DOMESTIC AND MULTINATIONAL BANKING

The Effects of Monetary Policy

Rae Weston

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To the real world, which is
able to operate without the
assumption of perfect knowledge.

PREFACE

> 'The writer works alone, producing only clusters of words, surely the most whimsical contribution of all to the gross national product.' (Caskie Stinnett, 'Room with a View', *Down East*, June 1978, p.2.)

This writer has not worked quite alone. The model developed in Part 1 and extended in Part 3 is that first provided in a paper presented to the Sixth Conference of Economists, Hobart, Australia in May 1977 entitled 'A Theory of the Banking Firm and the Effects of Regulatory Constraints'. The co-author of that paper, Sheila M. Bonnell, of course should be regarded as co-author of the model, without being held responsible for any inadequacies that remain. Our experience in the production of the model confirms the view that in the case of four-sector diagrams, two sets of eyes are better than one. It is the present author's extreme regret that time and other intervening circumstances have prevented this book from having the same authorship as the paper.

The justification for the 'clusters of words' that follow is primarily that no book yet published begins with the case of a completely unregulated commercial bank and follows the progression of banking through to the multinational banking stage. It is hoped that this contribution will begin to fill that gap. The mystique of banking is such that words in common parlance in banking business like 'merchant banks', 'roll-over credit', 'Eurodollar' and even 'multinational' are the subject of quite imperfect knowledge in the community.

Equally there is a rather nationalistic tendency to regard a national banking system's changing methods of control over the past decade as a national rather than as an international feature. In part this result is due to the tendency within both the UK and the USA to discuss their own domestic banking structures alone in the process of explaining banking operations.

It is hoped to remedy that bias as far as possible within the confines of this book by using a comparatively under-specified model of a bank which is able to be used to analyse the regulatory structures of a wide range of economies and is not dependent on any particular institutional framework for its validity. We further restrict our analysis to commercial banks, the original form of banking in most economies, as well as the base of most of the movement into multinational banking. In the theoretical analysis we explore the operations of an individual or typical bank and even in the empirical parts we are primarily concerned with the influences and factors that relate to a single bank.

More specifically it is intended that this contribution analyse the nature of banking; demonstrate how banking might operate without regulatory constraints; survey the patterns of regulatory constraint in a wide range of economies; analyse the effects of these various forms of constraint on the operation of a previously unregulated bank; examine the move to multinational banking; explore the nature of multinational banking and its particular risks; provide a diagrammatic illustration of certain of the risks of multinational operations; and examine some of the recent proposals to regulate multinational banking.

It is argued, on the basis of this analysis, that while quantitative regulations have the most deleterious effect on purely domestic banks, regulations which affect price will be more critical in the case of multinational banking operations and may have quite disastrous results if imposed without this difference being realised.

Except in the last Part, our concern lies with what might be termed discretionary banking regulation, that is regulations varied as part of monetary policy, rather than with prudential regulation.

INTRODUCTION

With very few exceptions, the textbooks and literature on banking are framed primarily within the context of a particular institutional framework, usually that of the USA or the UK. Those books on comparative banking either deal with central banks or make purely institutional comparisons of national banking systems. There are of course books on the new and fascinating genre, the Eurobank, and some on the multinational banks.

It is the purpose of the present contribution to take a modern view of domestic banking, the effects of regulation on banks, the move to multinational banking and the recent moves to regulate banking operations over a number of countries. At the very beginning we look at the problem of identifying the nature of banking, which is variously regarded as a production process and as an investment portfolio in recent discussions. From an analysis of banking operations it is possible to demonstrate that a more reasonable interpretation of banking, capable of explaining its main operations convincingly, is to analyse banking as a retailing of services.

Since banking has within most of our lifetimes consistently been the subject of regulation, it is conceivable that a number of banking practices may have arisen in response to regulation and would not exist if banking was not regulated. Because of this problem, the most efficient approach to analysing the effects of regulation on the operations of an individual bank is to begin by providing a model of a bank operating in an unregulated environment and to introduce subsequently into that, the various regulatory constraints. Accordingly in Part 1, following a discussion of the nature of banking, a model of a bank in an unregulated environment is introduced. The basis for this model is Fischer Black's world of uncontrolled banking which we amend to provide a model appropriate for our purposes.

The model, which is developed in the latter chapters of Part 1, is summarised in a four-sector diagram which illustrates the critical interdependencies of bank decisions. It is intended that this diagram provide a simplified description of the operations of an individual bank, from which, later in the book, it will be possible to investigate the effects of various types of regulation.

In Part 2, following a brief outline of the main regulatory constraints on banking, banking regulation in nineteen countries is discussed. It is the intention of these chapters to provide, for each of these countries, an outline of the institutional framework within which banks operate, a description of the instruments of regulation used and a discussion of the recent experience of controls (in the seventies in all cases, and in some countries from the date of the last major change in banking regulation in the sixties), and a brief commentary on the effects of recent changes on the operation of individual banks.

There is, of course, much information available about bank regulation in the USA and UK and increasing information about European countries but little on the wide spectrum of systems of banking regulation that exist elsewhere. From this survey it is possible to identify several combinations of constraints which are used depending on the market conditions of particular economies. For example, in a number of countries the influence of external flows of capital and trade is so strong that the major aim of regulation in recent years has been to neutralise these flows, a task complicated in a number of cases by the absence of a money market.

