Thomas Attwood (1826), the Birmingham advocate of inconvertible paper money. Competition was still the corrective for the excessive power over the circulation that allowed the Bank of England to affect trade, prices, and the distribution of wealth (p.65): 'The only remedy is, the extinction of so odious a monopoly, and the establishment of another Bank, by whose rivalship, such enormous powers may be kept within due bounds.'

10 A similar monopoly limitation had been made with respect to the Bank of Ireland in 1821. Lord Liverpool (BSP, 1822) had already secured the Bank of England's reluctant consent to the arrangement in 1822. For contemporary recognition of the Irish arrangement as a precedent, see Taylor (1824, pp.138-39) and Joplin (1822, p.26). For secondary accounts, see Clapham (1945, Vol.2, pp.87-88, 92-107), and Barrow (1973, pp.61-65). The radius of monopoly for the Bank of England was drawn at 65 statute miles so as to equal the 50 Irish miles given arbitrarily to the Bank of Ireland.

Mushet (1826), a clerk at the Mint and a veteran bullionist, blamed the Bank of England for creating the boom-bust cycle through over-expansive policy that had inevitably to be later reversed. The country banks were innocently swept up in the expansionary and contractionary processes. He developed his cycle theory in some detail. He then proposed a number of measures as remedies within the existing structure of the English banking industry. Not until the very end of his work (pp.203-07) did Mushet reveal that he looked forward to radical structural reform in favour of free banking.[11] The provisions of the Act of 1826, though beneficial, were no remedy for the 'main evil' of the system, 'because they do not take the power from the Bank of England of adding extensively to the currency'. True relief from 'the unwholesome state of the currency' would arrive only with free banking: 'When the monopoly of the Bank expires, and the trade in money is perfectly free, a better order of things may arise.' The rate of interest would become steady; the circulation would remain ever at its proper level; prices, capital values, and wages would stabilise; and the boom-bust cycle would become a thing of the past.

Parnell's advocacy of free banking was unmistakable. Parnell was an active liberal Whig MP and, like Mushet, had been a prominent bullionist. In 1826 he criticised in Parliament (*Hansard*, 1826, XIV, cols. 391-3) the Bank of England's 'exclusive and mischievous privilege'.[12] He pushed free banking principles within the Political Economy Club (Higgs, 1921, pp.27, 28), an important discussion group founded in 1821 to promote free trade opinion. In 1826 and again in 1827 he put the question, 'Might not a proper Currency be secured by leaving the business of Banking wholly free from legislative interference?' Putting his views into print in the latter year, Parnell (1827, p.20) saw himself as the first author to point to free banking as the antidote for the Bank of England's 'uncontrolled power over the circulation'. He made no reference to Sinclair's works. Although he cited Mushet, Parnell appears to have overlooked the paean to free banking hidden on the last two pages of his pamphlet. Parnell's should indeed be considered the first major work of advocacy by the Free Banking School.

Like Mushet, Parnell (1827, p.24) criticised the Act of 1826 as 'a feeble attempt to reform the country banks alone' that left untouched 'the greater evil to be remedied in the institution of the Bank of England'. Unlike Mushet, he was not content to wait for the Bank's charter to expire (pp.98, 118-19). The power of the bank over the currency, and thereby over prices and the state of trade, was 'so entirely repugnant . . . that it ought not be tolerated any longer'. The remedy was 'a free system of banking,' which would properly regulate the volumes of credit and currency.

Parnell relied heavily on Mushet and other authorities in attributing the distress of

11 It is thus not surprising that Daugherty (1942-3, p.143) groups Mushet with precursors of Currency School doctrine on the basis of his interim proposals. He did stress the virtues of a purely metallic currency, as the Currency School would. He ultimately saw free banking and not central banking, however, as the way to reproduce those virtues in a mixed currency (Mushet, 1826, pp.206-07).

12 On this criticism, see Fetter (1980, pp.101-02). Parnell (*Hansard*, 1824, X, cols. 232-3) had already moved for an investigation of the Bank of England's charter in 1824. Fetter unfortunately lumps Parnell together with parliamentary critics of the Bank of England who wished to establish a state bank in its stead.

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1826 to the Bank of England's over-issues of 1824-5. Fundamentally at fault was the banking law (pp.35-37) that had released the bank from 'the great check over abuses in issuing paper money, namely, the competition of rival banks'. He bolstered his case throughout with evidence from the working of free banking in Scotland.

Thomas Hodgskin (1827, pp.178-218), later notorious as a radical defender of working-men's rights, made a case for free banking, as Lord King had, on the basis of a general *laissez-faire* philosophy.[13] Money differed in no intrinsic way from any other commodity - what set money apart was only the history of government monopolisation of it - and so competitive market provision was natural. This was true of coins and *a fortiori* of bank notes. Bankers and bank notes 'are a necessary part of that great social system of production which is not the offspring of legislation; and they therefore do not require, in any manner or degree, to be regulated by the legislator'. Hodgskin went on to argue that under a free banking system the currency supply would be self-regulating. The Bank of England, on the other hand, was powerful enough to have caused the crisis of 1825-6, and in fact had 'already done inconceivable mischief'. Hodgskin was particularly critical of the pretence of knowledge behind legislative attempts to regulate the issue of bank notes.

The advocates of a single bank of issue were quick to deny the lesson favourable to unrestricted note issue drawn from Scottish experience. The prolific economist J. R. McCulloch (1826a, pp.281-85) attacked a pamphlet published in 1825 that evidently had made a case for free banking based on Scotland's success with it.[14] He agreed that joint-stock banks would be more secure than existing English country banks. But he denied strenuously the claims of 'the eulogists of the Scotch system' that a competitive issuing system would eliminate monetary disturbances. He later argued (1831, p.49) that in fact the 'free system' would 'aggravate them a thousand fold'. He considered freedom of entry into the note-issuing industry (1826b, p.88), or more concretely the over-issues of the country banks (1837b, p.169), to have been the leading cause of the panic of 1825. McCulloch included an influential critique of competition in issuing among the supplemental notes to his 1828 edition of Adam Smith's *Wealth of Nations* (1828, Vol.4, pp.255-314). *Sir Robert Peel* (1853, p.649) in 1828 expressed in Parliament his fear that a Scottish-style plural money-issuing industry, especially where small notes were permitted, was subject to inherent instability.

G. Poulett Scrope (1832, pp.549-51), an amateur economist whose many pamphlets earned him the nickname 'Pamphlet Scrope' while a member of the House of Commons, and *Parnell* (1833, pp.71-97) responded to McCulloch with sharp counterattacks against the Bank of England's policies. They also offered sharp and somewhat less sharp rebuttals respectively to his scenario of inherent instability in a competitive

13 For discussions of Hodgskin's life and his views on subjects other than banking, see Halevy (1956) and Driver (1949). Hodgskin later wrote for *The Economist*, where he may have had some influence, direct or indirect, on three of the periodical's other prominent writers: James Wilson, Herbert Spencer, and Walter Bagehot.

14 That pamphlet, *Thoughts on Banking*, seems to be no longer extant.

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Passage of the Act of 1826 did not stop the appeals on behalf of Scottish joint-

[13] See Edwards (1830a, b), Scrope (1830a, pp.6-9), Mundell (1830, pp.10-12), and Anonymous (1832b).

stock banking,[15] as few joint-stock banks were established until lingering impediments were removed by Parliament in 1833. The success of the Scottish system continued to be cited by almost every advocate of freer banking and note-issuing competition in England and to be explained away or denied by almost every opponent. One anonymous pamphleteer (1832a, p.50), concerned to defend the country banks against the incursion of joint-stock competitors, complained that the contrast between the instability of the English system and the stability of the Scottish system 'forms the basis of every suggestion and recommendation of the Government, the text for every commentary of the essayist, and the ground for every banking scheme of the speculative and visionary'. Parnell (1833, pp.62-76) took the trouble to rebut the criticisms of Scottish banking made by this pamphleteer and by McCulloch (1831). Henry Burgess (1826, pp.44-47) and John Milford (1826, p.9) also took sideswipes at the Scottish system in their attempts to defend the country banking *status quo*. Milford testified to the extent to which Scottish banking had captured the public imagination, noting that 'many reflecting and well-intentioned men are for ever filling the columns of newspapers with descriptions of the advantages and security of Scotch Banks'.

4.5. The Free Banking Question Takes Priority, 1826-1843

The important debate, however, now focussed on the Free Banking School's proposal to open London to joint-stock banks of issue. In defending themselves by petition against the incursion of Bank of England branches authorised by the Act of 1826, the Committee of Country Bankers - perhaps trying to enlist popular anti-monopoly sentiment - adopted a free banking standpoint. In 1828 the committee memorialised the government (BSP, 1833c) concerning the upcoming renewal of the Bank of England's charter

> 'that no special privilege or monopoly be granted or continued to the Governor and Company of the Bank of England: but that they may be placed on a perfect equality with the country bankers in the competition which, by means of their branches, they are now carrying on with your memorialists'.

Placing the Bank of England on equal terms in the countryside implied placing other banks on equal terms in the City. In 1831 Parnell narrowed his Political Economy Club (Higgs, 1921, p.38) discussion question to this proposal: 'Is it expedient to continue the regulation which prevents a London Banking Company from issuing Notes if it consists of more than six partners?' McCulloch (1831, p.42), anonymously defending renewal of the Bank of England's monopoly charter in the same year, framed the issue in a similar way. In view of the Act of 1826,

> 'the practical, or rather, indeed, the only questions for consideration, with reference to this subject, are, whether the privilege of issuing notes in London should be conceded to all individuals, or ought it to be confined, as hitherto, to some one body? and if the latter,

whether that one body should be the Bank of England?'

Criticism of the Bank of England was growing more intense. John Wade's (1831) influential exposé of government patronage and other abuses, *The Extraordinary Black Book*, featured a chapter sharply denouncing the bank's monopoly status and concluding with a call for Scottish-style free banking in London. The 'Old Lady of Threadneedle Street' herself complained in her 'autobiography' (Reid, 1832, p.iv) of

> '...the repeated, I may say, incessant attacks to which I have been subjected by the quarterly, monthly, weekly, and daily press, for sometime back; as if all the printers' devils, that have been collecting in Pandemonium since the art of printing was invented to the present time, had been let loose to run an old woman down'.

Free banking opinion posed a serious enough threat to the Bank of England's monopoly that J.P. Winter (1832, pp.27-29), one of the Bank's proprietors, advised his fellow shareholders that it might be expedient to give up the Bank's exclusive issuing privilege, in exchange for a 'reasonable equivalent' in the form of increased commissions from the government. By freeing the Bank from the odium of monopoly, Winter suggested, its other advantages could be secured.

The secret committee appointed by Parliament in 1832 to inquire into the expediency of renewing the Bank of England's charter (due to expire in 1833) gave the free banking issue top priority (BSP, 1831-2, p.3):

> 'The principal Points to which they have directed their attention, are- *First*. Whether the Paper Circulation of the Metropolis should be confined, as at present, to the Issues of one Bank, and that a Commercial Company: or whether a competition of different Banks of Issue, each consisting of an unlimited number of partners, should be permitted.'

The committee solicited voluminous testimony, mostly from witnesses favourable toward monopoly of the London circulation. The Bank of England's privileges were defended by Bank of England directors John Horsley Palmer, Jeremiah Harman, and George Warde Norman; by London bankers and financiers George Carr Glyn, George Grote, Samuel Gurney, Samuel Jones Loyd, N. M. Rothschild, and Thomas Tooke; and by Thomas Attwood. Competition in London note-issuing was urged only by Manchester bankers John Benjamin Smith, Joseph C. Dyer, and James Burt and by stockbroker John Easthope. Parnell (*Hansard*, 1833, XVIII, cols. 1,330-1) later complained with some justice 'that the whole of [the committee's] inquiry and evidence was *ex parte* and one-sided'. Of the committee's parliamentary members, only he opposed renewal of the Bank of England's charter. He had additional anti-Bank

16 This case of bias on the part of a parliamentary committee of inquiry of this era was not an isolated one. See, for example, Hutt (1954) for an account of the bias of Sadler's committee of 1832 on the factory system. I am indebted to Professor R. M. Hartwell for this observation and reference.

17 This exchange has been noted by O'Brien (1970, p.181, n. 4) in the course of his meticulous review of McCulloch's writings on currency and banking.

of England witnesses ready whose testimony had never been heard due to manoeuvrings by the Chancellor of the Exchequer, Lord Althorp.[16]

Alexander Mundell (1832a, b) was the most prolific of the free banking partisans in the ensuing debate over the published committee testimony. He directed much of his fire toward Tooke's attempt to defend a monopoly of issue on the grounds of lesser risk of over-issue and greater convenience. Mundell (1832a, pp.44-58) argued that a competitively disciplined system of joint-stock issuers in London would be less prone to over-issue than the monopoly system of the Bank of England. Competition would prove more convenient to all but perhaps the 'bankers and bill brokers in London and Westminster' who had testified against it. G. Poulett Scrope (1833a, pp.56-57) commented on the London bankers' self-serving testimony in a similar vein: 'The anxious solicitude of the bankers, lest the public should injure itself by deserting their counters, is indeed rather amusing.' Undecided as to the best practical answer, although extolling the virtues of free banking in principle, Scrope recognised that the primary question in banking reform was '*unity* or *rivalry* in the paper-issue of the metropolis, perhaps, of the kingdom'.

J. R. McCulloch (1833) reviewed the testimony together with Mundell's pamphlet from a pro-Bank of England monopoly standpoint. At the same time he defended his own earlier anonymous pro-Bank of England pamphlet (McCulloch, 1831) from Parnell's (1833) attack. Mundell (1833b) in turn reviewed critically McCulloch's review.[17]

In his speech before Parliament (*Hansard*, 1833, XVIII, cols. 172-4) on the Bank Charter Act of 1833, the Chancellor of the Exchequer, Lord Althorp, depicted the Act as setting a conscious policy course toward central banking rather than toward free banking:

> 'The question, therefore, I call for the House to decide is, whether it is most desirable that the management of the circulating medium of the country should be conducted by a single body, as a bank of issue, or by the competition of different banks.'

After discussing the questions of over-issues and lender of last resort at some length, he concluded by opting for a rule-bound central bank:

> 'My opinion is, that if you can contrive an adequate check upon the conduct of a single bank, it will be more advantageous that such single bank should manage the circulation of the country, than that it should be left to the competition of different and rival establishments.'

Passage of the Act indicated that Parliament was willing to follow the course toward central banking.

Mundell (1833a) sounded the alarm against the Act of 1833. Although part of the Act eased restrictions on entry of joint-stock banks, another part made Bank of England

18 For the text of the Act, see Gregory (1964, pp.19-27).

notes legal tender for the redemption of country bank notes, thus reinforcing the role of the Bank's notes as high-powered money.[18] Mundell pointed out that the Act would exacerbate the tendency, originating in the Bank's exclusive privileges, for the Bank to be practically the sole holder of specie reserves in England. His rhetoric (p.3) took on a positively Ciceronian cast:

> 'How long, O Englishmen! will you continue blind to the want of sound information in the Ministers and legislators of your country ...? Your industry, which has been already grievously taxed by the exclusive privileges of the Bank of England as it now exists, is thus to be taxed still more by extension of it.'

The Committee of Country Bankers, chaired by H. W. Hobhouse, was similarly indignant over the Act of 1833. They complained (BSP, 1833d) in a memorial to the Chancellor of the Exchequer, Lord Althorp, that the Act would 'violate private rights, and secure to the Bank of England an unjust and perpetual monopoly'. The memorial noted perceptively that although the chancellor had 'taken the self-interest of the Country Banks to be an element of so much danger, from its tendency to induce them to extend their issues,' he disregarded 'the operation of the same principle' when exercised by the Bank of England in a manner unchecked by competition. A convention of the country bankers (see Lloyd, 1833, pp.7-9) adopted resolutions embodying the same sentiments.

A fresh round of literature appeared in the wake of a period of 'pressure' on the money market in 1836-7. A pamphlet by Bank of England director John Horsley Palmer (1837) attracted many replies. Palmer tried to exculpate the Bank of England by pinning blame for the crisis primarily on an over-extension of currency and credit by the newly formed joint-stock banks. He insisted (pp.46-49) that reforms 'based on the example of Scotland' were 'founded in error' and took a firm anti-competitive stand. He considered the public question (p.51) to be whether the sphere of the Bank of England should be enlarged or contracted; for his part he cited (pp.41-42) the advantages of having a single bank of issue for all of Britain and Ireland.

W. Bennison (1837, pp.2-4) replied that over-issues by the Bank of England 'were the cause of derangement', despite Palmer's denial. He remarked that Palmer's opinions were merely those of a monopolist trying to frighten the public and the legislature as to the danger of tampering with his monopoly. Bennison did not, however, suggest free banking as an alternative. Sir Francis C. Knowles (1837) did propose Scottish-style free banking in his rebuttal to Palmer's pamphlet. Knowles argued that a competitive system of plural issuers would not be given, as the Bank of England was, to such sudden and disruptive changes in discounting policy as had caused the 1836 crisis. John Cook (1837) responded to Knowles with a defence of the Bank of England as a neces-

[19] See Wood (1939, pp.3-27) for a thorough treatment of the controversy concerning the extent of the Bank of England's control over the country circulation.

[20] See Bailey (1825) and Rauner (1961). Bailey was chairman of the Sheffield Banking Company, which he helped found in 1831 (Stephen and Lee, 1959-60, pp.881-82).

sary bulwark against destructive competition in note issue.

The first two of the many monetary tracts by Samuel Jones Loyd (later Lord Overstone), a writer soon recognised as the leading spokesman of the Currency School, appeared in 1837 in response to Palmer's pamphlet. Loyd (1837, pp.48-49; 1857, pp.12-15) found both the Bank of England and the joint-stock banks guilty of disobeying the currency principle (the rule that variations in the national volume of bank notes should correspond one-to-one with imports and exports of gold). A nationwide monopoly over the circulation was necessary to allow the currency principle to be enforced. McCulloch (l837a), in a review of many of the year's pamphlets and in a new edition of *The Wealth of Nations* (1838, pp.500-08), concurred with Loyd in blaming the country banks for the boom-bust cycle and recommending a currency-principle-bound single issuer as the remedy.

Samson Ricardo's (1837) response to Palmer, similarly finding fault with both segments of the issuing industry, suggested that a state bank rather than the profit-motivated Bank of England should be given the monopoly of issue. His brother, David Ricardo, had earlier offered such a plan, as we have seen; Samson Ricardo (1838) reprinted that plan as an appendix to a subsequent plea for a state bank. David Salomons (1837), later a director of the Bank of England, offered a so-called defence of the joint-stock banks against Palmer's accusations that suggested relieving them of the burden of issuing notes. It was in reality a plea for centralised banking.

Robert Torrens (1837, pp.44-53), while agreeing that the currency principle was paramount, thought the power of the Bank of England over the aggregate circulation already sufficient to enforce the principle. A complete monopoly of issue was therefore not justified. For this heresy he was taken to task by Loyd (1857, pp.100-01) and Norman (1838, pp.52-54). Torrens (1840, pp.29-31) subsequently fell into line with the Currency School argument that the Bank of England had insufficient control over provincial issues and that the latter acted as a major source of disturbance. Samson Ricardo (1837, pp.18-20) agreed with Torrens's earlier position, which was the same position that bullionists Walter Boyd and Lord Peter King had taken in the bullionist controversy.[19]

Two major theorists of the Free Banking School emerged in 1837. Samuel Bailey, better known today as a critic of Ricardian value theory,[20] mustered a *laissez-faire* defence of the joint-stock banks in a postscript to a critical work on price indices (1837, pp.171-224). With regard to the currency question he remarked: 'It is obvious that the great point to be determined is, how far the State can beneficially interfere in the business of Banking.' A competitive note-issuing system was self-regulating, Bailey thought, whereas the Bank of England's experience showed that any artificial attempt to manage the currency must be attended with insoluble difficulties.

James William Gilbart, the well-known manager of the London and Westminster Bank who had earlier published a pro-competitive history of banking (1834), reviewed the post-crisis literature in a section added to a history of American banking (1837b,

21 See H. Watt (1833), P. Watt (1836), Logan (1839), Anonymous (1840a), and Crosbie (1841).

pp.141-93). He rebutted Palmer's charge of over-issue against the joint-stock banks by arguing that the Bank of England held power enough to rein in the total circulation. The Bank's contractionary policy had been the actual cause of the pressure.

Pamphlets in praise of the Scottish banking system meanwhile continued to appear.[21] The most noteworthy works of this sort were a pair of open letters to Gilbart authored by banker Robert Bell (1838, 1840). Bell (1838) found ironic the proposal to make the Bank of England, the source of the 1836 crisis, the sole bank of issue. There was no question in his mind that pamphlets attacking the joint-stock banks were secretly designed to promote that proposal. Bell (1840, p.4) denounced vigorously 'the false notions, so anxiously inculcated by those writers who, under the specious pretext of consulting the welfare of the country, are in truth actuated by a desire to promote the monopolising schemes of the Bank of England'.

Parliament again grappled with the free banking question in 1839, when it had to decide whether to renew the lapsed monopoly of the Bank of Ireland over the area within 50 miles of Dublin. The Chancellor of the Exchequer, T. Spring Rice, arguing on behalf of central banking, was compelled to contend at length with the free banking position of Joseph Hume, MP for Kilkenny and a leading parliamentary radical. Rice (*Hansard*, 1839, XLIX, col. 803) admitted: 'I know that it is popular to say, Give us freedom of trade we want no monopoly all we demand is competition.' Hume (*Hansard*, 1839, XLIX, cols. 806-12) championed free banking by citing the success of Scottish banking and by attacking the monopolies of the Bank of England and the Bank of Ireland as the source of their power to generate over-issues. MP William Clay (*Hansard*, 1839, XLIX, col. 813) cast the issue in sharp relief as one of free banking versus Parliament-designed central banking.

The recurrence of recessionary pressure in 1839 brought forth more tracts in England on both sides of the currency question. Loyd in 1840 (1857, pp.41-158) published a long analysis of the event that charged the country issuers with disturbing the due regulation of the currency by the Bank of England. The cure was again to give the Bank uncontested control over the circulation. Once the Bank became the sole issuer, separation of its Issuing and Banking departments would insure compliance with the currency principle. But the crux of the matter, as Loyd (p.117) clearly recognised, was the choice between free banking and central banking:

> 'The public must come to a practical decision between the opposing plans. Rival issuers, equal in power and unlimited in number, on the one hand; a single issuer, limited in his functions but invested with plenary power for the discharge of them, on the other hand, are the respective principles, however much they may be modified by the details of practical arrangements.'

While the advocates of a single bank of issue by this time had begun to dominate the currency debate, the Free Banking School remained among the leading contenders. David Salomons (1840, p.48), in analysing the pressure of 1839, commented that 'the

22 Daugherty (1942-3, p.147) erroneously attributes support for Currency School views to the Manchester report, on the basis of its condemnation of Bank of England policy.

suppression of all minor issuers' was the 'chief remedy' being proposed by monetary writers. But before considering that plan he felt compelled to discuss the proposals of the Free Banking School writers, whom he characterised as 'authorities of considerable weight who advocate, as one means of preventing over-issue, an entire freedom of circulation of paper payable on demand by all banking establishments throughout the country'.

A report by J. B. Smith (1840a, pp.16-25) to the Manchester Chamber of Commerce blamed the recession of 1839 solely on the Bank of England's contractionary policy. That policy had to be pursued in order to reverse the loss of reserves it had suffered as a result of its own earlier 'undue expansion' of the currency. The report criticised the 'undue privileges' of the Bank as the source of its 'dangerous' power over prices, profits, and employment throughout the country.[22] Country banker William Leatham (1840) similarly attributed recent recessions to the Bank's cheap money policies and in a later pamphlet (Leatham, 1841) explicitly seconded Smith's indictment of the Bank.

Loyd (1857, pp.150-83), writing in response to Smith, found the country issuers at greater fault than the Bank of England. With respect to the privileges of the Bank he insisted (p.176) that 'my only object is to have it clearly understood what the question really is, *viz.* Whether the principle of unrestricted competition among issuers is the appropriate means to secure regularity and steadiness in the management of the circulation'. Smith (1840b) replied to Loyd, and Loyd (1857, pp.185-236) in turn wrote a second letter to Smith.

Bailey (1840, pp.45-100) responded to Loyd's writings in an essay added to a reprinting of his earlier defence of free banking. To Bailey the exclusion of joint-stock issuers from London was the 'only weak part of the system'. He commented that Loyd, in criticising the failure of the country banks to obey the currency principle, was operating under the false assumption that the country issuers could, like the Bank of England, arbitrarily control the extent of their circulation through open market operations. The provincial circulation was rather determined by the volume of provincial trade; the country banks remained utterly passive in the process. An anonymous country banker (1840a) made the same point in criticism of the Currency School's 'one Bank of Issue Project'. Bailey (1840, pp.94-99) attacked the Currency School's desire for monopoly of issue stemming from 'a hypothetical notion that there is a necessity for subjecting the amount or quantity of the currency to regulation'. He believed that

> '...any system which involves the necessity of any arbitrary, speculative, or deliberate adjustment of the sum total of a credit-note currency to the supposed commercial condition of the country is essentially wrong'.

Only the spontaneous working of competition could be trusted to provide 'the nice adjustment of the currency to the wants of the people'.[23]

W. B. Brodie (1840, pp.21-23) praised Bailey's work and offered a rebuke to

[23] Bailey is in many respects a spirit kindred to F. A. Hayek. Indeed, the programme of the Free Banking School takes on added interest as a forerunner to Hayek's (1978) and other proposals (see Vaubel, 1977) for competing private currencies. See Section 5.6.

Loyd similar in content though harsher in tone. Loyd was out to suppress the country issuers in order to 'throw into the hands of certain persons in Threadneedle Street the power of controlling all the monetary transactions of the three kingdoms' simply because variations in the country circulation did not, as Brodie conceived they could not, conform to variations in the Bank of England's gold reserves. M. Jeffels (1840) and an anonymous country banker (1840a) similarly defended the country bankers by citing their lack of discretionary power over the country circulation. G. M. Bell (1840, pp.84-89) condemned the Bank of England, conversely, for its exclusive power 'of making money cheap or dear at will' via open market operations. The country banks were bound to follow her lead. Trade and private fortune were 'constantly perilled by the capricious exercise of her influence'. Her exclusive connection to the state gave the Bank, moreover, a very dangerous political character and power.

Loyd in turn seized upon these demonstrations that obedience to the currency principle was inconsistent with note-issuing competition to argue that note-issuing competition must then be unsound. He read at length from Bailey's work before the 1840 parliamentary Committee on Banks of Issue (BSP, 1840, QQ. 2,738-42, 2,799), and as further evidence cited the works of Gilbart, Leatham, and Brodie.

Thomas Tooke (1840, pp.172-74) grudgingly acknowledged the popularity of free banking opinion. He thought it 'unfortunate' that

> 'among a vast majority of those who, without any pecuniary interest, attend to and reason upon the subject, the continued existence of the privileges of the Bank of England beyond the period to which they are limited is looked upon as an evil not to be doubted, and not to be endured.'

Tooke considered unfounded the charge that the Bank had overexpanded and overcontracted the circulation, arbitrarily depressing and raising the rate of interest. (Earlier in his career Tooke himself [1826, pp.66,73-74] had levied a similar charge against the Bank.) On the contrary, 'the machinery of the Bank of England is so excellent, and the working of it, in all its details, so perfect' that its note-issuing monopoly should be broadened. Should the Bank's charter not be renewed, Tooke (1840, pp.202-07) was

[24] Tooke's 1844 argument defending free competition in note issue represented a change in his position toward greater consistency with the free-trade principles he had long held. For an account of Tooke's evolving position on this question, see Arnon (1991, especially Ch.11). As noted below, Tooke continued to defend the Bank of England against Free Banking School attacks.

Arnon (p.181, n. 5) inexplicably charges that the First Edition of the present work ignored Tooke's earlier transformation from a non-Banking School to a Banking School position. In fact the sentence of the text above, noting that Tooke himself had earlier in his career levied the sort of non-Banking School charge of over-issue against the Bank that he rebutted as a member of the Banking School, appeared in the First Edition. Arnon also charged that the First Edition 'ignores credit altogether', whereas in fact there is a brief discussion (White, 1984, pp.110-11) of credit.

[25] Looking only at the first half of Gilbart's position, it is understandable why secondary sources such as Daugherty (1942-3, p.148), Mints (1945, pp.88, 96-97), and O'Brien (1975, p.158) have grouped Gilbart with the Banking School. But Gilbart's criticism of and by Tooke is inexplicable when no distinction is recognised between Tooke's Banking School position and Gilbart's Free Banking School position.

lukewarm toward a state bank, while violently opposed to rival joint-stock banks of issue in London. Plural issuers in London would be not only 'inconvenient' but 'unsafe', being likely to hold insufficient reserves, and would ensure 'much more serious derangements of the currency, and more violent transitions in the rate of interest, than under the present system'. He agreed with the epigrammatic observation of an anonymous American writer: 'Free trade in banking is synonymous with free trade in swindling.' Arguments for free competition in trade had absolutely no application to the issuing of currency. Tooke would later (1844, pp.155-59), after revising his position, dispute the notion that competitive banks issuing readily convertible currency could arbitrarily extend the currency.[24]

S. Mountifort Longfield (1840), first professor of political economy at Trinity College, Dublin, entered the controversy from Ireland on the Currency School side, arguing for a single issuer. He defended the exclusive privileges of both the Bank of England and the Bank of Ireland. His indictment of free banking drew heavily from McCulloch's earlier writings.

The distinctness of the Free Banking School position on monetary theory and policy was exemplified in this period by James William Gilbart's two-front war against both the Currency and Banking Schools. Gilbart (1840) attributed the pressure of 1839 to the Bank of England's cheap money policies of 1837 and 1838, which had eventually led to an efflux of gold and the need for contraction. Unlike Loyd, he did not consider the provincial banks a source of disturbance. In further contrast to the Bank of England's Currency School critics, he thought that the Bank's error lay in too closely tying its circulation to international gold flows. That policy led to its over-issuing during a period of influx. The circulation should rather be allowed to respond to the state of domestic trade.

In contrast to Tooke, who at this time was virtually alone in advancing the doctrines around which the Banking School would later form, Gilbart thought the Bank of England's high reserve ratio in 1838 was no evidence of a sound circulation. In reviewing the literature of the 1839 crisis Gilbart (1841a, pp.47-48) criticised Tooke for his position on the crucial question separating the Banking School from the Free Banking School, namely for maintaining that the Bank of England was incapable of instigating a false boom and inflating prices by arbitrary expansion of its issues.[25] Tooke for his part (1844, pp.55-59, 94) criticised the position of Gilbart and others of the Free Banking School:

> '...loud in their declamations against what appears in their eyes the monster monopoly of the Bank of England; contending, as they do, that whereas the country banks of issue are limited as to any power of adding to the circulation, no limitation exists to the power of the Bank of England to make any addition to its issues.'

John Fullarton (1844, p.94) made a similar criticism. The Free Banking School would have no part of his 'principle of the reflux' that made over-issues impossible under any institutional arrangement.

Like Bailey, Gilbart (1841a, p.50) questioned the notion that the currency ought

[20] Portions of the testimony by Loyd, Stuckey, and Gilbart have been reprinted by Gregory (1964).

to be governed by a man-made principle. He rejected (1841a, pp.54-60) in order the currency schemes of Palmer, Torrens, and Loyd, citing Bailey in defence of the country issuers and himself in opposition to a single bank of issue. He favoured rival issuers in London as an automatic means of checking the Bank of England. To 'so simple a remedy' as 'free trade in banking in London' Gilbart (1841a, p.67) believed the legislature must eventually turn:

> 'When a few more theories have been tried - a few more "pressures" have been experienced - a few millions more of opulent families have been reduced to beggary, and our Union work-houses are thronged with starving artisans, then we may discover that all our attempts to regulate the currency have been productive of mischief, and we shall be willing to let the currency regulate itself.'

With another decision on renewal of the Bank of England's charter due in 1844, Parliament appointed a Select Committee on Banks of Issue to solicit new testimony on the currency question in 1840 and 1841 (BSP, 1840, 1841). The free banking issue was still paramount. In moving for appointment of the committee, the Chancellor of the Exchequer (*Hansard*, 1840, LII, col. 1,118) advised that

> '...the question to which their attention ought to be specially called was as to the existence of a bank having any particular privileges - whether the existence of that bank was right or proper - whether it would not be more advisable to introduce the system called free banking'.

The alternative reform schemes to be considered were a more powerful Bank of England or a single bank of issue.

G. M. Bell (1841, 1842) reviewed each year's testimony from a free banking standpoint. He noted (1842, p.v) the sharp contrast between the 'philosophers' of the Currency and Banking Schools questioned in 1840 (Palmer, Norman, Loyd, and Tooke the most noteworthy) and the 'practical men' from among the ranks of the country and Scottish bankers (Henry William Hobhouse, Vincent Stuckey, and Gilbart the most noteworthy) summoned in 1841.[26] The testimony of Manchesterites J. B. Smith and Richard Cobden (BSP, 1840, QQ. 519-36) revealed the developing tendency for adherents of *laissez-faire*, who wished to free the currency from discretionary management, to look not to free banking but to restricting the right of issue to a rigidly rule-bound state bank as the solution. Bell (1841, pp.69-70) rejected the state bank proposal as even more dangerous than private monopoly. Government monopoly of the currency was likely to be abused for political ends, despite all attempts to bind it, and to result in permanent suspension of redeemability. The case for a single state bank of issue was expounded by John Gellibrand Hubbard (1843, pp.70-89), who answered both Bell and the 1841 testimony of Gilbart. Like Loyd, Hubbard favoured a single issuer as a means of enforcing the currency principle.

On the eve of the introduction of the Bank Charter Act of 1844, the lead article of the new *Bankers' Magazine* (Anonymous, 1844a, pp.4-7) found all parties agreed on the need to alter the monetary system. Opinion on the proper reforms was nonetheless split along several dimensions, most markedly between advocates of central banking and advocates of free banking. 'First in importance was the large and influential class who think that the currency of the country should be managed and controlled by *one Bank of Issue*.' That group included influential London bankers, merchants, and manufacturers. But their opponents, who maintained 'that the trade in money, instead of being monopolised, should be left entirely free,' were 'not less numerous and important. They may be said to comprise the entire body of the Joint-Stock and Private Bankers who issue notes, and whose interests would be materially affected by the alteration'. Spokesmen for free banking opinion (Anonymous, 1844b, 1844c) occupied the pages of *The Bankers' Magazine* in subsequent months.

4.6. Peel's Bank Acts of 1844 and 1845

The programme of the Free Banking School was finally swept aside with the passage of Peel's Bank Acts of 1844 and 1845. The Acts consolidated the privileged position of the Bank of England and suppressed freedom of note issue in the countryside and in Scotland and Ireland, respectively. Brief summaries of the most important provisions of the Acts must suffice here (for the text of the 1844 Act, see Gregory, 1964, pp.129-47).

Under the Bank Act of 1844, entry into the note-issuing industry was closed completely in all parts of the United Kingdom. In England and Wales, no existing country or joint-stock bank was allowed to exceed its authorised circulation, set equal to its average circulation during a specified period of 1843. The Bank of England was allowed to exceed its authorised circulation provided it met a 100 per cent marginal specie reserve requirement. The Bank of England's authorised circulation was set initially at £14 million. If any provincial bank failed or otherwise ceded its right of note issue, the authorised circulation of the Bank of England was to increase by two-thirds the amount of the lapsed circulation. Rules were laid out under which the Bank of England might pay a provincial banker to cede his right of note issue. As an administrative device the Bank of England was split into an Issue Department, to which the above regulations applied, and a Banking Department, which was prohibited from paying out notes other than those it acquired through transactions with the Issue Department. The 65-mile rule of 1826 remained in force so that no provincial issuer could enter London.

Peel's Bank Act of 1844 was clearly intended to bring about centralisation of the English note issue in the hands of the Bank of England, though in a gradual way due to the need to grandfather in the provincial issuers. It is not surprising to learn from the Bank of England's historian Clapham (1945, Vol.2, pp.178-79) that all of its leading provisions were suggested to Peel in February 1844 by the governor and deputy governor of the Bank of England. J. K. Horsefield (1944, pp.110-11) has aptly commented

[27] See Hilton (1979, pp.589-96) for an insightful account of Peel's little recognised dogmatism on matters of monetary policy.

that the Act, though it resembled the proposals made by Ricardo and by Currency School critics of the Bank of England, was hardly a 'straightjacket, fastened on a reluctant (though subsequently complacent) Bank by the efforts of the Currency School,' as once thought. It was rather 'an attempt by the Bank to find for itself a short-cut to currency management'. Peel was more than ready to promote the attempt, being a completely convinced disciple of Currency School doctrine.[27]

The Bank of England's directors must have been more than happy to have the government apply the rules of the currency principle to them: For years they had been searching for a simple non-discretionary rule that would govern their circulation in such a way as to insulate the bank from public criticism of its monopoly. J. Horsely Palmer (1837, p.42) in defending the Bank had pleaded: 'If there exist any well-founded reasons for supposing that the principle acted upon by the Bank is not sound' or its reserve ratio not sufficient, 'it merely remains for Parliament to express an opinion upon either of those points, and there can be no question that the Bank will immediately regulate its course accordingly.' In the Act of 1844 they had a rule imposed from without, absolving them from responsibility for the state of the money market, accompanied by an extension of their monopoly conveniently justified as a means to make the rule more effective.

The Scottish banks were treated somewhat differently from the English provincial banks, either due to the greater political opposition they could muster or to the Bank of England's lack of interest in entering Scotland. Under the Scottish Bank Act of 1845, an existing Scottish bank (entry having been sealed off already by the 1844 Act) could, like the Bank of England, exceed its authorised circulation by meeting a 100 per cent marginal specie reserve requirement. Its authorised circulation was, like that of an English provincial bank, set equal to its average circulation during a specified past period.

In his speech of 6 May 1844, announcing introduction of the Bank Charter Act of 1844, Peel (*Hansard*, 1844, LXXIV, cols. 720-55) felt it necessary to defend the Act against the doctrines of the Free Banking School, to whom he referred as the 'advocates for unlimited competition'. To do so he employed arguments warmed over from Loyd's 1840 testimony (BSP, 1840, Q. 2,866). He reiterated Loyd's argument that the principle of free competition was inapplicable to the issue of paper money. Borrowing the tactic Loyd had used against Bailey, Peel assumed the currency principle to represent sound management of the circulation and cited the 1841 testimony of Hobhouse and Stuckey that the country banks did not and could not obey the principle as evidence of the unsoundness of a competitive issuing system. Finally, as Loyd and several other opponents of free banking had done, he held up the banking system of the United States as a disastrous example of unlimited competition in practice. Peel was frank as to the leading aim of the Act of 1844: 'We think it of great importance to increase the controlling power of a single Bank of Issue.'

Peel (see Fetter, 1978, p.184) had anticipated resistance to the Act of 1844 'by those ... who think there ought to be unlimited competition as to issue'. There was

[28] On the history of the English joint-stock banks, see Thomas (1934). For leading examples of country bank opposition to the joint-stock banks, see Burgess (1826, 1827) and Anonymous (1832a).

remarkably little, beyond speeches in Parliament by Benjamin Hawes and Joseph Hume. Hawes (*Hansard*, 1844, LXXV, cols. 777-97) argued the old bullionist position that redeemability alone was a sufficient regulator of note issues, so that there was no need to bring the paper currency under central control. Hume (*Hansard*, 1844, LXXV, cols. 834-8) agreed:

> 'As to the regulation of the currency, he defied any legislation to regulate it. The operations of commerce must be its natural regulators, and, therefore, these restrictions upon the issues of private banks were impolitic and unnecessary. Let them once secure the general principle of convertibility, let that principle be universally applied, and then they might safely allow unlimited issue - convertibility being a sufficient check.'

Hume went on to deny the relevance of the American case and to point once again to Scotland as a demonstration that competitive issue worked well. He noted that the Act would give the Bank of England an unfair preference over its competitors.

Why did the Free Banking School lapse into near silence in 1844? One of the school's leading pamphleteers and parliamentary spokesmen, Parnell, had died in 1842. It is likely that most of the others were, to put it baldly, co-opted by the way in which Peel's Acts offered to cartelise the bank-note-issuing industry. The Acts insulated existing issuers from competition both from without, by barring entry, and from within, by freezing market shares.

The leading advocates of free banking outside Parliament had been largely joint-stock and country bankers, who had invoked the principle of free banking to justify and defend their role in the banking industry. The joint-stock banks in particular had gained their foothold in the industry in the face of hostility from both the Bank of England and many of the country banks.[28] James William Gilbart's response to the proposed Act, bashfully written under a pseudonym, indicates how cleverly Peel had framed the Act to co-opt potential opposition. As a spokesman for the existing joint-stock banks, Gilbart (1845, pp.10-16) was compelled to consider the Act on net a boon to their narrow interests, howsoever much he disliked its enactment of the currency principle. He was relieved that the Act did not extinguish the joint-stock banks' right of issue and was frankly pleased with its cartelising provisions: 'Our rights are acknowledged, our privileges are extended - our circulation guaranteed - and we are saved from conflicts with reckless competitors.' A similar sentiment was voiced by an anonymous writer (1844d) in *The Bankers' Magazine*. Although critical of the Act's currency principle aspect and of the trend toward a single bank of issue, he pointed out to the provincial bankers that the prevention of competition by new issuing banks would advantageously

29 Mill (1848, pp.675-76) later defended plural issues on *laissez-faire* grounds, though he still favoured a special reserve-holding role for the Bank of England.

30 On the question of the Bank of England's power to over-issue, Wilson (1847, pp.69-74) was nonetheless closer to Tooke than to Gilbart.

31 See the works of Aytoun (1844), Miller (1844), Scotus (1844), an anonymous banker in England (1845), and Macfarlan (1845). James Wilson, although living in London, was a native Scotsman.

guarantee the profits of existing banks. From his and from Gilbart's grudging assent we see that the Act of 1844 was indeed, as Boyd Hilton (1979, p.595) has characterised it, 'a good example of how Peel could combine political pragmatism with doctrinal rigidity'.

With the free banking advocates quiet, the opposition to the Act was instead led by Tooke (1844), Fullarton (1844), and John Stuart Mill (1844) of the then-emergent Banking School, whose criticism left unchallenged the centralisation of the note issue.[29] The failure of the Free Banking School's spokesmen to enter the debate over the Act of 1844, the legislative capstone of this era of monetary controversy, has surely been instrumental in the school's neglect by historians of the era. A few last-ditch defences of free banking were made between passage of the Act of 1844 and its extension to Scotland and Ireland in 1845. James Wilson (1847, pp.30-35, 97-104), founder and first editor of *The Economist*, came to the defence of free banking and the Scottish system as a shining example thereof in a series of 1845 articles critical of Peel's Acts.[30] Wilson saw the Acts as only the latest in a series of makeshift efforts to repair the structure of a banking system distorted by the privileges bestowed on the Bank of England. He saw no reason to drag Scotland in: If anything, the worse system (England) should be assimilated to the better system (Scotland), not the reverse.

The local defenders of Scottish banking[31] were more concerned with defending the £1 note than with any other feature of their system. That much Peel pragmatically left them. The bankers of Scotland, like the bankers of England, did not loudly protest against an Act that bestowed on them a shared legal monopoly of the circulation. Hugh Miller (1844, pp.72-73) had feared a measure that would buy the support of the larger Scottish banks by suppressing the smaller. Peel in essence bought the support of all existing banks by suppressing potential entrants and competition for market shares.

CHAPTER 5

Theoretical Issues in the Free Banking Controversy

5.1. Free Trade in the Issue of Currency

Nearly all the important participants on both sides of the British debates over free banking expressed a commitment to free trade principles in the abstract and in relation to other issues. In their opposition to the corn laws, for example, unanimity reigned among King, Parnell, Mundell, Scrope, Torrens, Tooke, and McCulloch, though only the first three consistently supported free banking.[1] Nearly all acknowledged that the benefits of open competition applied to lending, deposit-taking, and other aspects of banking apart from the issue of paper currency. They differed sharply, however, over the question of whether these benefits extended to the note-issuing trade. To the Free Banking School it was obvious that they did; to the Currency School and to the early Tooke it was obvious that they did not.

The interventions into banking sanctioned by the opponents of free banking were predicated on the notion that the note-issuing trade was a special case. Free banking advocates understandably found it anomalous that the avowed free traders of the Currency School supported monopoly of the note issue. Free trade being the general principle, the Free Banking School insisted that the burden of proof rested with those who argued the superiority of currency monopoly.[2]

The most direct attempt to meet that burden on general grounds came from Samuel Jones Loyd (1837, pp.49-50; BSP, 1840, Q. 2,866). Loyd felt 'that competition is a principle most properly applicable to banking business, as to most other businesses; but that it is not a principle applicable to what I should rather call the privilege than the business of issue'. He saw two advantages from free competition in ordinary trades: (1) It excites the ingenuity and exertion of producers, hence insuring the greatest and highest-quality supply at the lowest price; and (2) the burdens of miscalculation by producers fall on the producers themselves. Neither of these, he argued, applied to the issue of paper money: (1) It is not the greatest quantity at the cheapest price, but a strictly regulated quantity, which the public interest requires in currency; and (2) the errors of issuers fall largely on the public. The elements of Loyd's argument were present in earlier Currency School writings.[3]

No direct rebuttal to Loyd's argument was forthcoming. We may, however, piece

1 See Fetter (1980, pp.37-42). Sinclair (1829, p.134), on the other hand, despite his praise for competition in banking, supported the corn laws. (The agriculturalist pamphleteers who opposed the gold standard generally had no allegiance to free trade.) Tooke, as noted in Chapter 4, eventually switched from opposing to supporting free trade in note-issue (see Arnon, 1991).

2 See Bailey (1840, p.3), Robert Bell (1840, p.4), Parnell (1833, pp.2-3), Gilbart (1844, p.607).

3 Norman (1838, pp.50-55), McCulloch (1833, pp.378-79), A. Smith (1828, Vol.4, pp.305-06), Cazenove (1832, p.18).

together a counter-argument from the writings of the Free Banking School. Being committed to the natural system of gold redeemability for notes, the Free Banking School writers did not generally argue that quantity and cheapness in the sense suggested by Loyd - a reduction in the purchasing power of money due to an expanded supply of money - was a benefit of competitive note issue.[4] They were at pains to insist that a call for free trade in banking was not a call for debasement (e.g., Edwards, 1830a, p.176), and disassociated themselves from the Birmingham School (Kinnear, 1847, p.36). In order to understand why they nonetheless considered note issuing to be a trade akin to any other trade, we must examine what it was they considered to be the particular good or service that banks of issue provided.

To the advocates of free banking, the Currency School's distinction between banking and issuing was entirely spurious. From a modern view of the banking business there is little to be said in the Currency School's defence on this point. Notes and deposits were alternative forms of bank liabilities. Non-interest-bearing deposits transferable by cheque were in particular close substitutes for bank notes both to the banks issuing them and to the customers holding them. Non-issuing banks that created deposits were not *ipso facto* engaged in a different business than banks that issued notes.

Several authors of free banking persuasion (e.g., Edwards, 1830b, pp.345-46) urged that the function of note issue was inseparable from other banking functions on the grounds that an extensive branch banking system could not be supported without the profits of a note circulation. The testimony of Scottish bankers (BSP, 1826), threatened with a ban on their £1 notes, was unanimous on this score. Their point was valid: A deposit banker who held specie plus notes from an outside source in his vault would incur greater reserve-holding costs, for a given volume of deposits, than would a banker who could redeem deposits by issuing his own notes and held only specie in his vault. By allowing bankers to economise on vault cash, and thus to support a greater portfolio of earning assets, the issue of notes promoted the intermediary function of the banks. John G. Kinnear (1847, pp.37-39), criticising Peel's statement of the issuing-banking distinction, pointed out that in practice Peel's Act interfered with a 'very important point in the banking business', namely the decision as to optimal specie reserve holdings, by imposing marginal reserve requirements against the issue of note liabilities.

Thomas Hodgskin (1827, pp.205-08) puzzled over the fact that bank notes had 'exclusively attracted the attention of politicians' as an object of legislation. The issue of notes flowed naturally out of the business of receiving money in deposit and relending it. The great and widespread reputation of trustworthiness necessary to conduct that business made the banker's promissory notes more generally acceptable in transactions than the commercial notes or bills of other merchants, thereby putting the banker in a position profitably to exchange his notes for commercial bills. To enhance their accept-

4 G. Poulett Scrope (1832, pp.439-42, 456; 1833b, pp.417, 424), who did argue that way, ought not to he considered a mainstream member of the Free Banking School. His support for free banking was mixed. Like Sinclair, he placed a higher priority on combating deflation. It is nonetheless remarkable that Redvers Opie (1929, pp.117-25), in a secondary account of Scrope's monetary views, emphasises his anti-deflation schemes to the total exclusion of his support for free banking.

ability the banker issued his notes in convenient denominations and made them payable on sight.

G. Poulett Scrope (1833a, pp.32-33) had a similar conception. He noted the inconsistency of objecting (as the Currency School did) only to the unregulated issue of 'circulating credit', such as bank notes, and not also to the unregulated issue of 'book credit', such as chequing deposits. Notes, cheques, and commercial bills of exchange were all merely forms of credit. Some forms of credit were less able to circulate than others due to the unfamiliarity of their issuer. In the course of commercial progress traders had therefore adopted 'contrivances . . . for converting such species of credits as are slow to circulate, into those which obtain a ready circulation. A bank of issue is one such contrivance.' That is, the function of an issuing bank was not so much to produce and sell money, as Loyd conceived it. Its function was rather to exchange recognised for unrecognised credit, or to provide a credit-certifying service based on its superior reputation. The substitution of bank notes for private bills of exchange as a circulating medium was to Scrope 'a simple step in the division of labour'. Manchester banker Joseph C. Dyer, in parliamentary committee testimony (BSP, 1831-2, QQ. 4,274-6), favourably quoted by Scrope, advanced the same view as to the service provided by issuing banks: 'The issue of bank notes is merely an exchange of credits.'

In exclusively stressing the similarity of bank notes to commercial bills, Hodgskin, Scrope, and Dyer were clearly guilty of neglecting a crucial difference between the two instruments.[5] Bank notes were immediate claims to basic money. Their 'ready circulation' was owing to that fact, which fixed their exchange value equal to that of coin and enabled them to serve as coin substitutes for local transactions purposes. Commercial bills were future-dated claims to repayment. Their 'slow circulation' was in great part due to that fact, which allowed their market value to vary with time to maturity and the discount rate. This distinction between present-datedness and future-datedness is necessary to explain why bankers exchanging notes for bills were able to command not only a percentage commission (which we may attribute to the superiority of notes as a circulating medium) but also a discount varying with time to maturity.

These authors nonetheless had a valid and illuminating point to make. An important determinant of the ability of a claim to circulate as a medium of exchange - and commercial bills were known to circulate as such, being successively signed over from party to party as a means of payment - was the reputation of its issuer.[6] Rival banks of issue were correspondingly obliged to compete in cultivating public confidence in the redeemability of their notes. The creation and maintenance of that confidence was the production of a scarce good, subject like any other to limited economies of scale, as

5 See Mises (1912, pp.263-68). Tooke (1844, p.158 n.) of the Banking School was guilty of the same error. He lumped bills of exchange together with notes and deposits as 'interchangeable parts of the circulating medium'.

6 This is also true of coins in a competitive setting. Coins of a particular mint will gain wider acceptance to the extent that transactors believe the mint mark reliable, thus sparing them the bother of testing weight and fineness. In relying on tale, transactors are in a sense treating the coin as a claim.

discussed in Chapter 1. A particular source of diseconomies of scale came from the evident preference in both Scotland and England for locally issued and locally redeemable notes. The satisfaction of that preference required the maintenance of local offices, and communications and organisational difficulties limited the size of branch banking networks. The principles of free trade and open competition did apply, therefore, to the business of producing reputable claims to specie.

The preference for local notes was explained by one free banking theorist (Anonymous, 1837, p.55) to be a demonstration of the 'mother wit' of small provincial dealers in three respects. First, they knew better the character and stability 'of the Banker who lives near them'. Second, locally issued notes were considered more readily convertible: 'They know that they can present their notes for gold, and that, in case of any accident, they are upon the spot to look after their own interests.' Third, the risk of forgery was less: 'The appearance of local paper is too familiar to them, and immediately under the eye of the issuer, which protects them against forged impositions.' Thomas Joplin (1822, pp.56-59) similarly explained the provincial preference for country bank notes over Bank of England notes on the basis of lesser total risk of repudiation. The greater risk of loss from bank failure with a country note was more than outweighed by the greater risk of loss from forgery with a Bank of England note. Both writers were implicitly referring to diseconomies of scale in the issue of bank notes.

Loyd (BSP, 1840, Q. 2,866) considered 'issuing paper' to be equivalent to 'the creation of money'. He implicitly assumed that the notes of various issuers were homogeneous with one another and with specie in the eyes of the money-holding public. Whatever was issued was to Loyd (1837, p.48) 'necessarily the common medium of exchange for the whole community'. He thereby ruled out consideration of quality competition among note issuers. Dyer (BSP, 1832, QQ. 4,274-6) operated on the contrary assumption. Given the importance to the economy of its circulating medium, it seemed to him objectionable 'that the public should not be at liberty to provide for themselves the kind of instrument of credit most likely to serve their purposes best'. Bank of England notes had proven 'a most dangerous and unsuitable instrument'; therefore, 'merchants ought to be allowed to devise the best instruments for conducting the trade of the country which they can invent'. A further development of this theme of quality competition among notes came from Scrope (1832, p.452), who explained the relative market shares of various issuers on the basis of public preferences among their brands of notes (see Section 5.2).

The argument that it was inconsistent to apply free trade principles to some media of exchange, but not to others, could be made to cut both ways. Monetary interventionists of the period pointed out that the Free Banking School, favouring unrestricted competition in the issue of paper money, should equally favour unrestricted competition in the minting of coins. To Chancellor of the Exchequer T. Spring Rice (*Hansard*, 1839, XLIX, cols. 778-9) it was a sufficient *reductio ad absurdum* of the free banking position to point out that the principle of free trade in money implied abandoning the national mint and opening the coinage business to all. Several writers, like J. R. McCulloch (1837a, p.82), invoked the royal prerogative over coinage as a justification for state regulation of substitutes for specie such as bank notes.

Only Thomas Hodgskin (1827, pp.190-98) among the British free banking advocates of this era, was ready to endorse competitive private coinage on principle.[7] Private coinage existed prior to its relatively recent monopolisation by government, he noted, and would have continued to evolve. Not only was there no necessity for state coinage, but its long history of debasements showed that the state was the worst body to entrust with that function. Private mints would be subject to competitive market discipline, whereas the government was not.

Other free banking advocates took various tacks against the argument from the royal prerogative over coinage. Most, like the MP Joseph Hume (*Hansard*, 1839, XLIX, col. 811), simply denied or ridiculed the claim that issuing paper was equivalent to coining money.

The second prong of the Currency School argument against the appropriateness of open competition for the note-issuing trade was the charge that it generated externalities: The negative consequences of an issuer's supply errors would victimise innocent members of the public. This victimisation supposedly occurred in two ways. First, the failure of an issuing bank would impoverish its note-holders, members of the public who had no choice but to accept whatever notes came their way in the course of trade. Second, over-issues would disrupt trade in general.

An anonymous Free Banking School pamphleteer (1837, pp.41-50) noted that bank notes were not in fact accepted and held involuntarily. The accepter looked to its redeemability before taking it: 'The acceptance is his own unbiased act, the result of his own prudence and experience.' It would be 'radically bad' paternalism, he concluded, for the law to impose restrictions against voluntary exchange for the purpose of preventing imprudence. The only proper legal protection against the defaulting issuer was the punishment of fraud.

Bailey (1840, pp.16-17) pointed out that note-holders of failed joint-stock banks had not in fact been victimised. Under the unlimited liability system in operation, the losses of failed banks fell entirely on their partners, who were personally liable for redemption of the bank's outstanding obligations. Bailey neglected to admit that there had nonetheless been losses to the public from the country banks, whose few partners could exhaust their personal wealth and become bankrupt before reaching the end of their obligations.

To most members of the Free Banking School the obvious free trade remedy to this problem was to allow joint-stock banks to supplant the country banks of six and fewer partners. Other writers suggested that banks of issue be compelled to lodge with the government a security deposit of government bonds or other secure assets before being allowed to issue notes.[8] Alexander Mundell (1832a, p.69) objected that such

7 Herbert Spencer (1865) later endorsed private coinage. On the American side William Leggett (1840), in many ways an American counterpart of Hodgskin, also endorsed it.

8 E.g., Anonymous (1826a, pp.20-24) and Bain (1833, p.5). The suggestion was made as early as 1816 by Ricardo (1951, pp.72-73) and was seconded by his follower McCulloch (1826a, p.280). Of the free banking advocates, Scrope (1830a, 1830b, 1832, 1833b) and even Parnell (1827, pp.140-44) joined in recommending a security deposit. The so-called Free Banking Act of the State of New York, passed in *[continued on page 94]*

plans would cripple the means of the banks and would unfairly favour note-holders over depositors. The character of the issuer was the best security. Daniel Hardcastle (1826, p.263), a hard money advocate, pointed out that such plans might exacerbate the problem of excess issues of bank notes by giving ready acceptability to notes that would otherwise be mistrusted.

The second supposed externality of competition in bank-note issue was that excessive issues by the banks, even if eventually corrected, would disrupt the general trade of the nation. John Cook (1837, p.31) and G. W. Norman (1838, pp.50-51) joined Loyd in considering this an argument against free trade in bank-note issuing. Their argument presumed that a centrally controlled system of issue would be less prone to large-scale money supply errors than a competitively disciplined decentralised system. We now turn to that question of over-issues under competition and central banking.

5.2. Over-issues Under Free and Central Banking

The Free Banking School emphasised that competition, especially when acting through a note-exchange system as in Scotland, would rapidly check a relative over-issue by any single bank. They explained in detail the operation of the interbank clearing mechanism that would bring about a reflux of excess notes on the issuer. Few committed the fallacy of composition of suggesting that this mechanism would check an over-issue of notes by the system as a whole. The better theorists recognised that any regional system as a whole was checked through external drain in accordance with the Humean price-specie-flow mechanism. In this long-run respect a system of plural issuers of convertible notes did not differ from a system of a single issuer. But the Free Banking School further argued that the system as a whole was less likely under free banking than under central banking to develop an excess supply of notes sufficient to generate the short-run phenomena of the business cycle. They saw the monopoly dominion of the Bank of England as giving the Bank immunity from competitive checks, thereby allowing it to over-issue severely in the short run.

Members of the Currency School, most notably J. R. McCulloch, not only denied that interbank note exchanges could check the system as a whole, but also denied that they could even check relative over-issues by a single bank. Not only could the Bank of England over-issue, but country and Scottish banks could as well. It will prove instructive to examine below the fallacy of their reasoning on this latter question. The Currency School further argued that decentralised issuers would act in a cycle-amplifying way, whereas a single central issuer could be regulated so as to act in a cycle-dampening or at least neutral way.

As participants in the controversy used it, the term over-issue denoted the creation of an *excess supply* of bank notes, either of a particular issuer or in general. By excess supply we mean a stock of notes larger than the public was prepared to hold in

1838 and widely imitated by other states, required potential issuers to purchase and deposit state debt as a condition of entry, ostensibly to provide an ultimate redemption fund. See Hildreth (1840, pp.112-13, 200-09) for the text of the Act. American law did not provide unlimited liability for bank shareholders, although some states adopted double or triple liability.

long-run asset-portfolio equilibrium, given the purchasing power of the notes as set exogenously by the world purchasing power of gold. In most contexts, a general over-issue was treated by the Currency School and the Free Banking School disputants as equivalent to, or as a shorthand for, what we today would rather call an excess supply of money. They treated changes in the stock of currency (specie and bank notes in the hands of the public) in the way that economists today treat changes in broader monetary aggregates (currency in the hands of the public plus various bank liabilities), namely as proximate determinants of changes in prices, interest rates, and the balance of trade under fixed exchange rates. None denied that eventually the price-specie-flow mechanism would eliminate an excess stock of redeemable currency through export of specie. Any general over-issue was therefore not permanent. But they saw that it could persist long enough to put the economy through a major trade cycle. The clearest attempt to define a general over-issue was made by Torrens (1848, p.109), who defined it as 'a temporary expansion' of the currency stock 'above the amount required to keep the currency at par with foreign exchanges', persisting 'until the level is restored by the expulsion of bullion'.

Thomas Tooke and other members of the Banking School sat out the entire dispute concerning the relative likelihood of over-issues under free and central banking. They thought it useless to focus on such a narrow monetary aggregate as currency. To them an excess stock of notes could remain in circulation no longer than it took note-holders to visit their banks and make deposits.[9] Tooke (1844, pp.157-59) allowed that prices might be temporarily inflated by 'over advances by banks', but he attributed the problem to the banks making 'advances to persons undeserving of credit' or purchasing 'doubtful bills', and not to their creating an excess stock of money in a broad or narrow sense. The Banking School effectively denied that a persistent excess stock could be created for any monetary aggregate, as though the price-specie-flow mechanism operated instantaneously. As Torrens (1848, p.109) put it, the Banking School denied that banks of issue possessed 'the power of so increasing the circulation as to drive out the bullion'. Every bank be it a central bank like the Bank of England, a mere satellite bank like an English country bank, or one bank among many equals like a Scottish bank - was treated as passive with respect to its liabilities.

5.2.1. The Single Bank in a Plural Issuing System

The Free Banking School's explanation of the competitive checks against single bank over-issue rested logically on the proposition that there existed a definite nominal stock of any particular bank's notes that members of the public in the aggregate desired to hold.[10] We shall, as in Section 1.4, denote the public's desired stock of bank *i* notes by

[9] Some members of the Free Banking School took this position as well, though only with regard to a banking system paying interest on demand deposits, which the London banks did not do.

[10] Vera Smith (1936, pp.155-62, 174-76) wrongly takes the argument to rest logically on the proposition that there exists a lag between additional issues via loans and additional receipt of notes via repayments.

N_p^{i*}. Having established or assumed the existence of N_p^{i*}, the explanation then became a matter of spelling out the institutional process by which excess notes would spontaneously return to bank *i* for redemption. If Free Banking School writers often devoted substantial space to the minutiae of how interbank note exchanges operated, while giving inadequate space to the theory of why particular notes and not others should enter the exchanges, that may have been a byproduct of their overriding concern with institutional reform.

The proposition of a determinate N_p^{i*} was clearly present in Adam Smith (1976, Vol.1, p.320), who in an example attached a definite number of pounds sterling to the magnitude of 'all the paper of a particular bank, which the circulation of the country can easily absorb and employ'. Smith did not discuss the factors determining that magnitude, leaving it for his follower Lord King to do so.

King (1804, pp.116-20) offered a geographic theory of N_p^{i*}. He considered it a 'general rule' that under competition the circulation of any particular issuer's notes was limited to the neighbourhood of the bank office. The farther from the bank office, the greater to the note-holder were the danger of forgery and the trouble of redemption. Each bank's notes were therefore limited to 'its particular district or *sphere of circulation*'. Notes that found their way beyond the limits of the sphere would be returned to the issuer for redemption. Within the sphere the quantity of notes was determined by the transactions demand for currency by individuals, who economised on their currency balances due to the opportunity costs of holding them.[11] The view that geographical considerations limited N_p^{i*} was also advanced by Gilbart (1834, pp.134-35) and Robert Bell (1840, p.17). Explanations of the preference for local notes, mentioned in Section 5.1, provided an underpinning for this view.

The geographic theory of note circulation was simply - and King regarded it as such - the international price-specie-flow theory writ small. What ultimately checked the over-issue of bank notes within a town or county was the same sort of external drain that corrected an excess supply of money in any small open economy with fixed exchange rates. Excess notes would be converted into specie, to be exported in settlement of net purchases outside the region. That theory was adequate to King's purpose, which was a rebuttal of the charge that the country banks as a whole had over-issued and depreciated the currency during the suspension period even while their notes were convertible into Bank of England notes. As Samuel Jones Loyd (1857, pp.95-99) pointed out, however, the theory did not explain the relative shares of issuing banks whose geographic 'spheres of circulation' were overlapping. A theory adequate to that purpose was necessary for the Free Banking School to defend their proposal to allow joint-stock banks of issue to compete with the Bank of England in London.

We have already mentioned, in our discussion of quality competition among bank-note brands above, Scrope's approach to the question of determining market shares among rival issuers. Scrope (1832, p.452) suggested that a bank's share of the total circulation could be explained by supposing that each individual prefers to hold

11 King noted that the assumption of determinate desired currency balances was basic to the theory of the price-specie-flow mechanism. We noted in Section 5.1 explanations of the preference for local notes that were similar to King's.

the notes only of a single bank.[12] With competition enforcing equality of risk-adjusted bill-discounting rates among banks, each bank 'will be able to keep out just that proportion, and no more, of the entire circulation, which corresponds to its relative credit; that is, to the relative space over which, or number of persons among whom, its notes and its accommodation are preferred to those of other banks'. Here King's theory was generalised by the recognition that the 'sphere of circulation' of a bank-note brand need not be defined geographically. It could rather be defined as a subset of the holders of bank notes among whom that brand of notes had the most desired qualities.[13] The non-geographic quality Scrope especially emphasised was relative reputation. This account lacked, for completeness's sake, only a discussion of the eventual diseconomies of scale met in quality competition for customers.

Scrope remedied elsewhere one other deficiency in the geographical theory of bank-note demand. King had used the assumption of determinate desired currency balances, but had not accounted for their division into specie balances and note balances. Adam Smith (1976, Vol.1, pp.318-20) had similarly left unexamined the equilibrium mix of bank notes and specie in his discussion of the invariance of the total currency stock to the mix. Scrope (1830a, pp.11-13) proposed a 'law of proportion' in the currency, whereby the denominational structure of the currency was determined by the public's desire to be able to make change. Specie of lower denomination served as change for notes of larger denomination.[14] The law thereby determined the public's desired ratio of specie to notes and, what is identical, the cash-drain ratio for the banking system as a whole.[15] Scrope clearly saw that the ratio went into determining a currency supply multiplier of the sort derived in Section 1.3. Samuel Bailey (1840, pp.20-21) also recognised that the issues of banks were limited by the public's desired ratio of specie to notes. He argued that the ratio varied from district to district with the proportion of small payments customarily made in coin. This allowance made his formulation less rigid than Scrope's.

Writers in the Free Banking School continually praised the interbank note-exchange system as a device for insuring that any excess issue of notes by a single bank

12 Mises (1966, pp.434-48) bases his explanation of the limits to note circulation under free banking on the same assumption. He states that it would be possible, at the cost only of convenient exposition, to allow for individuals to hold notes of several banks or of no bank. This is true provided that each of the multiple note-holders diversifies his holdings in definite proportions.

13 In modern theories of 'spatial' competition employing the tools of topology, product 'space' is similarly conceived in a way not necessarily related to geography.

14 Scrope did not stop to explain why all currency was not held as small change. The obvious reason is that each agent weighs the convenience of being able to make change at the margin against the convenience of carrying fewer notes or coins of higher denomination. The denominational division between coins and paper money in a system free of legal restriction on minimum bank note denomination would be determined by similar private calculations of convenience. See Section 1.3.

15 That is, an issuer who had to give change for a certain proportion of his £1 notes, and had likewise to issue a fixed proportion of his notes in the £1 denomination, would find that any addition to his circulation would be accompanied by a proportionate drain of vault cash. Scrope's law of proportion assumed the marginal ratio to be equal to the average ratio; that need not be the case.

would be immediately returned to that bank for redemption. As we noted in Chapter 4, they pointed to Scotland's as the best-developed system of the time. Their emphasis on the interbank note exchange as a reflux mechanism stemmed from the fact that few notes were redeemed over the counter by members of the public. Excess notes, or notes of undesired brands, were instead deposited by their holders in the banks of their choice. The banks accepted one another's notes at par. The receiving banks then cleared their mutual claims against one another at the note exchange. As explained in Chapter 1, an over-issuing bank suffered adverse clearings and consequent loss of reserves when it confronted a volume of claims against itself greater than the volume of claims it had collected against its rivals since the previous clearing. The more conservative banks correspondingly enjoyed positive clearings and a consequent gain in specie reserves.

The efficacy of the Scottish system for disciplining issuers was brought to the attention of English writers by the testimony of Scottish bankers before two parliamentary committees (BSP, 1826a; BSP, 1826-7a) inquiring into the small-note circulations of Scotland and Ireland. Sir Henry Parnell (1827, pp.148-70) quoted that testimony at length in his widely cited free banking tract. Thereafter a reference to the Scottish system was *de rigueur* in free banking pamphlets and articles. The most thorough exposition of the Scottish system by a pamphleteer was that of Robert Bell (1838, pp.12-16).

Parnell (1827, pp.86-87, 157) offered some elements of an invisible-hand explanation of the origin of the note-exchange institution,[16] presumably in order to show that its existence was no lucky accident. In a plural issuing system 'each bank will daily have paid into it the notes of some of the other banks'. No bank reissues its rivals' notes, as it makes a greater profit by putting its own notes into circulation. 'The banks will therefore be driven to exchange the notes so paid in with each other,' having no use for the rivals' notes but an urgent use for the specie for which the notes are redeemable.[17]

The erroneous view that a note-exchange mechanism was impotent to check over-issues by a single bank in a plural issuing system was put forth most systematically by Benjamin Bullion,[18] J. R. McCulloch, and S. Mountifort Longfield.

Bullion (1826, pp.13-17) illustrated by two elaborate tables the proposition that a note exchange would not automatically generate adverse clearings against banks whose notes commanded a larger-than-average share of the total circulation. That is, an equilibrium with zero net clearings between banks i and j was possible even with $N_p^i \neq N_p^j$. He then moved from that perfectly correct proposition to the false conclusion that the

16 The writings of the Free Banking School may be regarded as an important station for invisible-hand theorising midway between Adam Smith and Carl Menger. The monetary tracts of Samuel Bailey, as we shall discuss further below, are especially important in this regard.

17 Presumably, though Parnell did not say so, (1) a bank that refused to accept any notes but its own, or agreed to accept them only at a discount, would experience reduced business and forgone profits as a result, and (2) participation in a regular note exchange is more profitable for each participant than irregular redemptions. See our account in Section 1.5.

18 Bullion (1826, pp.6, 21) was one of only a few British writers to favour a purely metallic currency. Another, also pseudonymous, was Daniel Hardcastle (1826).

note exchange would show zero net clearings whatever the issues of any bank. His intermediate step was the assumption that note-holders would pay notes into the banks in whatever actual proportions they happened to find them in circulation. (In fact, his tables were constructed on the assumption that 100 per cent of the notes in circulation were paid into the banks between clearings.) That assumption amounted to a denial of the existence of an independent N_p^{i*}, or equivalently to the assumption that members of the public treat various note brands as indistinguishable. For that assumption to hold true, diseconomies of scale in quality competition (including geographical competition) among note brands must be ruled out.

Bullion's model has another counter-factual implication. As net clearings are always zero, there is no point in engaging in note clearing. Bullion (pp.14-15) recognised that implication, commenting that the banks may just as well lay aside one another's notes as return them. He added that each would thereby keep more of its own notes in circulation. This amounted to suggesting that one banker should be willing to accumulate another's notes *ad infinitum*, or equivalently should be indifferent between holding the other's notes and holding specie, provided the other banker did the same. That bankers did not in fact do so suggests that the whole point of engaging in note clearing was not simply to cancel equal reciprocal claims. It was rather to discover and settle the *inequality* between their reciprocal claims.

McCulloch and Longfield in effect seized on the lacuna left by King's geographic theory of bank-note demand, namely the failure to explain relative market shares among banks with overlapping spheres of circulation, in building models of note-exchange ineffectiveness. Although McCulloch (1826a, p.283) had earlier asserted the result, he first sketched the model in his notes on Adam Smith (1828, pp.304-05). McCulloch (1831, p.48) stated explicitly his assumption that a note-holder treats notes of various banks within a given locality as indistinguishable: 'So long as he believes the different notes to be alike good, he will shew no preference to one more than to another, but will return them indiscriminately upon their issuers' when the total stock is excessive.

We will here reconstruct McCulloch's (1831, pp.46-49) 10-bank model rather than Longfield's two-bank model, though their logic was identical.[19] Suppose there initially to be 10 banks of issue (A through J) in a given city, with $N_p^A = N_p^B = ... = N_p^J =$ £1,000,000. Bank A then decides to place an additional £1,000,000 of its notes in circulation. It does so by discounting at a lower rate of interest for a time or by some other means. The total circulation rises from the equilibrium level of N_p = £10,000,000 to the level of N_p = £11,000,000, of which 1/11 is excess. Under McCulloch's assumptions, as under Bullion's, note-holders shed the excess indiscriminately by redeeming 1/11 of each issuer's notes for gold. The gold is exported. The final result is that N_p^A = £1,818,181, while $N_p^B = N_p^C = ... = N_p^J$ = £909,090, and once again the total circulation N_p = £10,000,000.

19 For a secondary account of Longfield's analysis, see Moss (1976, pp.162-64). Moss regrettably declares the analysis to be 'quite sound' so long as the notes of the expansive bank continue to trade at par. O'Brien (1970, p.173) is no less uncritical in characterising McCulloch's over-issue scenarios as 'significant advances in the theory of central bank control'.

Longfield (1840, pp.218-19) performed the exercise more completely by keeping track of changes in the banks' specie reserves, which McCulloch did not do. Supposing each bank in McCulloch's example initially to hold specie of £200,000, or a 20 per cent reserve against its notes, in post-reflux position their reserves would be S_A = £18,181, $S_B = S_C = ... = S_J$ = £109,090. Bank A would be reduced to a 1 per cent specie reserve while the others would be reduced to a 12 per cent reserve. Were the banks instead assumed to hold initially less than £181,818 in specie, Bank A would be entirely drained.

McCulloch believed that his exercise demonstrated 'the power of any one opulent bank, to occasion a heavy drain for bullion, and great distress and embarrassment throughout the country. All that would be required to produce these results would be, that she should add considerably to the amount of her issues'. Her ability to do so except insofar as checked by eventual external drain, was taken for granted. Bank A might desire to undertake an expansion, he commented, for any one of several reasons: (1) to increase short-term profits; (2) to increase long-term profits by the sacrifice of short-term profits; or (3) to 'weaken and embarrass her rivals'. The first two of these possibilities are mutually exclusive and, assuming the bank to be solely profit-oriented, jointly exhaustive. The third possibility, considered as a suggestion that predation may be a profitable short-run or long-run strategy, may be subsumed under the first or the second possibility.

For the expansion to be profitable in the short run, it must be the case that Bank A's optimal specie reserve, as a function of its outstanding circulation, is lower than its initial reserve. Supposing the initial position to have been a profit-maximising equilibrium, Bank A must suddenly discover that its cost curves have fallen. It is then a natural competitive outcome that Bank A emerges in the post-reflux position with an enlarged market share. The drain of gold from the economy as a whole, though McCulloch considered it 'mischievous', is simply an export of gold in exchange for goods now more highly valued. The change is due to Bank A's newfound ability to produce reputable bank notes with lesser gold input. The export of gold in exchange for goods represents a social capital savings of the sort praised by Adam Smith (1976, Vol.1, p.309) as the chief benefit of substituting paper currency for gold. What McCulloch's model depicted was thus not a recurrent phenomenon but a once-and-for-all transition to a new equilibrium position based on lower bank-note production cost data.

McCulloch himself, however, said nothing to indicate an assumption of a fall in costs. Scrope's (1832, pp.451-52) critique of the model focussed on the unprofitability of an expansion in the absence of a change in the cost data. Scrope made the point that a profit-maximising competitive bank would not want to expand its circulation arbitrarily because it would already be fully extended. Further expansion required, as McCulloch had noted in passing, discounting at a lower rate of interest or on lighter security. In terms of our model of Section 1.2, Scrope was invoking the left-hand side of Equation (7): the marginal net revenue from holding bills bought with notes was a declining function of the volume of bills held. He did not discuss the right-hand side - that is, the operating and liquidity costs of keeping notes in circulation - but as we have seen he did realise that the public's desired stock of any issuer's notes was a determinate magnitude. He saw clearly that the problem was not for Bank A *once* to push out extra notes, but for 'the over-issuing bank to *keep* afloat any larger amount of notes than is warranted by the credit it enjoys in public estimation as compared with other banks'. Scrope neglected, again, only to consider maintenance of the bank's reputation as a variable cost of keeping notes in circulation.

Longfield thought that the model demonstrated that 'a bank of issue may have its gold drained off by a rival which, if it has capital enough, may even ruin its competitor, without any injury to itself'. In fact, as his own account showed, Bank A's reserve loss was far greater than any of its rivals', even on the McCulloch-Longfield assumption of public indiscrimination among bank-note brands. Longfield invoked that assumption to argue that the new position would be one of zero adverse clearings. He reformulated it into the logically equivalent proposition that 'the circulation maintained by each bank will be proportioned to the amount of business done by it', that is, that a bank can *maintain* in circulation whatever share it *puts* into circulation. Scrope, as we have seen, grasped the logical independence of these two magnitudes, one a stock and the other a flow. The distinction was also made by Thomas Joplin (1837, pp.54-55):

> 'The amount of a banker's circulation does not depend upon the sum of notes he pays over his counter, but upon their remaining out after they are issued. The banks that pay the smaller amount of notes over the counter, have not infrequently the larger amount in circulation.'

Longfield took the analysis of predatory expansion a step beyond the post-reflux position of McCulloch by recognising that the non-expansive Bank B, finding its reserve ratio reduced, might want to react by contracting its issues. By doing so, he thought, Bank B 'thereby enables its rival to extend its business still more, until at last the more moderate bank is obliged to give up business altogether'. In fact, the process is not cumulative. Should Bank B contract while Bank A expands by an equal amount, there would be no change in either bank's reserve position under the McCulloch - Longfield assumptions, since there would be no external drain. Bank B would simply fall back to a smaller circulation in accordance with the reserve ratio it wanted to maintain. Note that for Bank A to expand still more implies that its reserve ratio falls still farther. Either Bank A took the reactions of its rivals into account when considering its initial expansion - to do so would require knowledge of their desired reserve ratios - or Bank A is completely indifferent to its reserve position. In the latter case, Bank A neither being a profit maximiser nor having a desired reserve ratio, we should not be surprised that its market share seems indeterminate.

For Bank A to drive its rivals out of business through predatory expansion it must exhaust their specie reserves. If each rival bank, as Longfield assumes, initially has reserves equal in size to Bank A's, then Bank A cannot possibly accomplish that aim. The expansive bank loses reserves more quickly than its rivals through the very process of expanding its share of the circulation, which under the assumption of note-holder indiscrimination expands its share of the reserve losses through external drain.[20]

Scrope (1832, pp.451-52) laid to rest the notion that instability might actually arise in a competitive issuing system from the 'notable mare's nest' that McCulloch had discovered, namely the second possibility 'that a bank which will submit to do business at a loss may thereby increase its business'. McCulloch had failed to see

> '...that the increased business will only be kept so long as the loss is submitted to; and that banks, such as are likely to establish themselves in the confidence of the commerce of the metropolis, are not likely to carry on their business on any such ruinous plan.'[21]

The McCulloch-Longfield model was at bottom a model of predatory pricing and no more plausible than any other such model. Scrope added the observation that over a century's experience with free banking in Scotland had evinced no trace of an inherent tendency toward such predation.

Scrope (1832, pp.452-53) went on to make a less appropriate argument against McCulloch, made also by Parnell (1833, pp.71-89), to the effect that no single bank could over-issue because the others would act in concert to discipline it once they detected its behaviour. This argument was needless, since under the simple assumption of a limited demand to hold any single bank's notes the impersonal mechanism of the note exchange was sufficient to check over-issues by any single bank. It was also implausible, suggesting that collusion among the banks was possible in respect to shares of the bank-note circulation. Elsewhere both authors relied on the proposition that unlimited competition would operate among the banks with respect to discount and deposit rates.

[20] Longfield did note that the expansive bank must have 'capital enough' to accomplish through predation the aim of driving its competitors out of business. Assuming m competitors, where initially

$$N^A = N^B = \ldots = N^i = \ldots = N^M$$

and

$$S_B = S_C = \ldots = S_i = \ldots = S_M,$$

the condition on bank A's reserves is that

$$S_A > S_i + \frac{(\Delta N^A)^2}{mN^A + \Delta N^A}$$

where ΔN^A denotes the addition bank A makes to the circulation. Note that the right-hand side approaches S_i as $m \to \infty$. The explanation is that as the number of rivals increases, bank A's share of the reflux and reserve drain decreases.

[21] Scrope's reference to the 'metropolis' reflected McCulloch's presentation of his model as an argument against allowing joint-stock banks of issue to compete with the Bank of England in London.

5.2.2. *The Competitive Issuing System as a Whole*

J. R. McCulloch (1826a, p.283) was correct in arguing that interbank adverse clearings were not a check against whatever degree of expansion was common to all issuers. Supposing all issuers to expand in the same proportion, 'the increased amount of notes that might be payable by a particular company would, under such circumstances, be met by the equally increased amount that would be receivable by it,' and no interbank adverse clearings would arise. No important theorist of the Free Banking School explicitly denied this as a hypothetical proposition.[22] Parnell (1827, p.89) explicitly acknowledged its correctness. Unlike McCulloch (1826a, p.285), who attributed a 'power to concert measures' to the more than 30 Scottish banks of issue, however, Parnell and others found the scenario of co-ordinated expansion implausible as a description of actual events. It supposed collusion among the banks to achieve a temporary gain that would eventually result in a system-wide loss of reserves through external drain.

Loyd (1857, pp.97-99) argued, following an earlier suggestion of McCulloch (quoted by Loyd, pp.148-49), that competition would force issuers to expand together spontaneously, without any need for collusion. Each bank 'endeavouring to encroach upon the other, and to appropriate to itself, at the expense of its competitors, a larger proportion of the whole circulation,' it followed that 'an expansion of one issuer may very naturally lead to a corresponding expansion by the other issuers'. This correspondence did not hold for a contraction, however. A contraction by any one issuer would be seen by each of the others 'as a favourable opportunity, not for contracting, but for expanding his own issues'. Gilbart (1841a, p.60) pointed out that under Loyd's view 'it is difficult to conceive how the total circulation of the country could ever be reduced,' whereas in fact the total circulation did vary up and down from month to month.

Loyd's error, like McCulloch's, was a failure to see that the competition for market shares was costly. As an anonymous pamphleteer (1836a, p.8) argued, an enlarged circulation was a matter of convincing the public to *hold* more of one's notes, rather than simply a matter of convincing them to *take* more notes by discounting promiscuously. Under competitive conditions 'it is only by extended connection and public confidence (two very sluggish mediums) that a bank can obtain . . . extensive circulation of its paper'. An issuer who merely pushed a greater volume of his notes out, without undertaking the investment necessary to increase the demand to hold them, would quickly confront adverse clearings. Loyd, assuming that note-holders treated various note brands as indistinguishable, failed to recognise that a more conservative bank would be rewarded with positive clearings.

Thomas Joplin (1826a, pp.43-46) offered a more sophisticated case under which competitive issuers might non-collusively expand in unison. It was a case in which all banks responded to a common signal. Joplin recognised that whereas adverse clearings would prevent any one bank from expanding out of step with the rest, they would not check a simultaneous proportionate increase in issues by all banks. Such an expansion

22 Mundell (1833b, pp.5-6), in a thoroughly muddled series of rhetorical questions, did suggest that frequent note exchanges 'make a general over-issue impracticable'.

could only come about, he thought, were the banks to respond in common to a rise in the loan market interest rate brought about by an increase in demand (an outward shift in the demand curve) for loanable funds. That, at least, seems the most plausible interpretation of his statement:

> 'Excessive issue can, therefore, only take place by all the banks throughout the country increasing their issues at the same time, and this can only be produced by an increase in the value of capital, and a general and simultaneous increase of demand for it throughout the country.'

Those issues would be excessive in that they would drive up prices. Joplin was evidently thinking of a case in which an increased supply of bonds (or demand for loans), unaccompanied by an increased demand to hold notes, would draw increased issues out of the banks.

Joplin (1832, pp.101, 108-09, 111-13) later made his argument more explicit but at the same time less compelling. It was now clear that in his view an excess demand for loanable funds would enlarge the country circulation. But he explicitly denied that a rise in the loan market interest rate was part of the story. Instead he believed that the supply of bank notes via loans by country bankers was perfectly elastic at a fixed rate of interest:

> 'The interest of money, when it is abundant, is not reduced, but the circulation is diminished; and on the contrary, when money is scarce, an enlargement of issues takes place, instead of a rise in the rate of interest. The Country Bankers never vary the interest they charge.. . . [A Country Banker] must, of necessity, have one fixed charge, whatever it may be: for he can never know what the true rate is.'

Joplin went on to contrast this with the hypothetical working of a loan market under a purely metallic currency, in which case he recognised that the interest rate would adjust to clear the market for loanable funds. His denial of this mechanism in the case of redeemable bank notes - his belief in a perfectly flat rather than upward-sloping supply curve implicitly rested on the erroneous assumption that competitive banks could issue notes unlimitedly without concern for the impact of marginal expansion on their reserve positions. Once it is recognised that a permanent expansion of a bank's circulation entails rising costs (what our model identifies as marginal operating or liquidity costs) and that an expansion unaccompanied by an enhancement of note-holding demand or reserves must under competitive conditions soon result in an excess demand for reserves, even if all banks expand in unison, it is clear that the supply curve of loanable bank liabilities must be upward-sloping.[23] A bank of issue in its equilibrium posi-

[23] In the case of a single bank expanding alone from an initial equilibrium position, expected liquidity costs are directly increased by an expected increase in adverse clearings. (As conventional banking theory shows in the case of a deposit expansion, a small bank can expect adverse clearings fully equal to the quantity of new notes issued, if no operating costs are incurred to increase note-holding demand and demand is otherwise unchanged). In the case of in-concert expansion by all banks, even leaving

tion would have no incentive to expand its issues further in the absence of a fall in costs or a rise in loan market interest rates.[24]

A bank of issue should indeed, under our model of issuer optimisation, respond to a higher market interest rate on commercial bills (or loans) by issuing more liabilities and increasing its purchases of bills (making more loans). In competing to get more liabilities held by the public, however, the banks should also increase liability-servicing expenses and bid up deposit interest rates, increasing the public's desired deposit holdings. With both loan and deposit rates of interest rising in unison as the result of an increase in the real demand for loanable funds, the net result should be an increase in bank intermediation (increased loans or bill holdings matched by increased deposits). An excess supply of currency should arise only to the extent that the public's and the banks' desired specie holdings are interest-elastic.

Although none responded directly to Joplin's arguments that under free banking an increased demand for loanable funds would draw an excess stock of currency from the banks, a number of free banking advocates argued that the payment of interest on bank deposits under competition served to draw quickly from circulation any excessive stock of notes.[25] The spread between the rate of interest paid on bank deposits and that (typically zero) paid on currency did indeed represent an opportunity cost of holding currency rather than its closest substitute. It was, as the Free Banking School saw it, a determinant of desired holdings of currency. This argument of course established a check only on the stock of currency outstanding and not on the sum of currency plus deposits. This does not, however, render it irrelevant in light of modern concern with variations in the broader aggregate. From a modern view of monetary theory the Free Banking and Currency School disputants' focus on currency is defensible on two grounds. First, currency was a relevant aggregate to the extent that currency alone served as a routine medium of exchange. Outside London demand deposits were not

an individual bank's mean adverse clearings unchanged, the bank's expected liquidity costs are increased by an increase in the variance of its adverse clearings (i.e. a relative thickening of the tails of the probability distribution over reserve losses, and thus an increase in the probability of running out of any given beginning amount of reserves) simply due to the greater volume of gross clearings associated with a larger stock of notes in circulation. See Selgin and White (1994, pp.1,723-4) for an illustrative model.

24 Hayek (1935, pp.15-17) regrettably quotes without criticism this latter passage from Joplin. He declares Joplin's 'the clearest explanation of the relations between the rate of interest and the fluctuations of the note circulation which had been given up to that time'. By this he must be referring to the implicit behaviour of the discrepancy between the market and natural rates, not to the explicit behaviour of the market rate, since the market rate is fixed.

Hayek's affinity for Joplin may seem odd in that Joplin holds the market rate constant while the natural rate rises, whereas Hayek's business cycle theory is usually viewed as one in which the market rate is pushed below a steady natural rate. Joplin is thus closer to what Wicksell thought the usual case (see footnotes 28 and 31 below) than to the case associated with Mises and Hayek. Hayek (1933, pp.144-48) in fact disassociates himself from Mises on this point and endorses Wicksell's usual case. Hayek (1933, pp.167-73) also expounds a Joplin-like expansion process in which the short-run supply curve for loanable bank liabilities is implicitly perfectly flat. For a critique of Hayek's argument, see White (1995).

25 Edwards (1830a, pp.501-02), Gilbart (1834, pp.133-35; BSP, 1841, Q. 1045), Knowles (1837, p.76), Bailey (1840, pp.20-24), R. Bell (1840, p.25), Macfarlan (1845, p.10), Kinnear (1847, p.47 n.).

typically subject to transfer by cheque and were therefore not a medium of exchange.[26] Second, payment of competitive interest on deposits means that the real-balance wealth effect operates only with respect to currency.

5.2.3. Over-issues by the Central Bank

Both the Free Banking School and the Currency School recognised the ability of the Bank of England to over-issue, though they differed regarding on what occasions the Bank had actually been guilty. Because the Free Banking School writers denied that any other bank could seriously over-issue, they needed to explain why the Bank of England was unlike any other bank in this regard. The thrust of their explanation, logically enough, was that the Bank operated under none of the checks against single bank expansion present in a multibank system. Bank of England notes (1) had no rivals for the London circulation, and hence entered no interbank note exchanges; (2) confronted no competition in London from interest-bearing demand deposits; and (3) were held as a reserve medium of legal tender by other banks, especially the London private banks. As a result, Bank of England notes faced a relatively pliable or passive demand to hold. The only check on the Bank's issues came from external drain. Gilbart (BSP, 1841, Q. 1,362) summed up:

> 'Although the Bank of England circulation is equally payable on demand, yet payment is never demanded (because the notes are considered as good as gold) till the foreign exchanges become unfavourable, and gold is wanted for exportation.'

Both the Free Banking School and the Currency School held that the check of external drain operated too slowly to prevent the Bank of England from fuelling a false trade boom with issues of cheap money. Joplin (1826b, p.44) gave an offhand estimate of the speed with which mechanisms acted to correct over-issues at various levels. A national over-issue was checked through external drain of specie, though that process 'takes a year or two before it operates'. A regional over-issue was analogously corrected by an 'internal balance of payments', this check operating within 'a month or two'. At the level of the single bank, the check was felt even sooner through adverse clearings: 'When there are more banks than one in a district, they act more instantaneously as a check upon each other.'

A spurious reason for distinguishing between the over-issuing capabilities of the Bank of England and the country banks, stemming from the real bills doctrine, was added by several of the free banking advocates. Mundell (1832a, pp.8-9; 1832b,

[26] For an illuminating defence of the distinction between the routine medium of exchange and other assets, see Yeager (1968, 1978, 1982). Consideration of whether the stock of the medium of exchange alone really ought to be regarded as the sole transmitter of monetary impulses, or of whether it alone can be 'involuntarily' held in the short run as a 'shock absorber' or buffer stock, would take us too far afield here. But note how unconvincing would be an argument claiming impotence for present-day monetary policy on the grounds that interest-bearing bank liabilities must soak up any excess supply of narrowly defined money.

pp.12-13; 1833a, p.6; 1833b, pp.6-7; 1834, pp.86-88; 1836, pp.32-33) was tireless in advancing the notion that the ability of the Bank of England to over-issue hinged on the nature of the assets it purchased, namely government bonds, mortgages, and other assets supposed to be unrepresentative of the needs of trade. There was a strong flavour of this doctrine in Mushet (1826, pp.157-59, 180-83). Gilbart (BSP, 1841, QQ. 1,016, 1,027, 1,157-62) succumbed to it fully. We shall examine in Section 5.5 the role played in the debates by the real bills doctrine, the needs-of-trade doctrine, and related ideas.

Several views existed within the free banking camp as to why the Bank of England's directors had undertaken unsustainable expansions of its issues. Many writers implied that the bank directors had simply erred due to remediable ignorance or incompetence. Robert Bell (1840, p.28; 1838, pp.21-23) explicitly took that view, charging them with 'flagrant mismanagement' and with being 'activated by unintelligible caprices'. He noted in addition that there was no reason to expect any better from a corporation legally sheltered from competition. Scrope (1833b, pp.419-20) offered a very different interpretation. The action of the Bank could be understood not as uninformed error, but as calculated pursuit of profit through manipulation of its circulation. He accused the Bank of 'having a direct pecuniary interest in creating, not in preventing fluctuations'. The Bank acted like a typical sheltered monopolist, 'working the supply up and down so as to profit from its oscillations at the expense of the public'. Scrope unfortunately left unspecified the mechanism by which he believed oscillation would increase the Bank's profits.

Samuel Bailey (1840, pp.38-41) took a third position, perhaps the most compelling. To him the 'inconsistent and mischievous' behaviour of the Bank of England was neither intentional nor avoidable. The Bank's inability to steer a neutral course demonstrated 'the difficulty of arriving at any satisfactory system of regulating the currency under a monopoly'.A monopoly supplier of currency must of necessity resort to 'arbitrary assumptions and empirical expedients', as 'the elements necessary for the precise determination' of its proper balance-sheet composition 'are within no man's reach'. Bailey was arguing the impossibility of precise central planning of the currency. The Bank, limited to 'watching the signs of the times', necessarily lacked the specific information required to pursue a neutral monetary policy. It was therefore bound to err. We shall examine this line of thought further in Section 5.6.

5.3. Theories of the Trade Cycle

In Chapter 4 we indicated that the Free Banking and Currency Schools held different monetary theories of the trade cycles. In this section we will contrast those theories. As statements of business cycle theory they are important to the history of economic doctrines for serving as the points of departure for developments of monetary theories of the cycle in the 20th century, especially by Wicksell and his successors. Ludwig von Mises (1966, pp.438-40) and F. A. Hayek (1935, pp.15-17), for example, explicitly acknowledged the doctrinal roots of their monetary theories of the cycle in the statements of this era.[27] Hayek (1935, p.2) noted that 'anyone who has studied the monetary literature of the first half of the nineteenth century will agree that there is hardly any idea in contemporary monetary theory which was not known to one or more of the writers of that period', a claim that holds up even today.

The most thorough exposition of the Free Banking School theory was given by Robert Mushet (1826) early in the free banking debate. Mushet explained the boom and bust exclusively as the results of the expansion and subsequent contraction of Bank of England notes. He explicitly criticised (p.110 n.) the theory of Tooke (1826) that speculation rose and fell with scarcity and abundance of real output. To Mushet (p.152) the Bank of England was 'the fountainhead, the first cause' of both the upturns and the downturns in trade that England had experienced.

The Bank of England expanded its circulation either through loans and commercial discounts or, more importantly, through open-market purchases of government bonds, mortgages, or stock. Mushet argued that an undue expansion of its issues created excess supplies of money and credit, artificially depressing rates of interest and increasing bond prices. It thereby fuelled (p.108 n.) a speculative run-up of prices: 'Every man must feel, from the facility of obtaining credit, from an enlargement of the currency, how much the powers of speculating are increased.' To 'this cause alone' Mushet (p.142) attributed 'the whole of the speculations, now and heretofore, that have appeared to begin in prosperity, and to end in the distress and ruin of thousands'.

An expansion of country issues followed passively as prices, and hence the nominal demand to hold money, rose throughout the nation. The high prices were spread by interregional arbitrage (pp.147-49). Only the Bank of England had the 'power and capital' to instigate such an expansion.

The Bank was, however, inherently unable to sustain its expansionary lending policy, and hence the boom, indefinitely. The boom could be sustained only by continued expansion of the currency stock. Such expansion would eventually bring into play the forces of external drain. The excess stock of money would stimulate increased purchases of foreign goods, draining specie from the Bank's vault in settlement thereof. Fear of exhausting its specie reserves would compel the Bank to abandon its expansionary course. With contraction came a rise in interest rates and recession.

Two capsulisations of Mushet's theory bear quotation here. After noting that the Bank of England could not expand its issues much by discounting at the market rate of interest, as the 'demand for currency' is generally steady, Mushet (p.156) made the following statement noteworthy for its proto-Wicksellian flavour:[28]

27 Not recognising the existence of the Free Banking School, however, Mises identifies the earlier development of this theory only with the Currency School. The Free Banking School theory is actually closer to his. The Currency School theory is, however, closer to Hayek's: see footnote 24.

28 Note that Wicksell's cumulative expansion process, in which expansionary lending takes place at a rate below the 'natural' rate, goes on indefinitely only if the crucial institution of redeemability for bank liabilities is absent. The process is otherwise checked by reserve losses, as Wicksell (1967, Vol.2, p.189) himself noted.

> 'The Bank, by discounting at 3 or 4 per cent, might certainly for a time increase the amount of her paper, if that rate of discount was below the market rate of interest; but it must be evident, from the extensive speculations which the abundance of money would create, that the Bank could not continue that rate of discount, if subject to cash payments; the increase of currency would lead to the exportation of gold, and she would, in self-defence, be obliged to contract the currency or suspend payments. In contracting the issues, the rate of interest would also rise. This is precisely what the Bank has lately done; but witness the ruinous consequences of the attempt.'

A few pages later Mushet (p.158) emphasised that the same self-reversing process would follow an attempt to expand through a policy of open-market purchases. Such a policy,

> '...without any legitimate demand, increases the amount of circulation. Its tendency, therefore, is to foster that spirit of speculation and gambling that uniformly accompanies an over-abundant state of the currency. Its effect on the price of funds must be to maintain them at a higher market price. ... But perhaps the strongest argument against such accommodations by the Bank is her inability, from the very nature of her institution, to continue them. ... It leads to such an increase of the currency as creates and fosters the spirit of speculation; the maintenance of which is consistently demanding an increase of currency, as its natural support, rendering it, in the end, profitable to export gold; and the safety of the Bank, sooner or later, requires a suspension of such accommodations, the currency is contracted, and stocks fall to their natural level.'

Later Free Banking School spokesmen indicated that they held views of the cycle similar to Mushet's. They variously emphasised the power and proclivity of the Bank of England to over-issue, to drive down the rate of interest, to initiate a temporary speculative boom, to sweep the country banks along in its expansion, to drive specie out of the country, and to plunge the economy into crisis by its subsequent necessary contraction.[29]

Of these writers only James William Gilbart was able to add much to the theory. Gilbart (1834, pp.145-46) was among the earliest to point out that an excess issue of notes may bring about an external drain of specie in two ways: not only through the effect on the balance of trade in commodities noted by Mushet, but also through the effect that depressed interest rates have on financial flows. Lower domestic interest rates prompt investors to purchase bills from abroad, adding to the outflow of specie. In a later work Gilbart (1841a, p.49) quoted the testimony of Tooke (BSP, 1840, Q. 3,769) in support of this proposition.

Gilbart (1841a, pp.47-49) in that work also made the important point that the specific impact of a monetary injection on prices will depend on the way in which the

[29] See Parnell (1827, pp.108-09, 118; 1833, pp.6-13), Scrope (1832, pp.448-49), Mundell (1832a, pp.9-13; 1832b, pp.11-13), Anonymous (1836a, p.6), Joseph Hume (*Hansard*, 1839, XLIX, cols. 6-36), J. B. Smith (1840a, pp.16-17), Gilbart (BSP, 1841, QQ. 952, 979, 1(94-6), and Kinnear (1847, p.35).

holders of excess money decide to spend it. Relative prices will be disturbed by the spending process:

> 'When money is abundant, people are more disposed to make purchases or engage in speculation; but the particular direction in which the money may be employed, depends upon a variety of circumstances. ... the price of each commodity will advance according to the quantity of money that is brought to bear on that particular market. ...thus, artificial operations on the currency ... by operating unequally on different commodities, might derange their relative values.'

Gilbart (pp.51-52) contributed further the observation that, as some portion of the notes issued by the Bank of England in loans comes back to the Bank as deposits, an increase of deposits at the Bank indicates liberal issuing to the extent it is unaccompanied by an increase in the Bank's specie holdings or a decrease in its circulation. He might simply have said, what is equivalent, that changes in the total of specie plus Bank of England notes and deposits held by the non-Bank of England public measure the bank's expansiveness. These passages are important for their recognition of the transmission of monetary impulses through changes in monetary aggregates broader than currency. Gilbart (1841a, pp.51, 53) suggested, in regard to bills of exchange as well as deposits, that the monetary influence of an asset stock depends not only on its magnitude but also on its rate of turnover against commodities, that is, the extent of its use as a medium of exchange.

The Free Banking School's monetary theory of the cycle was shared by some members of the Currency School. This may be seen in the following account of the sequence of events by Samson Ricardo (1838, p.12):

> 'The Bank finds its amount of specie becoming inconveniently and unprofitably great; ... means are then taken to increase the paper circulation; money is made still more abundant; this engenders and excites speculation, prices rise, the tide turns, the currency becomes redundant, bullion is withdrawn from the Bank, and the securities increase as the stock of specie diminishes.'

Robert Torrens (1840, pp.31, 42-43) and James Pennington (1840, pp.83-84), both of whom may be considered Currency School members, similarly explained trade cycles as the consequence of Bank of England over-issues.[30] Pennington valuably pointed out that the course of the impact of a monetary injection by the Bank in purchase of government debt would vary according to whether the injection went directly to the government, which spent the new funds on goods and services, or went to the open market unmatched by government borrowing, so that interest rates were first depressed.

It is noteworthy that Samson Ricardo (1837, pp.19-20) and Torrens (1837a, pp.45-48) were the Currency School's writers most in the bullionist tradition. (For

30 Mints (1945, p.101) excludes Pennington from the Currency School. Pennington (1840, pp.87-88), more alert to the monetary function of deposits than most of the Currency School, supported a version of the currency principle broadened to encompass deposits (see Section 5.4).

Torrens this was a reversal of the position he had taken in the bullionist controversy, whereas for Samson Ricardo it was a continuation of the position taken by his brother David.) Both, like Mushet, recognised that the issues of the country banks were governed by those of the Bank of England. They were correspondingly most ready to attribute responsibility for initiating trade cycles to the Bank's actions. Within the bullionist literature, striking elements of the theory tracing out the consequences of Bank of England over-issues may be found in the work of Henry Thornton (1802, pp.195, 237-39, 250, 253-56). Though Thornton was dealing with the case of (temporarily) irredeemable bank currency, his analysis was relevant to the case of redeemable monopoly bank issues in the short run, that is, in an expansionary period that gives rise to an external drain. In particular, Thornton recognised that the Bank could readily expand its circulation by discounting at a rate below the equilibrium rate of interest, the latter determined by the going rate of mercantile profit.

The Currency School mainstream of J. R. McCulloch, Samuel Jones Loyd, and J. Mountifort Longfield, on the other hand, viewed monetary expansion only as an important intermediate link in the causal chain of the typical business cycle. To these Currency School theorists the initial disequilibrating impulse came from non-monetary sources.[31] Banks of issue then responded to the impulse in a deviation-amplifying way. This view was consistent with their belief that the country banks, acting in supposed unison, were typically a disequilibrating force of greater importance than the Bank of England. It was also consistent with their policy position that the monetary system should be made to behave as it would in the absence of banks of issue, that is, as it would under a pure specie currency. The 'currency principle', which we discuss in Section 5.4 below, was designed with this end in mind.

In McCulloch's (l837a, p.63) account, an initial equilibrium is disturbed by an increase in the demand for bank loans for speculative purposes. This prompts increased country bank issues. The growing money stock, rising prices, and speculation feed upon one another until external drain finally sets in:

> 'Suppose ... that the exchange is at par, that is, that bullion is neither leaving the country nor coming in. ... When any thing occurs to occasion a rise in the price of corn, or of any other leading article; to allay any previous panic or discredit; or to increase the public confidence; the spirit of speculation is immediately at work, and an increase of the issues of the joint-stock, and private banks invariably follows. The Bank of England might not, and, it is probable, in such a case would not, make any addition to her issues. But the provincial banks, seeing the exchange at par, and paying but little attention at any time to its fluctuations, by which they are only indirectly and remotely affected, would certainly increase their issues, and be more liberal of accommodation. The impulse once given, *vires acquirit eundo* [it gathers force by going]. The additional facilities for obtaining

[31] Wicksell, believing the divergence between the natural and market rates of interest typically to originate in an unmatched rise in the natural rate rather than in a bank-created lowering of the market rate (this to explain 'Gibson's paradox' of the procyclic movement of interest rates), was thus very much in the Currency School tradition. I am indebted to David Glasner for this observation. See footnote 24 on Joplin as a Currency School thinker.

> money, would enable individuals to keep back a portion of their produce from market, in anticipation of an advance; the public confidence, which is always greatest when prices are rising and the supply of money is increasing, would be still further augmented; and this in its turn would, no doubt, lead to an additional issue of notes. A period of adventitious and deceitful prosperity would most likely follow, till at length the currency becoming overloaded, there would be a continued drain upon the Bank for gold for exportation; and this, by narrowing the circulation, in London, and increasing the difficulties in the way of obtaining pecuniary accommodation there, would be sure in the end to occasion a fall of prices, and a general state of discredit and embarrassment, and it may be bankruptcy.'

McCulloch (pp.64-74) considered the trade fluctuations ending in the recessions of 1792, 1825-6, and 1836 to have conformed to this sequence of events. The Bank of England erred on the last occasion only by its failure to counteract the mischievous actions of the country and joint-stock banks.

Loyd (1857, pp.32-33) depicted the causal sequence in the same way as McCulloch. Bankers were apt to be swept along 'at a period when the whole trading and mercantile world are operating under one common impetus of expansion'. Their accommodating expansion of note issues would then further stimulate trade. An important element of monetary reform, to Loyd's (pp.33-34) way of thinking, was therefore denial of the right of note issue to commercial bankers. Loyd (p.167) explicitly denied that the boom had a monetary origin: 'Fluctuations in the amount of currency are seldom, if ever, the original and exciting cause of fluctuations in prices and in the state of trade.' Management of the currency 'seldom originates, but it may and often does exert a considerable influence in restraining and augmenting the violence of commercial oscillations'. Like McCulloch, Loyd (p.174) criticised the Bank of England only for failure to contract soon enough, not for having stimulated trade by over-expanding.

Loyd (1857, p.131) believed that although a proper currency system would moderate cycles, it could never eliminate them. They were in large part non-monetary in character:

> 'So long as human nature remains what it is, and hope springs eternal in the human breast, speculations will occasionally occur, and bring with them their attendant train of alternate periods of excitement and depression.'

That his outlook ultimately left the leading spokesman of the Currency School with an eclectic - one might say hopelessly eclectic - theory of business cycles is clear from the following position statement (Loyd, 1857, p.164):

> 'The phenomenon ... [of] the fluctuations of prices and the alterations of commercial affairs, is not attributable to any one cause exclusively: it is the result of many concurring causes, dependent each upon different principles, which ought all to be carefully analysed, and afterwards weighed against each other.'

Longfield (1840, pp.222-23) also advanced the notion that business cycles were driven by waves of optimism and pessimism. The wave of optimism was first swollen by liberal bank lending, and then dashed on the rocks of the credit contraction prompted by external drain. He went further than McCulloch or Loyd by completing the circle: The crash gives rise to an internal drain and period of further contraction, setting the stage for a gradual revival of trade. The revival is first cautious, but eventually confident, and soon once again over-confident. Longfield predicted 'a perpetual vicissitude of trade' and in print arranged the phases of the trade cycle in a great unbroken circle: 'Caution - Confidence - Liveliness Over-Trading - Great apparent prosperity Sudden Cessation - Paralysis - Distrust - Panic - Bankruptcies - Caution - Confidence -', and so on. He estimated the period of the circle to be about five years.

Though we may usefully identify the McCulloch-Loyd-Longfield view as the Currency School's (partly) monetary theory of the trade cycle, we should note that Robert Bell (1838, pp.6-7; 1840, pp.9-16) of the Free Banking School concurred with the proposition that the initial phase of the cycle was of non-monetary origin. Parnell (1827, pp.48-51, 147) also took this view in his first work, though not in his second (1833). In their eyes the Bank of England had then been guilty of exacerbating the initial disturbance in a way that a self-regulating free banking system would not.

Thomas Tooke (1840, pp.245, 277) of the Banking School propounded a theory of the trade cycle according to which both the Bank of England and the country banks were, or at least could be, entirely blameless participants. He believed, from his historical study of price movements, that relative price discrepancies instigated the typical speculative boom. The boom might be financed entirely by an undue expansion of trade credit prompted by 'the excess of confidence', though 'over-banking' might also play a permissive role. The over-optimistic period naturally ended in disappointment, bringing distrust and a collapse of trade credit. In rebuttal to the monetary theories of the cycle, Tooke commented: 'An extension of bank notes, and a subsequent contraction, have been commonly the consequences, and not the causes, of occasional undue expansion alternating with collapse of credit.'

By 'over-banking' Tooke (p.262) meant bank advances either on the wrong sorts of bills or 'in too large a proportion to the liabilities'. From a bank balance sheet we see that the latter case of over-banking, too high a ratio of bills to liabilities (the sum of notes and deposits), is equivalent to too low a ratio of specie reserves to liabilities. To the extent that deposits served as a medium of exchange, Tooke was more perceptive than his Currency or Free Banking School critics in recognising that the sum of notes plus deposits was a more meaningful monetary aggregate than the stock of bank notes alone. Changes in the note circulation might themselves be insignificant if they reflected only changes in the ratio of notes to deposits. But Tooke failed to build on this insight. He was concerned almost exclusively with the numerator of the specie-liabilities ratio. He complained vigorously (pp.185-89) that reserves were too low in the Bank of England and thought that a large increase in its average gold reserve holding was a sufficient reform. Rarely did he complain of the impact of an expansion of the Bank's liabilities. Even then (p.198) he considered only that it had a disruptive impact on the money market, not on commodity prices or the balance of trade.

Tooke (p.200) rejected explicitly what he termed the 'currency theory of prices', which held that Bank of England-sponsored variations to the circulation influenced prices and thereby international gold flows. To him, as to Fullarton (1844. p.100), price level variations arose from non-monetary causes, and variations in the note circulation came in response to price level variations. Although Tooke implicitly denied that the same passive behaviour was always true of the sum of notes plus deposits, he unfortunately never thought in terms of the impact of a Bank of England-created excess supply of money on prices and the balance of trade. Instead he reasoned as though the endogeneity of the money stock held equally well in the short run, even under non-competitive conditions.[32]

The primary weakness of any trade cycle theory invoking a 'wave of optimism' as its initiating impulse is that it begs the question of the origin of the wave of general optimism. Unless it answers that question it offers no account of why, from a state of equilibrium, there should occur a general shift in the demand curve for loanable funds, rather than simply a relative shift from declining to expanding industries. Secondly, it does not explain why such a shift would not simply raise the entire structure of interest rates - deposit as well as loan rates - in the market for loanable funds, leaving equilibrium in the market for currency balances undisturbed except insofar as the demands for currency and specie reserves are interest-elastic.

The Free Banking School's monetary theory of the business cycle, by contrast, explains the rise in speculative and investment activity as a result of a central-bank-created excess supply of money entering the market as loanable funds, pushing the loan rate of interest below the natural rate. The initiating impulse comes from a shift in a variable (the volume of central bank liabilities) that may properly be regarded as exogenous to the system, at least in the short run. There still remains to be answered, of course, the question of what motivates the central bank's expansion. The Free Banking School writers, as we saw in Section 5.2, did attempt to answer this question.

It should be possible to determine empirically which school's theory was more consistent with the macro-economic fluctuation's of the era by investigating the cyclical behaviour of interest rates. According to the Free Banking School, consistent with their view that credit expansion initiated the boom, short-term interest rates fell at the outset of the boom and rose during the crisis. According to the Loyd-McCulloch-Longfield view and the Tooke view that increased demand for loanable

32 On one occasion Tooke (1844, p.158n.) allowed that deposit expansion by the commercial banks might sustain high prices in the short run. The relevant passage is quoted by Laidler (1975, pp.219-20) as evidence of 'Tooke's awareness . . of the short-run effects that the banking system could have on the price level through its lending activities.' On a closer reading of the passage, however, it seems likely that Tooke here, as elsewhere, thought of bank expansion more as an effect than as a cause of high prices. In Tooke's words, quoted by Laidler, 'A creation of bills of exchange *and deposits* must be the certain *consequence*' (emphasis added) of high prices. High prices were themselves, in Tooke's eyes, possibly the consequence of the discounting of low-quality bills. Tooke evidently believed (erroneously) that the ability of the system to over-issue hinged on the *quality of bills* it discounted, not the *quantity of liabilities* it created. For a detailed account of Tooke's trade cycle theory, see Link (1959, pp.127-47).

funds initiated the boom, short-term rates should have risen at the outset.[33] Interest rate movements went generally unrecognised - or were explicitly denied to occur, as by Joplin - in Currency School accounts of the cycle. Tooke, on the other hand, did recognise the effects on interest rates of shifts in the supply of and demand for loanable funds. But he argued (1848, pp.61-62) that the empirical correspondence of (1) low note circulation, tight credit, and high interest rates, with (2) high prices in 1841, and the reverse in all variables in 1844, decisively refuted the theory that monetary expansion and contraction drove prices up and down. This 'refutation' rested on Tooke's ignoring the theory's lag between movements in money and consequent movements in prices. Without attention to lags, these two sets of simultaneous observations counted equally well as refutation of Tooke's own contrary theory that exogenous variations in prices drove variations in monetary aggregates.

5.4. The Currency Principle

The Currency School, as we have seen, believed that the note-issuing behaviour of the banking system - especially of the country banks - served to amplify cyclical business fluctuations. As the ideal model of a neutral monetary system the Currency School writers looked to a hypothetical purely metallic currency system operating in Humean fashion. In their view an external drain of specie in that system was both the unambiguous symptom of, and the proper remedy for, an excess stock of domestic currency balances and a correspondingly high domestic price level. For every shilling exported, the domestic currency stock fell one shilling, gradually working off the excess until equilibrium was restored. They believed that in the actual English mixed currency system, however, this wonderful self-regulating mechanism was unfortunately not present in such a tightly geared form. Slippage was possible between the outflow of gold and the reduction of the domestic currency stock that should accompany it. The external drain could fall upon the gold reserves of the Bank of England, while the country banks continued to inflate the stock of currency by expansion of their note issues. As evidence that the country issuers behaved in disequilibrating fashion, Loyd (1857, pp.22, 93, 221-22; BSP, 1840, Q. 2,713) thus continually cited instances in which they had expanded while the bullion reserves of the Bank of England were shrinking. He believed (BSP, 1840, Q. 2,729) that 'a great deal of the severity of the commercial

33 The stylised characterisation of the cycle by Gayer, Rostow, and Schwartz (1975, Vol.2, p.960), in their lengthy study of British trade fluctuations over the period 1790-1850, does not enable us decisively to make the requisite determination. They do report that the 'early prosperity' phase of the typical cycle was marked by a decline in interest rates, which is more consistent with the Free Banking School view. Their account, though it includes (pp.858-938) a chapter on movements of financial aggregates, does not enable us to determine whether this decline was the liquidity effect of open-market purchases by the Bank of England. Such purchases, as Viner (1937, pp.257-59) has noted, were its primary means of credit expansion. The National Bureau of Economic Research reference-dating method used in this study breaks up the phases of the cycle in a way that may unfortunately obscure the causal chains at work. The study by Matthews (1954) is likewise unhelpful. It nonetheless seems clear from the account of Hilton (1977, pp.202-31) that at least the boom ending in 1825-6 was driven by Bank of England expansion. See also Bowen (1938). Further historical work is needed on this question.

crises in this country, and of the evils that attend them, are attributable to the want of contraction of the paper circulation of the country in correspondence with the bullion'.

This rationale for the currency principle was succinctly stated by Loyd (BSP, 1840, Q. 2,654):

> 'A metallic currency, I conceive, by virtue of its own intrinsic value, will regulate itself; but a paper currency, having no intrinsic value, requires to be subject to some artificial regulation respecting its amount.. . . It is important that that paper currency should be made to conform to what a metallic currency would be, and especially that it should be kept at all times of the same amount. Now the influx and efflux of gold is the only sure test of what would have been the variations of a metallic currency, and therefore, I conceive that that constitutes the only proper rule by which to regulate the fluctuations of a paper currency.'

The currency principle is subject to criticism on many grounds. Jacob Viner (1937, pp.221-22), after giving an excellent summary of the Currency School's position, points out that their proposed rule for regulating the *volume* of a mixed currency would accomplish their stated aim of keeping the *value* of the monetary unit the same under a mixed currency as it would be under a purely metallic currency[34] only under the supposition that the velocities of bank notes and specie were identical. Thornton (1802, pp.95-96), in arguing against Adam Smith's view that the total currency stock was invariant to changes in the proportion of notes to specie, had long since argued that this supposition was unwarranted.

The Free Banking School spokesmen sharply criticised Loyd's use of the currency principle as a platform for condemning the country issuers, as we noted in Chapter 4. Samuel Bailey (1840, pp.26-30) pointed out that it was futile to expect the country banks voluntarily to regulate their aggregate issues according to the state of the foreign exchanges or the proceedings of the Bank of England. The demand that they do so was

> 'one of those injunctions, which being addressed to a number of parties standing in the position of rivals to each other, and proposing to them a public object attainable only by their general concurrence in doing what it is in their individual interest to neglect, are in their own nature perfectly null.'

Bailey had identified a free-rider problem. He argued that to suppose that competing banks *could* obey the currency principle, even were it a sound rule, was to suppose an impossible degree of collusion among them. Only a monopoly bank could act upon that sort of rule. A competitive bank must look to the risks and returns it faces in deciding whether to extend its issues in each particular case. Loan business turned aside for fear of contravening the currency principle would simply go to another bank.

34 The aim of keeping the value of the currency in line was said by Loyd (BSP, 1840, Q. 2,749) to be a means of achieving the higher aim of maintaining convertibility, but the hierarchy of aims could just as well have been the inverse.

Bailey (pp.31-32) went on to consider what the impact would be were the country bankers, forsaking self-interest, deliberately to contract their circulation in step with reductions of the Bank of England's circulation or gold reserve, as a parliamentary committee (BSP, 1836, p.x) and later Loyd (BSP, 1840, QQ. 2,722-9, 2,742) recommended. A reflux of Bank of England notes, Bailey reasoned, must reflect an excess stock of those notes. Their redemption by the Bank would eliminate the excess. Were the country banks sympathetically to reduce their circulation by the same amount, the reduction in the total circulation would be double the necessary amount. Bailey recognised that the consequence of an over-issue fell largely on the over-issuing bank or banks. Loyd (Q. 2,982) did not. He believed that the Bank of England's gold bullion reserves bore the brunt of an external drain brought about by an aggregate over-issue not necessarily of its own making. Seeing no way to identify the sources of the over-issue, he assumed that all components of the aggregate should contract pro rata with reductions in 'the bullion'. Here again we see the Currency School's failure to recognise the non-homogeneity of bank-note brands.

It was true that a reflux of Bank of England notes could result from an over-issue by banks other than the Bank of England, given that the country banks, having been empowered to do so by the Acts of 1797 and 1833, held Bank of England notes as a reserve asset. A reflux of over-issued country bank notes could be redeemed by the issuers in Bank of England notes, whose new holders might then demand gold from the Bank of England, or in specie, in which case the country banks might replenish their specie reserves by redemption of their Bank of England notes. Were the drain on Bank of England gold reserves to come by either route from country over-issues, therefore, the drain would necessarily be accompanied by a reduction in the country circulation. This Loyd had failed to grasp. He complained of the country banks' failure to reduce their circulation while simultaneously assuming that their over-issues were at least partly responsible for the drain on Bank of England gold. Yet the simple fact was that holders of supposedly excess country notes could not get at Bank of England gold without redeeming the country notes. Loyd's complaint made sense at all only on the contortive assumption, going beyond even the assumption of indiscrimination among note brands, that holders of an excess stock of country notes responded by shedding only their Bank of England notes.

Bailey (1810, p.32) argued still further that a contraction of the London circulation would be 'diffused throughout the country, ultimately, if not immediately' as the 'comparative scarcity of money and the rise in the rate of interest draw a greater number of payments to London'. (Here Bailey had tacitly switched from the case of a reduction of the Bank of England's circulation brought about by passive redemption of its excess to the case of a reduction brought about by a tightened credit policy.) The country bankers would find their circulations 'gradually contracted without any direct effort of their own with that view', their notes and deposits being redeemed for gold and Bank of England paper to be sent to London. A reduction in the country circulation would thus follow a reduction in the Bank of England's circulation naturally. There was no need to impose any rule forcing conformity. Loyd (1857, pp.100-01) recognised this sequence of events, but thought it objectionable that the reduction in country issues was 'tardy' and 'not, as it ought to be, a voluntary procedure, springing up simultaneously, and acting in concert with the contraction of the central issuer'. He spoke of the transmission process as a 'struggle ... by which the monetary system, generally, is exposed to confusion and danger'. Bailey (1840, p.32) viewed the same process as the system being 'allowed to regulate itself and no alarm excited', in contrast to an artificial contraction of country issues in accordance with the Bank of England's bullion.

Loyd (BSP, 1840, QQ. 2,738-40, 2,799, 2,866), as indicated in Chapter 4, explicitly took note of Bailey's argument. If the autonomy of the country banks made the currency principle inappropriate for them he responded, so much the worse for their autonomy. It was principally on this ground that the Currency School justified its project to centralise the note issue. Loyd (QQ. 2741-2) expressed the view clearly in the following testimony:

> '*(Chairman)* What sort of control do you consider the country issuers have over their own issues? *(Loyd)* The control over the country issues is, what I would call an external and not an internal control; it is a control which comes through the state of prices, and the demand for banking accommodation in the neighbourhood of each party, rather than from a reference on their own part to the state of exchanges or the store of bullion.
>
> '*(Chairman)* That you do not consider to be the sort of control that ought to be exercised over their issues? *(Loyd)* No; I apprehend the control over all paper issues ought to be exercised with a direct reference to the state of bullion, and to nothing else.'

Several points raised in this passage will be discussed in later sections. Loyd evidently accepted the needs-of-trade doctrine as an accurate explanation of variations in a provincial bank's circulation, although he lamented that supposed fact. We examine that doctrine in Section 5.5. He preferred the deliberate (though not discretionary) exercise of central control over the currency to the impersonal control of the market. The outlook of 'constructivism' this represents is the subject of Section 5.6. Here we wish to emphasise that in recommending that each and every issuer use 'the state of bullion' as his only guide, Loyd had completely ruled out any response to relative shifts of note-holding demand from one bank, or set of banks, or region, to another within England.

McCulloch (1837a, p.70) thus employed the doctrine logically, if in a manner almost calculated to expose its perversity, in criticising harshly the new joint-stock banks for expanding their total note circulation during a period in which the Bank of England's bullion fell, even though the statistics he cited showed that the circulation of the provincial banks as a whole fell during the period. This deviation of a small subset of banks from strict obedience to the currency principle, he argued, 'strikingly exemplifies the extreme inexpediency of resting the power to issue paper in numerous bodies, having conflicting interests, and being only remotely affected by the exchange'. The inconvenient fact that the Bank of England's branches had also expanded during the period was something McCulloch cynically dismissed on grounds he was unwilling to grant to the joint-stock banks, namely that they had expanded by supplanting the circulations of country banks. Given his figures, of course, the same was true of the joint-stock banks: Their added notes had at the margin supplanted the notes of country banks. They had not obeyed the currency principle because they were obeying the public's shift in preference from country to joint-stock notes.

Gilbart's criticisms of the currency principle were not directed at its application to the provincial banks, but at its applications to the foreign exchange market. In response to Loyd's above-quoted statement of the principle's rationale, he pointed out (Gilbart, 1841a, pp.50, 54-55) that imports and exports of gold bullion were not necessarily analogous to imports and exports of specie under a purely metallic currency. Gold bullion has non-monetary uses, so that some imports of bullion would not naturally affect the money stock. For the Bank of England to link its issues to international bullion movements would result in its over-issuing while gold flowed in, creating a boom, and later over-contracting when gold flowed out, creating a recessionary panic. This much made sense, though the magnitude of non-monetary international gold flows may or may not have been significant. But Gilbart (BSP, 1841, QQ. 1,016-17) argued oddly that 'an issue of notes against a lodgment of bullion will usually be found to be an excess issue', blurring the distinction between imports and lodgments with the Bank of England. Evidently he believed that most bullion lodged with the bank was ultimately headed for non-monetary uses, the bank being employed merely as a temporary warehouse. But in that case the notes issued against bullion deposits would presumably be held by the depositor as warehouse receipts, not treated as spendable currency.

Elsewhere Gilbart's criticism of the currency principle was founded on the more solid ground that trade surpluses and deficits were often not of monetary origin, and hence were often inherently self-limiting and did not call for deliberate monetary counter-action. He distinguished (Gilbart, 1841a, p.57) between two cases:

> 'The causes of a drain may arise either from a depreciation of the currency, that is to say, from a general rise in the prices of commodities. arising from an excessive issue of money, or from an unfavourable balance of trade. When a drain of gold arises from an unfavourable balance of trade, without any depreciation of the currency, then the drain will stop when the balance is paid.'

The former case, as we have seen, figured prominently in the Free Banking School's monetary theory of the trade cycle. Gilbart (BSP, 1841, Q. 1,018) thought that that case could be distinguished in practice by the presence of other monetary trade cycle symptoms: an artificially low interest rate, highly stimulated trade, and high imports of foreign securities. The proper remedy was a contraction of the Bank of England's previously over-extended circulation. In the latter case, Gilbart (BSP, 1841, QQ. 953-4) suggested that the Bank of England would do better to finance the temporary balance-of-payments deficit by selling foreign securities abroad than to reverse the deficit by deflation.

In recommending that the Bank of England exercise discretion by distinguishing one case of adverse balances from the other and treating the two differently, Gilbart was in effect recommending that the Bank of England should act toward (e.g.) the Bank of France in the way that a competitive issuer acted toward its co-participants in a note-exchange system. Persistent reserve losses signalling a fundamentally excessive circulation should be met by contraction, but random week-to-week variations need not. A strict application of the currency principle, Gilbart (1841a, pp.56-58) argued, would mean needless vacillation from expansion to contraction, high prices to low prices, speculation to distress. Instead, 'the currency ought to be regulated as to prevent a drain' in the first place.

Gilbart's argument was well taken insofar as he meant to point out that the currency principle rested on an extreme Ricardian version of the monetary approach to the balance of payments that identified every external drain with the process of venting an excess stock of money.[35] A temporary drain might result from an increased demand for imported grain, for example, unaccompanied by a permanent reduction in the desired stock of domestic money balances. In that case (assuming also no increase in foreign demand for cash balances), a domestic monetary contraction would eventually have to be reversed. Going through a forced monetary contraction as a transitional process was unnecessary and might be inexpedient as compared with a temporary reduction in domestic holdings of financial assets. Gilbart's view lacked breadth, however, in failing to recognise that contraction of the domestic money stock could be the necessary remedy for an external drain not brought on by prior expansion of domestic money, namely for a drain in response to a rise in foreign relative to domestic specie demand.

Gilbart (1841a, pp.57-59) added that a strict adherence to the currency principle would prevent the Bank of England from responding to an internal drain and from acting as a lender-of-last-resort to commercial borrowers. Torrens (1837a, p.44) argued in defence of the principle, on the other hand, that strict adherence would prevent the Bank from producing the very calamities that created a need for 'the superfluous duty' of 'supporting commercial credit'.

We may briefly note the contrast between the Free Banking School's criticism of the currency principle and that of the Banking School. To Fullarton (1844, pp.12-15, 58, 64-65, 82-83) the Currency School erred in thinking that banks could place an excess stock of notes into circulation, that variations in the stock of notes could cause variations in the domestic price level, and that variations in the domestic price level could cause an external drain. He denied that a redeemable currency could ever be redundant and that any issuer could ever extend his issues in the absence of fresh demand. To the Free Banking School the power to over-issue, and consequently to drive prices up and gold out, was held by the Bank of England, though not by the provincial or Scottish banks disciplined by competition. Fullarton (p.27) contended that the English mixed currency already corresponded in its self-regulating behaviour to a purely metallic currency. Mushet (1826, pp.206-07), for one, contended that it would only do so under free banking.

35 For a critique of modern statements of this fallacy, see Yeager (1982, pp.12-14), and the reference cited there.

5.5. Banking Principles

Neither the Banking School of Tooke and Fullarton nor the Free Banking School proposed an artificial rule for regulating the currency or money supply akin to the currency principle. Secondary sources nonetheless commonly draw a distinction between adherents of the currency principle and adherents of something called the 'banking principle'. It is difficult to find contemporary use of the term banking principle in the singular. James William Gilbart (BSP, 1841, QQ. 931-3) did, however, use the term banking principles in the plural. He used the term to distinguish notes issued on 'currency principles' (exclusively in exchange for gold) from notes issued on 'banking principles' ('in repayment of deposits, or in the discount of bills, or in the making of loans'). Currency principles were the invention of certain writers, whereas banking principles were simply the principles on which bankers actually operated. The 'banking principle' in the singular is generally used by modern authors to denote the idea that banks of issue may, consistent with the safety of the monetary system, be left to consult their own private criteria in deciding what quantity of bank notes to place into circulation by way of loans and discounts. In this sense, wherein the 'banking principle' indicates the non-necessity of imposing an alien rule to regulate bank-note issues, both the Banking School and the Free Banking School supported the banking principle. In this section we shall explore the theoretical views underlying that support, noting where the two schools agreed and where they disagreed.

We should note one difference at once. The Banking School endorsed the banking principle even under the institutional circumstances of the day. The Free Banking School's endorsement applied only to banks operating under competitive conditions. The latter school, unlike the former, did not generally believe that the Bank of England in its monopoly position could safely be left to issue in whatever manner it pleased. For that reason the Free Banking School, but not Tooke or Fullarton, believed it necessary to subject the Bank of England to competitive discipline. We should also note that both schools, along with the Currency School, presupposed gold redeemability of notes in theoretical analysis and endorsed the gold standard in practice.

5.5.1 The Real Bills Doctrine

Lloyd Mints (1945, pp.86-100) has emphatically criticised the Banking School for its sometime allegiance to the real bills doctrine. The real bills doctrine, to quote Mints's (pp.29-30) account, is the doctrine that 'restriction of bank earning assets to real bills of exchange will automatically limit, in the most desirable manner, the quantity of bank liabilities; it will cause them to *vary* in quantity in accordance with the "needs of business".' That is, banks may properly create any quantity of bank notes and deposits so long as they create them only in purchases of the real bills offered to them. Real bills were commercial IOUs, issued by a second firm in payment for material inputs received from a first firm higher in the structure of production, to be paid off with the proceeds of sales to a third firm lower in the structure. The intuitive appeal behind the doctrine was that in a system operating on real bills principles, the supply of bank money would supposedly expand in step with real output and the demand for bank money.

The fallacies committed by real bills writers, according to Mints (pp.30-31, 48), were (1) failure to recognise that linking the volume of money to a nominal magnitude such as the nominal quantity of bills offered for discount, itself a consequence of the volume of money via the price level, left the volume of money and the price level indeterminate; and (2) failure to recognise that the quantity of bills presented to the banks for discount depended not only on real output and the volume of bills generated in trade, but also on the discount rate charged by banks, so that an excessive volume of bank notes and deposits (that is, a volume inconsistent with the prevailing price level) could be issued by banks discounting at a low rate. We may usefully refer to fallacy 1 as the *nominalist* fallacy and to fallacy 2 as the *inelastic-supply-of-bills* fallacy. There may of course be additional fallacies involved in statements of the doctrine.[36] Some writers, particularly the anti-bullionists of the suspension period, clearly fell victim to both of these fallacies in full. Other writers criticised by Mints, namely Adam Smith, the Banking School, and writers herein identified as members of the Free Banking School, may in part be charitably reinterpreted.

The Banking School and the Free Banking School - and this is true of Smith as well - can be interpreted as working with a model of a small open economy under an international gold standard. In such a model, as developed in Chapter 1, the domestic price level and other nominal magnitudes are not, in long-run equilibrium, a consequence of the domestic money stock. Instead the domestic money stock is determined by the conjunction of the exogenously determined purchasing power of gold (world price level in terms of gold), the definition of the domestic monetary unit in terms of gold, and the desired real money balances of the domestic public. These writers therefore cannot, if this interpretation be correct, be charged with holding to the nominalist fallacy of modelling or advocating an under-determined system.

Instead we may view their real bills statements as expressions of a confusion between the demand for bank notes and the demand for loanable funds. They wrongly believed that a bank or banks lending exclusively on real bills could not create an excess stock of notes because they wrongly believed that the quantity of real bills offered to banks for discount was a true measure of the demand to hold bank notes. Though we should expect N_p^*, the total quantity of notes demanded, to have been positively correlated with the volume of real bills offered for discount (holding the discount rate constant), each being a positive function of the volume of output, there is no reason to suppose that the coefficient of their correlation was unity. That is, there is no reason to suppose that a change in the pounds-sterling volume of bills offered for discount was matched by an equal change in the pounds-sterling quantity of bank notes desired to be held in money balances.[37] In general, the type of transactions by which notes are put into circulation is irrelevant to the question of whether the stock of notes is excessive.

36 Such as the belief that the volume of real bills generated in trade is uniquely determined by the volume of output in process. See Thornton (1802, p.86) for exposure of this fallacy.

37 The coefficient would be much smaller than unity if, for example, the quantity of bills varied

The inelastic-supply-of-bills fallacy may be seen at work in the suggestions by Mushet, Mundell, and Gilbart of the Free Banking School (see Section 5.2) that the ability of the Bank of England to over-issue stemmed from the fact that it did not confine its issuing to the discounting of real bills. Government bonds, mortgages, and other non-real-bills assets were supposed to be, unlike real bills, unrelated to the needs of trade, and so creation of notes in purchase of them was adjudged an issue in excess of the needs of trade, an over-issue. Those writers were quite wrong, however, in believing that the Bank of England could not create an excess supply of notes were it to limit its asset purchases to a particular sort of asset.

Their suggestions were undoubtedly conditioned by the fact that Bank of England purchases of commercial bills were typically initiated by the sellers coming to the Bank, giving the appearance that the volume of bills offered was beyond the control of the bank, whereas open-market purchases of other assets were made with apparent discretion. Under the Bank's normal policy of holding its commercial bill discount rate steadily above the market rate in non-crisis times, that appearance was not so misleading. Any serious over-issues of the Bank in this period doubtless came from open-market purchases of non-commercial assets, particularly purchases of government debt that the bank made under political pressure (these purchases may be viewed as the *quid pro quo* for its monopoly privilege). In theory, however, there was no obstacle to the Bank's over-issuing through aggressive discounting or open-market purchases of real bills. The qualification by Mundell (1832a, p.6) and Knowles (1837, p.70) that the Bank should discount *at the market rate* was pointless, since the Bank had the short-run power, by over-issuing, to drive down the market rate.

The nominalist fallacy was suggested only in the writings of John Fullarton (1844, p.198) of the Banking School and Alexander Mundell (1832a, pp.9-11, 49) of the Free Banking School. Fullarton endorsed the doctrine of the anti-bullionists - that issues on good bills of short maturity could not be excessive - as the closest approximation to the truth. It was evident also in his fallacious statement of the 'law of the reflux' (see below, Section 5.5.3), which Mundell anticipated, that Fullarton did not grasp the importance of redeemability in pinning down nominal values.

5.5.2. *The Needs-of-Trade Doctrine*

The demand to hold notes arising out of transactions activity often went under the name 'needs of trade' or 'wants of trade'. These admittedly are vague names, and the concept was often vaguely expressed. Recognising that these terms had this meaning nonetheless allows us to make sense of the 'needs-of-trade doctrine'. The doctrine consisted of statements to the effect that the note circulation of a region did, or should be allowed to, expand and contract in accordance with the transactions demand to hold notes.[38] Such

one-for-one with the volume of output while the demand for notes varied by a fraction representing the inverse of the virtual velocity of notes.

[38] Mints's (1945, p.94) failure to understand the phrases this way leaves him baffled by statements of the doctrine.

statements were perfectly sensible. They provide no evidence of adherence to a nominalist fallacy. With their purchasing power pinned down by gold redeemability, there is no indeterminacy created by allowing the quantity of notes to be demand-determined.

Gilbart (BSP, 1841, QQ. 931-41), for example, emphasised that there existed regular seasonal variations in the respective circulations of the country banks, the Scottish banks, and the Irish banks. His explanation of this phenomenon is clearly correct once we recognise that by 'wants of trade' he meant the demand to hold bank notes, which he believed (plausibly enough) varied with the volume of commodity transactions. He explained that decentralised note issue

> '...supplies a circulation which expands and contracts in each district according as it is required by the trade or agriculture of the district; those expansions or contractions take place at different periods of the year in different districts; the circulation expands when the wants of trade require it, and when no longer wanted it again returns.'

Seasonal variations were also cited by Bailey (1840, pp.72-74) and Fullarton (1844, p.86) as evidence that the circulations of banks were demand-determined. Hodgskin (1827, p.210) believed that seasonal variations took place as bankers discounted a greater volume of real bills.

This raises an obvious question: What else is supposed to be happening in the typical bank's balance sheet as the volume of its notes is seasonally expanding? The advocates of the needs-of-trade doctrine neglected this question. If indeed the increase in note liabilities is matched by an increase in bank holdings of interest-earning assets, then the bank must be operating on a lower reserve ratio. That banks might prudently do so on a seasonal basis is not implausible. The same volume of reserves might well be adequate for a temporary season during which a greater volume of notes can be trusted to remain out.[39] In this sense a banking system without required reserve ratios might show some measure of 'elasticity' (as it was later called) in the volume of bank monies.[40] There is a second possibility: The increase in note liabilities may be matched by a decrease in deposit liabilities. In that case the season is simply one during which the public switches its asset holdings from one sort of bank liability to another, with no change in total bank liabilities.

Beyond variations in note circulation due to seasonal variations in trade, adherents of the banking principle recognised generally that the volume of notes held in circulation would vary with nominal income. Loyd (BSP, 1840, Q. 2,799) was able to quote a whole raft of statements by provincial bankers and their defenders to the effect

39 To capture this possibility in terms of our model of Chapter 1, we would reformulate the expected liquidity cost function, Equation (4), to allow for a seasonal quantity of notes in circulation that does not alter the probability density function over net specie loss. That is, we would replace $\phi(X|N, D)$ by $\phi(X|N-\tilde{N}, D)$ where $\tilde{N}$ denotes the non-risky quantity of notes for the season of the planning period.

40 Note that the issuing bank will want its extra bills held during this season to be of such maturities that repayment occurs simultaneously with the reduction in the demand to hold its notes at the end of the season.

that a greater volume of notes was 'drawn out' of a region's banks whenever local prices were high or local trade brisk, because the 'needs of trade' (implicitly, the nominal demand to hold notes) were higher. A good representative statement of the doctrine with regard to non-seasonal variations came in Gilbart's (BSP, 1841, QQ. 914-15) testimony:

> '... What are the circumstances which, in your opinion, determine the variation in the amount of the country circulation, not within the same year, but taking corresponding periods of different years? - I should presume the state of trade in those different years. ... Do you mean by that the state of prices? - Certainly; but if there is an increase of trade without an increase of prices, I consider that more notes will be required to circulate that increased quantity of commodities; if there is an increase of commodities and an increase of prices also, of course you would require a still greater amount of notes.'

This 'needs-of-trade' explanation of variations in regional circulations was consistent with the Free Banking School theory, elaborated in Section 5.2, of the determination of a bank's circulation. It matched the Humean-Ricardian theory that a purely metallic currency increases in volume in regions where the demand to hold it experiences relative growth.[41]

The Currency School criticised the tendency of the provincial circulations to increase with high prices. George W. Norman (1838, pp.51-52, 61-62) and Samuel Jones Loyd (BSP, 1840, QQ. 2,800-1), for example, viewed such an issue of notes on banking principles to be unsound. Their argument always regarded the high prices in question as *too* high, as *disequilibrium* prices promoting an external drain. Increased provincial issues would prolong the disequilibrium by sustaining the high prices, exacerbating the external drain, and increasing the severity of the eventual 'recoil'. It is not immediately clear what they believed to be the origin of excessively high prices, although Norman associated them with 'periods of excitement', so that they were likely thinking of the first stage of their trade cycle theory, in which an unexplained wave of optimism sweeps the economy. Loyd's (BSP, 1841, Q. 2,800) statement had the appearance, however, of an illegitimate exercise in which an endogenous variable (here the domestic price level) was shifted exogenously: 'I conceive that it [the needs-of-trade doctrine] is unsound, for this reason, that when prices rise in any country' a balance-of-payments deficit arises, and hence a contraction and not an expansion of currency ought to follow.

The Currency School's normative rejection of the needs-of-trade doctrine involved a certain degree of irony, as the school took the working of the hypothetical Humean purely metallic currency as its normative model. This irony was pointed out by

[41] We may also express the doctrine in Fisherian terms: Assuming the velocity of notes is constant, shifts in the exogenously determined price level or real volume of transactions bring proportionate changes in the endogenously determined stock of notes in circulation. This way of phrasing the doctrine is of course anachronistic. For a reinterpretation of J. Lawrence Laughlin's monetary theory along these lines, mentioning Smith and Tooke as earlier writers in this vein, see Girton and Roper (1978, pp.615-20). See also Glasner (1981, p.7).

Robert Bell (1840, pp.22-23) of the Free Banking School, who noted the kinship of the doctrine to the purely metallic currency model:

> 'That the paper issues in Scotland increase with the rise of prices and are contracted on a fall, is a truism equivalent to the assertion that the currency increases or diminishes in proportion to the prosperous or adverse circumstances of the country. ... Indeed it is the constant theme of commendation, with the advocates of a metallic currency, that it would accommodate itself to the commercial wants of the country: and it is for Mr. Norman to explain, how a supposed virtue of the one system becomes a vice in the other.'

The analytical difference here was that proponents of the needs-of-trade doctrine traced an increase in local note-issue not to a disequilibrating rise in the local price level, but to an equilibrating rise resulting from a shift in an exogenous variable. Gilbart (1840, p.9), for example, in a passage cited by Loyd (BSP, 1840, Q. 2,799), supposed that an increase in the world price of corn had increased local prices (and nominal incomes) and hence the circulation in agricultural districts. Such an increase in the circulation would indeed be innocent, as the needs-of-trade doctrine supposed, of causing high prices.

John Fullarton (1844, pp.102-09) of the Banking School dealt with the case of a poor domestic harvest that (implicitly assuming inelastic demand for farm products) raised farm income, and hence the rural demand to hold bank notes. This case was especially interesting because in it the provincial circulation would justifiably rise at a time when the Bank of England suffered a drain of bullion. That drain would not only go abroad to pay for imported grain, but also from London into the English countryside. This conjunction of events would be quite in line with the price-specie-flow model of the Currency School, yet it was precisely such a conjunction that, as we noted in Section 5.4, drew Loyd's strong denunciations of the country issuers.

The advocates of the needs-of-trade doctrine may generally be faulted, as already suggested in regard to seasonal variations, for focusing exclusively on the demand side of the market for notes. They failed to notice in regard to non-seasonal cases of legitimate expansion that the expanding banks must enjoy increased reserves. Increased reserves are necessary for a bank profitably to maintain a larger permanent circulation. The necessary reserves would be furnished in these cases by an influx of specie to the expanding region corresponding to a positive interregional trade balance.[42] Had this been pointed out, the Currency School critics of the provincial issuers would have been forced to recognise the legitimacy of such an expansion. The provincial issuers would have been shown to obey a regionally disaggregated version of the currency principle. The currency principle, as formulated to apply to the nation as a whole, operated at an irrelevantly high level of aggregation. This was the point of Samuel Bailey's critique of the currency principle (Section 5.4).

42 Or by a transfer, to the banks of the region, of some other interregional settlement assets. Such assets could be held as reserves. In practice the country banks held deposits with London bankers and Bank of England notes, both useful for interregional settlements, as reserves.

5.5.3. Law of the Reflux

The real bills doctrine claimed that, under a certain policy for bank advances, over-issue of notes would never arise. A conceptually distinct doctrine promulgated by Tooke and Fullarton labelled the 'law of the reflux' by Fullarton held that an over-issue could never persist for a significant length of time, but would immediately return by way of loan repayments to the issuers. Tooke and Fullarton drew no distinction between the speed with which the reflux would operate on the central bank (the Bank of England) and the speed with which it would operate on a bank surrounded by rivals (a country, joint-stock, or Scottish bank). This distinction was pivotal to Free Banking School thought.

The writers of the Free Banking School, in tracing the reflux of excess notes, emphasised, as we have seen, the deposit of excess notes with rival banks and the note-exchange mechanism thereby brought into play. The Bank of England could create a relatively long-lasting excess because it had no rivals. An exception among Free Banking School writers was the thoroughly muddled pamphleteer Alexander Mundell (l832a, pp.9-11, 49), who argued erroneously that notes (the very same notes?) issued in discounts of bills would return as the bills came due, whereas notes issued in permanent advances would stay out until external drain set in. He concluded that even the Bank of England could not over-issue for long if it were to issue only on short-term advances. This is obviously false, because the Bank could simply reissue all the returning notes in new advances. If there were only that route for reflux, the over-issue could be maintained indefinitely. Reflux through the note exchange, by contrast, implied a loss of reserves that a bank could not indefinitely sustain.

Fullarton (1844, pp.95-96, 189) did not suggest that the same notes advanced in the discount of a bill would return in its repayment, but his conception of the reflux was otherwise similar to Mundell's. Any excess Bank of England notes, he believed, would immediately be spent away by their holders in discounting new bills that would otherwise reach the Bank. The vent for new issues being thereby narrowed, the steady stream of notes flowing back into the Bank in repayment of previous discounts would exceed the stream of new issues. The excess stock of notes would in this way correct itself. Only if the Bank stopped holding short-dated bills could the reflux be blocked. Here Fullarton was committing the inelastic-supply-of-bills fallacy in supposing that the Bank was necessarily passive in the determination of the volume of its discounts, and was indulging in a flight of fancy in supposing that excess Bank of England notes must intercept bills otherwise destined to be discounted by the bank. If the Bank *desired* to reduce its circulation, it might do so by discounting new bills more slowly than old bills were being repaid, but no magical property of notes or bills forced the Bank to behave in this way.

As for the possibility of over-issuing via open market purchases, Fullarton believed that such an operation would, by depressing domestic interest rates and stimulating adverse financial flows, cause such an immediate loss of bullion that the Bank must desist at once. Bullion would flow abroad as interest-sensitive investors purchased foreign assets in place of now-lower-yielding domestic assets. To Fullarton the Bank of England was no exception to the doctrine of demand-determined circulation, not even in the shortest of runs. This the Free Banking School rejected.

Tooke (1848, p.185) and Fullarton did also mention the possibilities of reflux through deposit or direct redemption of unwanted notes. Here they were, as the Free Banking School more consistently did, invoking the proper explanation of the tendency of the volume of notes toward its equilibrium level, namely the actions of members of the public in reasserting asset-holding preferences.[43]

5.6. Spontaneous Order Versus Constructed Order

A number of secondary accounts have characterised the British monetary régime debates of the 1820-50 period as a controversy over the extent to which the monetary authority (the Bank of England) should be governed by rules or allowed discretion.[44] To frame the debates this way obscures entirely the free banking question. Whereas rules versus discretion for the central bank was indeed an issue between the Currency and Banking Schools, the Free Banking School favoured neither. It favoured an end to the central bank status of the Bank of England, upon which event the question of rules or discretion would dissolve. The free banking advocates wished to eliminate discretion by eliminating the specially privileged position that enabled the Bank of England to pursue discretionary policy in the short run. They had no sympathy with the Currency School's attempt to eliminate discretion by imposition of constructed rules. To them it was not a question of bound or unbound authority, but rather a question of artificially imposed or spontaneously evolved monetary institutions.

That the Currency School preferred an artificially constructed monetary order was unmistakable. Samuel Jones Loyd (BSP, 1840, Q. 2,729) and J. R. McCulloch (1837a, p.87) both bemoaned the fact that the country banks responded to the profit motive and local market signals rather than to the dictates of the hypothetical currency principle. To Loyd (BSP, 1840, Q. 2,725) it was obvious that the national stock of currency needed to be directly managed. He thus regarded the Bank of England's monopoly power to manipulate the London circulation - the object of the Free Banking School's vigorous denunciation - as a positive feature of the existing system. Without it, Loyd (1857, p.232) warned:

> '...all regulation of the paper-issues of the country upon any *fixed system* would cease; and the management of the circulation, if management it could then he called, would fall into the hands of an unlimited number of rural issuers, co-equal in power and authority, and *subject to no general law for their guidance* - a state of things, as I firmly believe, detrimental beyond all calculation to the true interests of every class in the community.' [Emphasis added]

[43] Laidler (1975, pp.214-15) defends Tooke on these grounds.

[44] E.g., Fetter (1980, pp.98, 100).

To Loyd (p.145), Bank of England control represented a proper system of 'Limited Monarchy', in contrast to 'the ungovernable Democracy of rival issues'.

Similar expressions of monetary constructivism - the belief that the monetary system can and ought to be rationally constructed to promote stipulated ends - may be found elsewhere in the writings of the Currency School and its predecessors.[45] David Ricardo (1951, pp.65-73), as we have noted, looked upon convertibility as though it were a designed device. He proposed his famous 'ingot plan' or bullion standard (convertibility of notes into gold bars for export only, not into coin) as a new and better design. In his *Plan for the Establishment of a National Bank* he proposed to redesign England's monetary institutions from the ground up. James Mill (1821, p.113) stated explicitly the attitude implicit in Ricardo's proposals:

> 'The issuing of notes is one of that small number of businesses, which it suits a government to conduct; a business which may be reduced to a strict routine, and falls within the compass of a small number of clear and definite rules.'

That the Free Banking School's members did not view the issuing of notes in this way was a ground upon which defenders of the currency principle attacked them. In criticising the 1841 testimony of Gilbart and H. W. Hobhouse in opposition to the currency principle, an anonymous pamphleteer (Anonymous, 1842, pp.12-15) expressed his exasperation that they offered no other 'clear and definite principle on which they think that measures regulating the currency should proceed'. It may be that the government and Members of Parliament similarly felt that free banking doctrine was of no use to them. It offered them no tangible blueprint for regulating the currency, no scope for imposing a considered view of how the issuing system ought to behave. The way in which the MP William Clay (Hansard, 1839, XLIX, col. 813) framed the issue in the debate over the Bank of Ireland's monopoly privilege seems to indicate such a feeling:

> The question now before the House was as between what his Hon. friend [Joseph Hume] called the system of free trade in banking - that was to say, in issuing of notes - and the best system of control which it was possible the wisdom of Parliament could devise.'

Perhaps the most extreme expression of constructivist sentiment came from a minor pamphleteer named John Cook. Cook (1837, pp.5-6, 18-21, 30-31) considered it 'absolutely necessary' that government should closely monitor trade and 'regulate ... the monetary tide'. He objected to 'reckless competition' among issuing banks on the grounds that it obstructed state control by complicating the monetary system. The Bank of England, he claimed, was 'absolutely necessary and important to avoid confusion in the purview' of the nation's import-export trade. The Bank's monopoly was 'a power necessary to check the rashness of individuals and of bodies', without which 'the community must soon be shivered to atoms by the wild and reckless speculations of indi-

[45] The term constructivism is due to F. A. Hayek (1973, Chap.1), whose anti-constructivist attitude was anticipated by the Free Banking School.

gent or imprudent men, and the best and the vital interests of the country sacrificed to the rage for gambling'.

Though Cook's prose was more purple than most of the Currency School's, his defence of the Bank of England's powers was not dissimilar. The Currency School commonly argued that the foreign exchange market required a sensitive central manager. To this the Free Banking School (Parnell, 1833, pp.63-68; Scrope, 1832, p.450; R. Bell, 1840, pp.9-14) correctly responded that the issue was a red herring. They recognised that with a plurality of issuers, each looking to its own balance sheet, the foreign exchange market would manage itself. The Scottish banks, compelled by competition to draw bills on London at a competitive rate, had long kept the Edinburgh-London exchange rate steady.

At the level of policy debate the Free Banking School objected strenuously, in the words of Robert Bell (1840, p.8), to the Currency School's 'unremitting efforts to reduce one of the many speculative theories on currency into actual practice'. Their position was that constructivist intervention in the monetary realm was dangerously misguided. It is the theoretical understanding behind that position that interests us here. In elaborating their conception of the working of an unregulated banking system, the writers of the Free Banking School often revealed an insight into the general characteristics of a decentralised market economy. On this score they both carried on the tradition of Adam Smith and anticipated the later contributions of Menger (1871, Chap.8; 1892) to monetary theory and of Hayek (1948) to the socialist calculation debate. A few of their statements merit lengthy quotation here.

Samuel Bailey showed the keenest insight of the group. Bailey (1840, pp.2-3) founded his defence of free trade in banking upon the argument that in banking, as in any other trade, the most productive organisation of resources depends crucially upon local facts known only to the agent on the spot. Such questions as the size of a firm's capital, its proportion to the volume of business transacted, its profits, and the number and location of the firm's offices cannot efficiently be centrally dictated:

> 'Such points are to be determined by the vigilance of the party concerned - requiring minute knowledge of a thousand particulars which will be learned by nobody but him who has an interest in knowing them; and, although they are not invariably decided with perfect wisdom, they are determined more wisely on this plan than they could be on any other.'[46]

This much was generally recognised by the law, and by the free trade spirit of the day, Bailey thought, in respect to other trades. Only atavism and a pretence of knowledge

[46] Note the kinship of Bailey's remark with the well-known aphorism of Adam Smith (1976, Vol.1, p.478): 'What is the species of domestic industry his capital can employ, and of which the produce is likely to be of the greatest value, every individual, it is evident, can, in his local situation, judge much better than any statesman or lawgiver can do for him. The statesman, who should attempt to direct private people in what manner they ought to employ their capitals, would not only load himself with a most unnecessary attention, but assume an authority which could safely be trusted, not only to no single person, but to no council or senate whatever, and which would nowhere be so dangerous as in the hands of man who had folly and presumption enough to fancy himself fit to exercise it.'

lay behind the legislators' belief that banking was different:

> 'There is, however, still one trade in which governments distrust the sagacity of self-interest, and deem that the vigilance and discretion of persons at a distance, and imperfectly acquainted with the circumstances of a contract, will be superior to those of the parties who are on the spot, and are immediately concerned. Dealing in money is imagined to have something so peculiar about it, that Legislators cannot forego the fond fancy that there is a necessity for their interposition.'

Though Bailey's immediate application of his argument was in opposition to usury laws, he soon (pp.6-8) employed it as an argument against banking regulation in general.

Bailey (pp.12-13) argued acutely that discovery of the optimal size, number, and geographic distribution of firms in an industry 'is not done by the wisdom of government', but is done through the market process of entry and expansion in profitable areas, erosion of profits through price competition, and exit of superfluous unprofitable firms. The banking industry was no exception. Undesigned order was more efficient than design in determining the arrangement of banking firms: 'No wisdom, short of omnipotence, could so well proportion the number and extent of these establishments to the wants of the community, as those principles of human nature which spontaneously work out the result.'

Bailey's fundamental argument against the Currency School's proposal for central regulation of the currency stock rested on the insight that no central mind could use all the fragments of knowledge that agents in a market system could use. Bailey (pp.40-41) took the use of knowledge to be the leading problem of monetary order:

> 'The great desideratum is to have a currency convertible into gold, and capable of adapting itself by those insensible contractions and expansions which no human sagacity can ever effect, to the perpetually varying wants of the community.'

This goal could be accomplished only through competition in issuing. The 'systematic action' of the automatic checks against over-issue, furnished necessarily by rivalry among issuers, must outperform any centralised direction. The competitive system

> '...would proportion with exact precision the amount of the paper currency to the state of commerce, or, at least, with a precision more exact than could result from the most vigilant attention of any board which attempted to accomplish the same object by watching the signs of the times.'

The 'spontaneous operation' of private interest through competition could provide London with currency just as adroitly as it provided the city with food.

The widely acknowledged errors of the Bank of England, by the same token, proved to Bailey (pp.38-39) the inherent impossibility of satisfactory central monopoly regulation of the currency. Whatever guidelines the monopolist followed, both its scientific knowledge and its factual information must be insufficient to avoid error: 'The necessity will exist of having recourse to arbitrary assumptions and empirical expedients.' Implementation of the currency principle, for instance, required an arbitrary choice of a target quantity of securities to be held by the Issue Department. The choice was more difficult still if the proper target depended on the state of trade. The information necessary for the decision was simply unobtainable for a single mind: 'The elements necessary for the precise determination of such a point are within no man's reach.'

Bailey (pp.98-99) suggested that the Currency School's 'hypothetical notion that there is a necessity for subjecting the amount or quantity of the currency to regulation', the notion upon which its constructivist proposals were based, was a notion 'engendered probably by long habit and imperfect institutions'. We may interpret 'long habit' to be a reference to the 1797-1819 period of the Bank of England's suspension, during which the quantity of domestic money did indeed require regulation, and 'imperfect institutions' to be a reference to the Bank of England, whose monopoly power to over-issue for a significant run did indeed pose a problem of quantity regulation. Those situations undoubtedly did play a major role in framing the Currency School's outlook. We might add that at least as important a role was played by the McCulloch-Loyd-Longfield view that the country banks could not and did not avoid over-issuing in concert.

Bailey himself recognised correctly that the quantity of a redeemable currency under competitive issue was just as subject to demand-side determination as the quantity of a purely metallic currency. He trusted that recognition of this truth, and allowance of spontaneous order in currency, would win out over constructivist schemes:

> 'The more the subject is considered, the more clearly I am inclined to believe it will be discovered, that any system which involves the necessity of any arbitrary, speculative, or deliberate adjustment of the sum total of a credit-note currency to the supposed commercial condition of the country is wrong; on the same grounds that it would be a mischievous arrangement which imposed on any Government or assigned to any Board of Commissioners the task of regulating the quantity of a currency which wholly consisted of the precious metals.'

No principle can be depended upon for the nice adjustment of the currency to the wants of the people, but that play of interests in which we unhesitatingly confide for the adequate supply of all the other necessaries, comforts, and conveniences of life.

Other developments of the contrast between spontaneous order and designed order came from other free banking advocates. Thomas Hodgskin (1827, pp.xii-xiii) argued sweepingly that social phenomena were far too complex for any person to comprehend, let alone to orchestrate, despite the pretensions of the would-be planners:

> 'No class of men live in such a state of perpetual amazement and alarm at the occurrence of events which they did not foresee, and being quite unprepared to meet, attempt to

> check by violence, as those statesmen who pretend to direct the march of nations. Notwithstanding, they continue to look on human society as a machine put together and regulated in all its movements by the politician; and they endeavour to make us believe that it would fall in pieces if it were not for the preserving power of his master hand.'

> 'The view I take is totally different. ... To provide for general social welfare seems to me an object much more beyond the power of man than to estimate the bulk and density of the planets. However admirably the faculties of each individual are adapted to provide for his own wants, they are quite incompetent to grasp, much less to regulate the complicated relations of society; and these relations, growing more complicated as our race multiplies on the earth, make the puny ambition of the lawgivers appear every day more and more contemptible.'

Hodgskin considered money to be an integral part of the complex economic order, regulated like all other parts by the spontaneous working of natural economic laws. He debunked (pp.184, 196) the state theory of the origin of money: The use of precious metals as money 'began, like the division of labour, without the interference of any legislature'. Though he did not spell out the process of adoption, he conceived that metallic money had been 'instinctively adopted by the human race.' The origin of money was in fact a prime exemplar of spontaneous economic order:

> 'Though money is sometimes supposed to be the invention of statesmen and to require their control more than the other parts of that wonderful system of combined production which takes place in civilised society I know no part of it which affords, better than money, an illustration of the important fact, that this system is regulated in its minutest details by natural circumstances.'

Bank notes, in Hodgskin's (pp.204-18) eyes merely one of several sorts of commercial promissory notes that functioned as money, afforded further illustration of the undesigned evolution of money. The use of commercial paper money was 'unwilled by the legislature and almost unknown to it', and had emerged naturally as a means of economising on the use of costly precious metals. The trade of banking was merely a natural part of the division of labour that was a necessary part of economic development. Legislation restricting the issue of bank notes was therefore 'directly and completely adverse from the regular progressive and steady march of civilisation'. The task of expounding the principles upon which bank notes should be issued was part of the 'art of banking', properly left to the bankers and not assumed by the legislator. The needs of trade, reflecting a multitude of local factors, would regulate the volume of notes. The outcome, controlled by 'natural' economic law, would be the result of human action but not of human design:

> 'As both the value and quantity of metallic money are regulated by natural circumstances, as the quantity of paper-money necessarily is determined by the number of exchanges to

> be made, there is reason to believe, that the whole business of issuing bank notes is subject in its minutest details, to controlling natural circumstances, many of which, whether theoretically known or not, are already acted on.'

A striking critique of central banking as monetary central planning was provided by an anonymous writer whose *Thoughts upon the Principles of Banks and the Wisdom of Legislative Interference* was cited by Bailey (1840, p.38n.) as a work going 'deeper into the *philosophy* of the [currency] question than any of the rest'. This writer's remarks (Anonymous, 1837, p.20) indeed went to the core of the matter, the informational problems of central planning. 'To appoint a single body (no matter of whom composed; legislature, bank, or delegates from every commercial city in the kingdom)' to regulate the issue of bank notes would be, he suggested, to substitute 'the ignorance, prejudice, and inefficiency, of a clique for the wisdom of the whole'. To suppose that the central bank would act skilfully required 'allowing the miraculous event of the extensive information, and quick action, necessary to this'. To subject an individual merchant acting at the local level to the discretionary policy of a central monetary authority was to place him in a position of having to second-guess the behaviour of that body in formulating his plans. The merchant, moreover, could not expect the authority to know enough to act in a welfare-enhancing way: 'How is he to know, why should he believe, that the body is cleverer than himself, more conversant with business, more sure in principle?'[47] Those who proposed to centralise the note issue, the author charged (p.67), were precisely those who thought themselves wiser than the businessmen on the spot.

5.7. Summary Table

At the risk of over-simplification, we may schematise in Table 5.1 the contrasting positions of the Currency School, Banking School, and Free Banking School on the theoretical issues discussed in this chapter.

[47] It is not too far-fetched to regard this passage as embodying the insight behind the Rational Expectations policy conclusion that discretionary monetary policy cannot enhance welfare unless the monetary authority has an informational advantage over private agents.

Table 5.1 *Schema of the Currency School - Free Banking School - Banking School Controversy*

Issue	Currency School (McCulloch, Loyd, Longfield, Norman, Torrens, S. Ricardo)	Free Banking School (Parnell, Gilbart, Bailey, Mushet)	Banking School (Tooke, Fullarton, Wilson, J.S.Mill)
1. Free trade applies to note-issue?	No; favour forced centralisation of note-issue	Yes; favour end to BOE monopoly of London issue	Somewhat; favour[a] status quo
2. Who can over-issue?	Single CB; CBs in concert especially likely; [b]BOE	BOE, and only BOE	No Bank
3. Trade cycle:			
a: Origin	Non-monetary[c]	Monetary[d]	Non-monetary
b: Transmission	Monetary	Monetary	Non-monetary
4. When is stock of convertible money self-regulating?	Only under an imposed rule (the currency principle)	Only under free competition	Already
5. a. Real bills doctrine	Anti	Pro	Pro
b. Needs-of-trade doctrine	Applies to CBs, not to BOE; is bad	Applies to CBs, not to BOE; is good	Applies to CBs *and* to BOE; is good
c. Reflux of excess notes under competition	Muddled, perverse, too slow: via external drain only	Rapid: via note exchange system	Instantaneous: via loan repayments
6. a. Construc-tivism	Pro	Anti	Anti
b. System favoured	Rule-bound authority	No authority	Unbound authority

[a] Early Tooke, no. Wilson, Mill and the later Tooke defended CB issuers, but did not favour ending the BOE's central status.
[b] Except early Torrens.
[c] Except early Torrens, S. Ricardo, and Pennington.
[d] Except R. Bell and early Parnell.
Key: BOE = Bank of England; CB= country bank.

CHAPTER 6

The Relevance of Free Banking Today

The most basic question concerning government policy toward money and banking has not changed since the last century's debates over free banking. It is today, as it was then, simply this: Does government have any well-founded reason to play a role in producing money or in regulating private firms that produce money? The successful record of free banking in Scotland was held up by the Free Banking School as evidence that government has no legitimate reason to intervene in the provision of (non-metallic) money. Scotland's experience remains relevant in re-examining the question today. It still provides useful evidence on the workability of monetary freedom.

Generalising from a single historical episode like Scotland's, however substantial that episode may have been, is of course hazardous. Fortunately, studies of a number of free banking systems in other nations have appeared in recent years.[1] In general, the evidence from other cases reinforces the support the Scottish case provides for the hypothesis that monetary freedom is workable and self-regulating. The Scottish experience can continue to inform our understanding of what we might generally expect from free banking, though the modern debate over free banking should certainly draw on other experiences as well.

The question of the rationale for government monetary institutions is by no means purely academic. Its enormous practical importance has become obvious in recent years. With the growing perception that existing central banking régimes have served the public badly, a renewed interest in alternative monetary systems has spread beyond the small set of academic economists with whom it began. In the last decade of the 20th century, the question of whether to have a central bank, or instead an alternative arrangement, has become a much-debated policy question in the new market economies of central and eastern Europe, and in nations emerging from hyperinflation. In 1990 Paul Volcker, former Chairman of the Board of Governors of the Federal Reserve System, said the following to a conference on 'Central Banking Issues in Emerging Market-oriented Economies' (Federal Reserve Bank of Kansas City, 1990, pp.1-4), a statement remarkable in many respects, not least for its indication of how the debate has shifted:

> 'For all the glories of my investment banking friends, I have to tell you they are not very big on the role of central banking in emerging market economies, which is what I am asked to talk about today. In fact, when I mentioned to one of them that I was supposed to talk about central banks in emerging market economies, they told me that was an antithesis in terms. Central banks are not exactly the harbingers of free market

[1] See especially the studies collected by Dowd (1992b). See also Wells (1989), Echeverri (1991), and Eugene White (1991).

economies. ... And if you say a central bank is essential to a market economy, I have to ask you about Hong Kong, which has no central bank at all in the absolute epitome of a free market economy. Yet it does quite well in terms of economic growth and stability. ...

'There are other potentially more effective ways to get a handle on inflation than a central bank. And I do not have to cite any greater authority in this room than Wayne Angell [then a member of the Board of Governors of the Federal Reserve System]. When he went off to Russia, he did not recommend the creation of a new Federal Reserve System. Rather he said, "Go on the gold standard". Alternatively, one might say "adopt convertibility". Or one might say, as Alan Walters seems to be saying these days, "have some kind of a currency board" for emerging economies. A central bank might be attractive to those here, many of whom are central bankers. But it is not the only way to deal with inflation. In fact, as you well know, a central bank can become an engine of inflation rather than the reverse.'[2]

In Western Europe and especially the United States, competitive innovations in banking and near-banking designed to overcome regulations have brought the efficacy of banking regulations under scrutiny. Most recently, advances in digital payment technology have begun to foreshadow a world in which central bank currency is obsolete, perhaps replaced by privately issued currency in the form of balances written to 'smart cards' or downloaded to personal computers, and transferred by means of 'electronic wallets' or over the Internet (Browne and Cronin, 1994, Levy, 1994, White, 1995a). Smart-card balances, transferable without bank involvement, may become the 21st-century version of the private bank note.[3] The basic monetary policy question, once debated with reference to bank notes, again arises: Does government have any well-founded reason to play a role in producing (electronic) money, or in regulating private firms that produce (electronic) money? Specifically, is there any good reason to place legal restrictions on private firms that provide digital payment media or money-transfer services?

In the second and third quarters of the 20th century the issue of alternative monetary frameworks was treated primarily as a question of the desirability of 'rules'

[2] Volcker was perhaps merely being provocative. Robert Hetzel (1990) offers a sustained case against central banking for newly emerging market economies. Hetzel (p.19) warns that having a domestic central bank tempts politicians to pursue inflationary finance and exchange controls, with growth-suppressing consequences, and concludes: 'Eliminating the central bank is one way of committing to a limited role for the state.' I have elsewhere applied this argument, combined with an explicit case for private currency, to Africa (White, 1993b, pp.420-21). Anderson (1993) has likewise argued for a free banking solution to Russia's monetary problems: let private banks issue currency and deposits redeemable for whatever 'hard' currency their customers most prefer. Hanke, Jonung, and Schuler (1993) spell out the currency board approach to reform, under which government makes its currency redeemable and holds 100 per cent reserves of hard-currency assets, obviating central banking in the sense of active manipulation of the quantity of money. Argentina's central bank since 1989 has - with very positive results - made its peso redeemable for the US dollar, one for one, in a system that some liken to a currency board arrangement (though in fact it is not so strict).

[3] The theory of Chapter 1, explaining the economic limits to the quantity of redeemable bank notes a private issuer will choose to create, equally explains the limits to the quantity of smart-card currency balances (redeemable for base or reserve money) a private issuer will choose to create.

or 'discretion' for a monetary authority. The rationale for the existence of a monetary authority went unquestioned. There was no modern analogue of the Free Banking School. (It is no doubt partly for this reason that free banking opinion in the British monetary controversies of the 19th century was slighted by historians of monetary thought.) Vera Smith (1990, p.172), in undertaking to question 'The Rationale of Central Banking' in her book by that title, was moved to comment on the general scepticism such questioning encountered: 'To the vast majority of people government interference in matters of banking has become so much an integral part of the accepted institutions that to suggest its abandonment is to invite ridicule.' As a characterisation of majority opinion this is probably still accurate. But among serious students of monetary affairs the proposition of government non-interference in monetary and banking affairs is now receiving a respectful hearing. A growing number of economists has begun approaching questions of monetary theory and policy with the aid of competitive market models.[4] F.A. Hayek's (1976, 1978) writings on behalf of 'denationalisation of money' were particularly important in reopening the fundamental debate over monetary régimes.

Hayek discusses the possibility of free competition among private and governmental issuers of numerous brands of irredeemable or fiat currency. Other authors have conceived of a *laissez-faire* payments system in which no outside currency or most basic medium of exchange need exist.[5] The discussion of 'free banking' in this book, by contrast, refers to the unrestricted competitive issue by private banks of currency and deposits that are redeemable for a more basic money originating outside the banking industry. The earlier chapters spoke of 'specie' as the basic money for which bank money is redeemable, but both the theory of Chapter 1 and the discussion of the present chapter are applicable, with suitable adaptation, to an unregulated banking system with any sort of outside money, provided that the quantity of outside money is not controlled by a government monetary authority. A specie standard, free of restrictions on the movement and coinage of bullion, fits this specification nicely. But a permanently frozen stock of irredeemable government currency, for example, could also serve as the monetary base for what might properly be called a 'free banking' system.

Free banking as a monetary régime thus comprises two conceptually distinct elements: (1) unregulated issue of transferable bank liabilities, and (2) unmanipulated supply of base money or basic cash. Government plays no active role respecting the quantity of money produced inside or outside the banking industry. The experience of Scottish free banking and the arguments of the Free Banking School bear most obviously on the question of deregulation of inside money. But they also shed some light on the potential desirability of an outside money free of central bank control. They are particulary relevant to the question of the desirability of a precious metallic standard, because the most common objections to a specie standard have been the expense of an

[4] For a recent survey, see Selgin and White (1994). For a useful earlier survey, see Brown (1982).

[5] See Greenfield and Yeager (1983, 1989) for presentations of this line of thought. Selgin and White (1994, 1995) discuss criticisms.

exclusively metallic money stock and the supposed inherent instability of a banking system that economises on specie by introducing fractional reserve inside monies.[6] The Scottish experience indicates that in fact the resource costs of a specie standard can be kept low without instability.

An appreciation of the success and stability of Scottish free banking takes on special importance in light of the notoriety of 19th-century American experience with state-regulated banking systems commonly but misleadingly called 'free banking'.[7] Many economists today who favour deregulated free markets for other goods and services, yet fail to extend *laissez-faire* principles to money and banking, apparently believe that unregulated banking proved a failure in the last century. Like the Currency School did, they misleadingly point to American experience as an example of unregulated banking in practice. Unlike the Currency School, which had to try to explain away Scottish experience, today's monetary economists are evidently unaware of a strong counter-example.

A statement by Milton Friedman (1960, p.6), perhaps the best-known scholarly advocate of free-market ideas in non-monetary areas, is probably representative of a widely shared reading of history. Friedman argues that fraudulent bank notes and bank notes with poor homing power are particularly easy to pass. He then writes:

> 'A fiduciary currency ostensibly convertible into the monetary commodity is therefore likely to be over-issued from time to time and convertibility is likely to become impossible. Historically, this is what happened under so-called 'free banking' in the United States and under similar circumstances in other countries. In fact, as we have seen, this is emphatically not what historically happened under free banking in Scotland.'[8]

It is instructive to examine the contrast between Scottish experience and Friedman's scenario in order to see why his explanation of the failure of free banking fails to hold true. The demand for generally acceptable money led in Scotland, under free conditions, to the establishment of widely branched banks and to mutual note-acceptance arrangements among banks. It did not lead individuals to hold the notes of distant and unfamiliar banks indifferently. Where free competition makes better notes available, there is no reason for the public to suffer dubious notes to remain in

6 These concerns can lead logically to advocacy of a 100 per cent reserve fiat money system; see Friedman (1960, pp.68-76).

7 Vera Smith (1936, pp.44-46) briefly discusses why 'free banking' was a misnomer as applied to the state banking laws passed between 1837 and the Civil War. Those laws made banking 'free' only in the sense that legal barriers to entry were regularised. Smith (p.149n.) rightly notes that 'the American system was characterised by certain features which render it quite inappropriate as an example of the working of free banking in the more general sense,' the more general sense being absence of any special banking regulation. Rockoff (1991, p.75) comments in a similar vein that American state 'free banking' régimes were 'a far cry from pure *laissez-faire*'.

8 The four paragraphs following draw on White (1983). In light of the new historical studies published since 1960, Friedman has come to a considerably more positive view of free banking: see Friedman (1984) and Friedman and Schwartz (1986).

circulation. The notes of bankers 'far removed in space and acquaintance,' to use Friedman's phrase, could not gain currency in Scotland. A very short period typically elapsed between the issue of a bank note and the demand for the fulfilment of its promise to pay, the note returning to its issuer through the clearinghouse after deposit in another bank. This checked both fraud and indeliberate over-issue.

Opportunities for profit by fraudulent means are indeed likely to be exploited. Prosecution of banking fraud neither constitutes an intervention into banking, however, nor justifies banking regulation. It simply subjects banking to general business laws. It requires no laws or regulations specific to banking. The Scottish free banking system, moreover, seems to have provided few opportunities for profit through fraudulent note issue. Counterfeiting was rare due to the short average circulation period of notes, which made rapid detection of forged notes likely.

Deliberate or indeliberate over-issue of notes by a bank was not a profitable strategy when the notes rapidly returned through the clearing house and drained the bank's reserves, as the *Ayr Bank* discovered. The Scottish authorities were not reluctant to dissolve a bank unable to meet its obligations. They did not readily sanction *suspensions of convertibility*. As a result Scottish banks had no incentive to over-issue periodically. The one general suspension of specie payments experienced by the system, that of 1797-1821, followed the government-sanctioned suspension of the Bank of England rather than a local over-issue. The Scottish banks continued to redeem their notes in Bank of England notes, restraining themselves from unlimited issues.

It is beyond the scope of this book to re-examine in any detailed way what happened under so-called free banking in the United States. Economic historians who have undertaken this task in recent decades have found that the evidence 'presents a serious challenge to the prevailing view that free banking led to financial chaos'.[9] A sufficient explanation of the '*wildcat banking*' and other problems that did occur in certain states would have to focus on the conditions peculiar to those states, particularly such banking interventions as prohibition of branch banking, requirements that note issuers deposit approved bonds with state officials as collateral, and sheltering of non-redeeming banks from dissolution by the courts.[10] The fact that wildcat banking did not occur in Scotland shows that freedom from banking regulations cannot be an adequate explanation of it.

Reflection on what happened under free banking in Scotland may also help us answer other questions concerning the stability or efficiency of an unregulated monetary system. In Section 1.3 we argued that for theoretical reasons *banks' reserve ratios* would not go to zero under free banking. There is nonetheless an important question of degree here, which we may answer with reference to the Scottish system: Will banks in

9 Rolnick and Weber (1982a, p.4). Again, see Rockoff (1991) for a review of the literature. The seminal piece in this literature was Rockoff (1974).

10 Rolnick and Weber (1982b), consistently with this, provide evidence that the large numbers of free bank failures in particular states were due to bond deposit requirements. Because these requirements forced banks to tie up a large share of their assets in state bonds, they made banks failure-prone when state bond prices fell. See also Rolnick and Weber (1983, 1984, 1986) and White (1986).

a system free of required reserve ratios tend to economise on specie reserves to the point where they hold 'too little' specie in some sense? One atypical Scottish provincial bank for which records survive (see Munn, 1981, p.141) held specie reserves averaging only 0.5 per cent of total demand liabilities during the decade of the 1830s. To contend that these reserves were 'too little' one would have to argue that a bank's reserve-holding behaviour has uncompensated negative effects on other parties, since a bank-note-issuing firm that survives is presumably competent to choose a level of reserves appropriate to maximising the value of the firm.

One supposedly external effect that might be invoked in this context is the inconveniencing of note-holders (and deposit holders) by the illiquidity of an otherwise solvent issuer that runs out of reserves. But these parties have a contractual relationship with the issuer. They are not extra-contractual third parties whose compensation is so impractical that blanket regulation might be defensible. The note or deposit contract may explicitly provide for compensation in cases of temporary illiquidity, as did the Scottish bank notes bearing the option clause prior to 1765. If the contract is silent, it is up to the legal system to provide an appropriate restitutive remedy for the breach of contract implied by failure to redeem notes and deposits on demand, that is, to compel the bank to compensate its liability holders in full. Where this is done the negative effects of illiquidity fall fully on the issuer, and banks face the proper incentives to maintain adequate reserves.

Slightly more involved is the question of the victimisation of note-holders and deposit holders by an issuer that becomes insolvent, that is, runs out of equity and thereby becomes unable to meet its contractual liabilities even upon liquidation of its assets. But here again the question is one of contractual relations. Under unlimited liability the bank's shareholders have a contractual obligation to meet the bank's debts from their personal wealth. Under limited liability they have no such obligation. An issuer can be expected to 'skimp' unduly on equity, and otherwise to take undue risks, only when risk of bankruptcy losses is *involuntarily* or extra-contractually shifted from the firm's shareholders to its customers. This problem does not arise when joint-stock banks are permitted to form with any sort of liability arrangement. Customers who wish to do so may then shun the notes and deposits of firms whose shareholders choose to limit their liability to the par value of their shares and instead hold only the obligations of firms with multiple or unlimited liability for some or all shareholders. Note-holders and deposit holders who freely and knowingly choose to deal with a limited-liability issuer voluntarily assume a risk of partial dishonouring of their claims. In the event of bankruptcy they have no legal claim to remedy for a breached contract. The fact that all but three of Scotland's banks operated with unlimited liability during the free banking era indicates that unlimited-liability banking is not impracticable (though it does not settle the question of whether it was optimal, because limited liability was not an option for those banks).

It might be asked whether unlimited shareholder liability for banks would not lead on the other hand to their holding 'too great' a specie reserve or undertaking 'too little' risky lending. The rapid growth of the Scottish economy during the free banking era casts doubt on the notion that over-conservatism in bank lending impeded its progress. The risks of a bank's asset portfolio can be fully internalised by contractual arrangement. In this way the optimal amount of banking risks may be undertaken. The bank's shareholders may bear these risks alone by adopting unlimited liability, or they may transfer some risk to note-holders and deposit holders by adopting limited liability. Competitive conditions would compel a bank to compensate the note-holders and deposit holders for any non-negligible risk attached to notes and deposits because of limited shareholder liability. Note-holders and deposit holders would then decide whether particular risks were worth bearing. So long as unlimited liability is not compulsory but firms may also be formed with limited liability for contractual obligations, there appears to be no obstacle in principle to the portfolio risks of banking being borne only by those most willing to bear them, whether that be the note-holders and deposit holders, or the shareholders, or some combination of these. Recall that the unchartered banks of Scotland chose to retain unlimited liability in the 1860s and 1870s even after limited liability became available to them.

A likely concern about unregulated banking focuses on the possibility of bank runs.[11] Here the most important potential negative externality is the effect that the failure of one bank to meet a redemption run might have in raising the probability that other banks will suffer runs. Yet we find that such chains of bank runs never developed in Scotland under free banking, although they were not unknown among the English country banks.

Scotland's immunity from generalised runs was of course the chief inspiration for the pamphleteers urging legalisation of joint-stock banking in England. Robert Bell (1838, p.19) explained that the rare runs on individually suspect banks in Scotland had been merely to transfer deposits to other banks or to exchange the notes of a suspect local bank for notes of a national joint-stock bank. Confidence in paper currency remained unshaken, so that the Scottish banking system never faced the problem of an internal drain. In England, where legislation had fostered unsound banking, the public had learned to trust only gold and silver. The onset of commercial crisis could therefore bring on a run for specie, contracting the entire banking system and exacerbating the commercial situation. Hugh Watt (1833, p.70), a Scottish banker who came to England to manage one of the first joint-stock banks established after 1826, put the contrast starkly: 'The Scottish system IS ONE OF ENTIRE CONFIDENCE, AND DEVOID OF FEAR; while the English system is rather one of fear.' J. F. Macfarlan (1845, p.17) of Scotland insisted that 'runs are the last things which would even enter into the mind of any man who is acquainted with the history of banking in this country,' while an anonymous writer (1832b, p.178) was even stronger: 'A run upon any bank, such as happens in England sometimes or a panic, are terms the meaning of which is hardly understood in Scotland.'

[11] The fear of instability from bank runs is probably the single most commonly voiced objection to *laissez-faire* banking. Deposit insurance and a lender-of-last-resort agency are proposed as remedies. Discussion in the economics journals has centred around the influential bank-run model of Diamond and Dybvig (1983). For a summary of the Diamond-Dybvig argument and the most important critiques of it, see Selgin and White (1994, pp.1,728-30). For a more detailed survey, see Dowd (1992a).

The solidity of the Scottish banking system was not a matter of sheer luck, but is attributable to the freedom of the banks to make themselves solid and the competitive pressure on them to do so. Each bank in an unregulated system has an incentive to eliminate any spillover effects from other banks' difficulties by establishing a distinct brand-name identity and reputation and by holding as little of other banks' liabilities as possible. The Scottish banks evidently succeeded in doing the former, to judge from Robert Bell's statement. They accomplished the latter by frequent note exchanges and the practice of holding their own reserves. Failure of one bank should not lower public estimates of the soundness of others where the public does not experience bank failures in droves. Bank failures should not be expected to occur in droves in the absence of restrictions on adequate bank capitalisation, branch banking, and other means of absorbing or diversifying the risks of banking. Such restrictions were responsible for the instability of the English country banks and the banks in certain American states.

One factor undoubtedly contributing toward run-proofing the Scottish banks was their unlimited liability. Holders of bank notes and deposits did not have to rush to make withdrawals ahead of others in order to get full redemption value, because even bankruptcy did not free the bank's shareholders from their obligation to redeem its debts in full. The only possible incentive to instigate a run could then be doubt that a bank's shareholders had personal wealth enough to cover its negative net worth or desire to avoid the illiquidity of claims on a bank tied up in time-consuming bankruptcy proceedings. This first incentive hardly applied to the Scottish joint-stock banks with hundreds of shareholders, though it surely applied to English country banks. The second was negated by the fact that competition for a failed bank's customers would lead other banks to accept its notes at par when eventual redemption was not in doubt. The Bank of Scotland and the Royal Bank of Scotland pursued this policy not only in the case of the Ayr Bank failure but on other occasions as well.

Although adoption of unlimited liability is one method for a bank to assure the public of its solidity, this does not mean that unlimited liability is necessary for assurance adequate to forestall runs and panics. The three chartered banks of Scotland suffered no runs. In the present day, unlimited liability may or may not be an efficient form of redemption assurance. It is impossible to know the competitive market verdict on this in the absence of a competitive market trial. One alternative to unlimited liability might be private insurance against bank runs. This is feasible if bank runs occur randomly and independently, with a measurable frequency, and if insurance will not create excessively strong incentives ('moral hazard') for a bank to skimp on run-preventing measures. If outside insurance is not feasible, banks might employ other means for voluntarily pooling risks.[12] Most importantly, each bank may certainly make a variety of private expenditures for reducing the threat of redemption runs by assuring the public of its solidity.

12 Some insight on this question could likely be gained by investigating the variety of experiences across banking systems in regard to panics and their prevention. The panic-free system of 19th-century Canada particularly invites investigation. The bank-run model of Diamond and Dybvig (1983) is

Scottish experience suggests that it is *not* necessary, contrary to common assumption, that there be created a 'lender of last resort' to resolve the problem of occasional illiquidity among banks. In a free banking system no central bank exists to play this role. Instead there naturally arises a more or less regular system of interbank lending of existing reserves. Today in the United States and other nations commercial banks regularly lend and borrow reserves for short terms in well-organised funds markets. The reason for these loans is straightforward: A profit can be made lending funds to parties that demand them more urgently.[13]

Loans among banks within a system of course do not suffice when the system as a whole is temporarily illiquid. Under an international specie standard the banks of one nation may borrow on net from abroad. Borrowing will not be an adequate remedy if the system's illiquidity is not temporary but has resulted from specie outflows working off an excess supply of money. In that case the banks will have to contract their over-extended balance sheets.

The classic argument for a conscious lender-of-last-resort policy, made by Walter Bagehot (1873, p.71), was addressed to the Bank of England specifically. It was predicated on that bank being the sole holder of specie in the English banking system:

> 'There should be a clear understanding between the Bank and the public that, since the Bank hold our ultimate banking reserve, they will recognise and act on the obligations which this implies; that they will replenish it in times of foreign demand as fully, and lend it in times of internal panic as freely and readily, as plain principles of banking require.'

Bagehot did *not* argue that a free banking system would suffer for lack of a lender of last resort. As noted in Chapter 2, he understood that an unregulated system would not naturally develop an inverted pyramid of bank credit atop a single centralised specie reserve. The 'inherent instability in the monetary system' spoken of by Friedman (1953, p.219) may indeed be a problem in a one-reserve system where satellite banks rely for their liquidity on central bank liabilities. But this is as much an argument against legislation fostering that system as it is an argument for the expediency of a

unlikely to be useful for such cross-sectional historical studies. It depicts instability (in the form of two *possible equilibria, run or no run)* as so deeply rooted in fractional-reserve deposit banking that the model has no explanation to offer for how Scotland, Canada, and some other systems were *not* unstable. (It even seems to deny the possibility of a stable bank, except as a matter of extreme good luck.) Gary Gorton's (1988) work, in which a run is attributed to the arrival of information that raises the probability of bank insolvency, holds out more promise.

13 The experience of US commercial bank clearing-houses from 1857 to 1907 suggests that there may be a role for the clearing-house in brokering or intermediating interbank loans in emergency cases. See Timberlake (1984) and Gorton and Mullineaux (1987). The clearing-house may be in the best position to evaluate, cheaply and rapidly, a potential borrowing bank's solvency, particularly if it already imposes and monitors (through bank examination) solvency and liquidity standards for clearinghouse membership.

lender of last resort within that system. Bagehot (1873, pp.68-69) recognised as much.[14] He thought he would 'only incur useless ridicule' if he were to propose overthrowing the monarchy of the Bank of England, however, and so limited his proposals to the realm of the politically expedient.

The classic rationale for a lender of last resort therefore vanishes upon consideration of a free banking system. It is hardly appropriate to use the supposed need for a lender of last resort as an argument for central banking if it is the legislation fostering central banking that creates the need. F. A. Hayek (1978, p.102) has recently made this point, but with an emphasis on the central bank's monopoly of legal-tender currency rather than centralisation of bank reserves as the reason that commercial banks become dependent on a central bank for liquidity. Currency monopoly and centralisation of reserves are actually corresponding entries on the same balance sheet, so to speak. English country banks gave up holding specie, for example, when authorised by the Act of 1833 to hold Bank of England notes (the brand with a London monopoly) as their sole vault cash for redeeming their own notes and deposits.

In an unregulated system one bank would choose to hold another's notes as reserves in place of specie, assuming zero interest yield on both assets, only in the event that such extensive economies of scale characterised the issue of bank notes that the market for notes supported fewer firms than the market for deposits. The polar case would be natural monopoly in the issue of bank notes. The existence of such economies of scale is an empirical question. The record of Scottish free banking shows that non-issuing private bankers did operate in the early years of the industry, but also that they exited later as joint-stock banks of issue became predominant. There was no apparent tendency for the number of issuers to shrink down to one before 1844, though it had receded to 19 from a high of about 30. There was no evidence of natural monopoly in issue, nor even of a natural number of firms that could be called 'small'. Although it is impossible to be sure what might have transpired after 1844 in the absence of Peel's Acts of 1844 and 1845, the fact that under these Acts the number of Scottish banks declined steadily shows little about economies of scale. As entry was forbidden, the number had to decline if banks occasionally failed or merged.

Whereas some fear that a free banking industry would support too few bank-note-issuing firms, others hold the opposite fear that it would support too many firms. They worry that circulation of a large number of brands of bank notes would impose an unwanted informational burden on transactors by forcing them to distinguish good notes from bad. Brunner and Meltzer (1971, pp.801-02) have argued along these lines that the provisions of Peel's Act of 1844 for suppressing the number of country banks of issue 'raised economic welfare by reducing costs of acquiring information'. Anyone who has studied the Act and the circumstances surrounding it must find this

14 It is therefore inaccurate to cite Bagehot as though he had argued the necessity of a central bank or a lender of last resort under any fractional reserve system. This error is made by Friedman (1953, p.218) among others. Ironically, Friedman (p.220) himself insightfully suggests that 'the most attractive alternative way to eliminate inherent instability' other than 100 per cent reserve requirements is 'allowing banks to issue both hand-to-hand currency and deposits under the same fractional reserve requirements'.

statement highly implausible. If a measure like Peel's Act reduces information costs, it does so only by forcibly restricting choice. It is difficult to see how consumers' welfare is enhanced by restriction of their choices. If valid, the argument against 'too many' issuers of bank notes would hold equally against 'too many' issuers of demand deposits today and against the proliferation of a variety of product brands in any industry. The argument suggests that too wide a choice set makes life difficult for consumers and may efficiently be suppressed by government choosing for them. There is no warrant for believing this to be true. The question of how many firms can efficiently operate in an industry is a question of economies of scale best left to competition to resolve.

In particular, it is difficult to see how the entry of an additional brand of bank notes is analytically different from the entry of a new brand into any product market. Those who wish not to be troubled to find out about the new brand may simply refuse to deal with it. This leaves them no worse off in any relevant way. Those choosing to accept the new brand presumably believe the expected benefits of finding out about it to outweigh their additional information costs. The entering firm may of course bear the promotional expense of attempting to provide some information to potential consumers concerning the qualities of its brand.

Even if a bank-note industry at a given moment in time has more and smaller firms than would be the case in a long-run unregulated competitive equilibrium - as was probably true of English country banking in 1844 - the remedy is to allow competition to weed out the inefficient firms rather than to restrict entry. This weeding out may take place largely by merger and acquisition where small size itself is a competitive disadvantage. Government cannot simply impose the competitive outcome with less waste because it cannot know how many firms and which firms the market process will finally select.

These constitute the lessons, as we see them, taught by free banking theory and Scottish free banking experience. To summarise the chapter up to this point, the record of free banking in Scotland indicates, contrary to what otherwise might be plausible, that under free conditions (1) bad bank notes do not drive out good; (2) counterfeiting does not pose a major problem; (3) banks are not inherently prone to over-issue and suspension; (4) banks will not hold chronically insufficient or excessive reserves; (5) bank runs are not an endemic problem; (6) there is no clear need for a lender of last resort; (7) no pyramiding of reserves, making credit inherently unstable, takes place; (8) no natural monopoly exists in the production of paper currency; and (9) proliferation of bank-note brands is not a problem.

These lessons are obviously relevant to banking policy today, where they support the case for thorough deregulation. Their bearing on the choice among alternative monetary systems is less obvious. It is not possible here to analyse in adequate depth the shortcomings of current monetary arrangements or to consider every plan from moderate to radical that has been offered to remedy the monetary problems perceived by reformers. In doing so we would stray far afield. What we may do in closing this chapter is to consider the implications of free banking thought for the choice between precious-metallic commodity money and fiat money. Though the proponents of a gold or silver standard are today in the minority among monetary economists, let alone among policy-makers, their arguments have gained an increasingly respectful hearing in recent years.

Contemporary economists have commonly objected to a gold or silver standard that the use of precious metals ties up real resources of greater value than are tied up by a fiat paper standard. A well-known and often-cited estimate for the United States (Friedman, 1960, p.5) places the annual resource cost of a 'pure commodity standard' at 2.5 per cent of net national product. That estimate supposes, however, that banks under such a standard must hold 100 per cent commodity reserves against paper currency, demand deposits, and time deposits. In a free banking system there are no such reserve requirements. Banks are free to hold fractional reserves, allowing society to economise greatly on the use of gold. If banks generally find their optimal reserves of specie to be in the neighbourhood of 2 per cent of demand liabilities, as several Scottish banks did, the annual resource costs of bank reserves fall enormously. We must add to the costs of reserves the costs of the public's holdings of coin, if we assume that a free banking system would operate with full-bodied coins. We then arrive at an estimate of annual resource costs on the order of 0.014 per cent (that is, 1.4 *hundredths* of 1 per cent) of gross national product.[15]

This sort of utilitarian cost calculation is of limited import when the comparative benefits of alternative monetary systems defy ready quantification. The case for a commodity-standard-based free banking system is particularly difficult to capture in terms of measurable costs and benefits aggregated over society. Approaching the question in that way treats it as if a benevolent central mind could properly construct an ideal monetary system on behalf of an entire economy's members. The genius of free banking is not conformity to a blueprint, but evolution of institutions and modes of conduct in response to the decentralised decisions an economy's members make for themselves. The monetary system that emerges under free banking is 'the result of human action but not the execution of any human design', to use a phrase employed in another

15 We follow Friedman's (1960, p.104 n.) method of estimation. Under the assumption of constant long-run relative costs of production, the equilibrium annual output of the monetary commodity will be that quantity consistent with constancy of its purchasing power. Past US experience suggests that the M1 money stock would have to grow by about 2 to 4 per cent a year to keep its purchasing power constant. Given the proportions in which M1 is currently divided among deposits, notes, and coin, and making the upper-bound assumption that all coins are full-bodied, a gold standard would involve about $25.7 billion in gold coin held by the public and $22.5 billion in gold bank reserves held in a 2 per cent ratio against paper currency and checkable deposits, for a total gold stock of $48.3 billion. Two per cent annual money growth would mean adding $966 million in new gold annually, about 0.014 per cent of projected 1995 gross national product. This figure (note that the same percentage was arrived at in the First Edition, using 1982 data) is small in comparison with plausible estimates of the losses due to monetary instability. Lucas (1987, pp.26-27, 30n.) estimates the cost of a sustained 10 per cent inflation rate to be around 0.5 per cent of national income, and estimates the value of eliminating aggregate (cyclical) consumption variability to be of the order of 0.1 per cent of annual consumption.

Assuming 4 per cent rather than 2 per cent annual money growth means doubling the estimate, of course. On the other hand, assuming that redeemable token coins or banknotes replace full-bodied coins in circulation - a development banks would want to promote - means reducing the estimate by slightly more than half.

context by the Scottish philosopher Adam Ferguson.[16] Free banking thought has little in common with the sort of argument for a pseudo-gold standard that depicts stabilisation of the exchange rate between a distinct national currency and gold as the optimal rule for central bank policy. Under a global specie standard there is no distinct national currency. Free banking means the elimination and not the redirection of the central bank.

Although specie-based free banking might perform better than current policy régimes in respect to particular macro-economic policy goals - price level predictability, interest rate stability, low opportunity costs of holding money, high growth of real output, low variance of real output, and so on - it would be inconsistent with the spirit of free banking to view it as though it were a clever design for achieving specific ends. The monetary system of free banking is not a government device for the achievement of government policy goals, but a private means toward - and the product of - the individual pursuit of private ends. The rationale of free banking is simply that of a spontaneously evolved or 'natural' monetary order. The idea of free banking may today have little appeal to those who believe that a monetary system ought to be rationally constructed to produce specific results. But its relevance to contemporary debate will grow as scepticism grows concerning the wisdom of monetary design. The prospect exists, as James William Gilbart (1841a, p.67) expressed it, that 'when a few more theories have been tried' by monetary authorities, and a few more severe business cycles suffered as the result, 'then we may discover that all our attempts to regulate the currency have been productive of mischief, and we shall be willing to let the currency regulate itself.'

16 See Hayek (1967, pp.96-105) for the reference to Ferguson and an explication of the ideas expressed by this phrase.

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