Although it is often said that the main central banking functions derive from that original central bank, the Bank of England, there is no consistent pattern along which domestic banking regulation in these nineteen countries may be seen to be moving in the present decade. For example, while a number of European countries, unimpressed with the efficiency of indirect controls, have returned recently to more direct controls, Australia has moved towards the indirect type of controls and particularly to open market operations. Credit ceilings have proved quite efficient for some small open economies and yet incapable of controlling banking activity in other open economies. West Germany has all but eliminated the ability of its banks to manage their liquidity in the same period as New Zealand has moved from a quite restrictive system of regulation to allowing its banking system wide scope in its liquidity management.

From Part 2 we are able to identify the main individual types of banking regulations used and a number of combinations of controls which have been frequently used, and in Part 3 attention is turned to introducing these regulations to our original model of the unregulated bank. This facilitates the comparisons of the operations of a regulated and an unregulated bank and of the various types and combinations of regulations.

Analysis of the effects of the commonly used regulatory constraints provides some indication of the strategies which banks might employ in reaction to these restrictions. The possibility of price competition between the banks which the unregulated model suggests is not strong, is shown to be further reduced by the impact of regulation, while at the same time the case for non-price competition and product augmentation is strengthened. The tendency of banking towards oligopoly is reinforced, therefore, by regulation. It is possible to find in regulation and its impact a rationale for domestic banks to move into the multinational sphere of operations because of the differing nature of these operations.

In Part 4 the move to multinational banking is examined in more detail. Consortium banks and their growth are analysed and the particular problems of multinational banking in the present decade are discussed. Because the operations of multinational banks differ in many respects from those of purely domestic banks, a detailed examination is made of roll-over credits and interest rate risk, exchange rate risk, information flows and the management problems of multinational banks. A very elementary model of these operations is provided in order to facilitate comparisons with the unregulated and regulated models of banking, and the essential differences which become apparent from these comparisons are analysed.

Part 5 directs attention to the currently controversial question – what kind of regulation or supervision is appropriate for multinational banking operations? – and to the effects of various kinds of regulation on multinational operations and on the operations of the banking firm as a whole. The types of regulation proposed are examined and their various impacts on the model of multinational banking operations analysed. Examination of the costs and risks of these proposed regulations suggests that some of the same effects as result from the regulation of domestic banks may also occur here.

If banks are, as this study suggests, individual enterprises concerned with providing services in order to generate profits and ensure their own long-run survival, care needs to be taken in using regulatory constraints for wider macroeconomic motives, or less desirable results may be produced at this microeconomic level of individual bank operations.

Milton Friedman and the late Harry Johnson have applied standard microeconomic analysis to banking and concluded that, normatively, although minimal official regulation is justified it should be applied so as to maximise competition in banking.

It is argued here that those regulations which affect the quantity of deposits and/or loans may be used on multinational banks with much the same result as on domestic banks, that is, they may limit the extent to which these banks are able to satisfy demand and permit other non-bank institutions to satisfy that demand. On the other hand, the implementation of controls affecting the cost and pricing of loans may be seen to have very serious consequences for the banks and threaten the now only occasionally precarious stability of the multinational banking system.

Part 1

THE NATURE OF BANKING

1 THE ORIGINS OF MODERN BANKING

'Many banking practices are a response to regulation and would not exist if banking were unregulated.' (Fischer Black, 'Bank Funds Management in an Efficient Market', *Journal of Financial Economics*, vol.2 (1975), p.324.)

The antecedents of modern banking appear to be the activities of goldsmiths in seventeenth-century England who, of necessity requiring strongrooms to hold the materials of their trade, found that they were able to rent out the excess space for the safekeeping of money and other valuables. From the provision of this facility there developed the practice of customers depositing money in return for a receipt or certificate of deposit, and gradually not requiring the identical coin they had left but merely coin of equal value. In practical terms the goldsmiths assumed ownership of the coin on deposit and employed it, but they always held sufficient to convert certificates of deposit on demand. From this beginning of deposit-taking, the goldsmiths next began the practice of chequing when they enabled a merchant who wished to pay another merchant to write an order to his goldsmith asking for the transfer of money from his account to that of his creditor without having his deposit certificate converted into coin.

These early embryo commercial banks commenced the issue of notes in small denominations instead of issuing one certificate of deposit to cover a customer's deposit and as these notes became generally acceptable for payment the goldsmiths made them payable to bearer. After their notes began to circulate as a medium of exchange it became possible for goldsmiths to make loans by using the notes not in return for a deposit of coin but for a promissory note given to the goldsmith by the borrower. Provided that not all notes were returned simultaneously for conversion into coin, notes could be issued for a greater value than the goldsmiths held in coin. In most circumstances the goldsmiths were able to predict with considerable accuracy the amounts of coin that were likely to be redeemed from them. However, when depositors as a whole decided to convert their paper money into coin, as happened for example when news of the destruction of the British fleet at Chatham reached the country in 1667, the goldsmiths were unable to satisfy the demand and became bankrupt.

Not only goldsmiths but also merchants issued notes only fractionally secured by holdings of coin, and in England, France and Sweden governments began to grant charters incorporating companies to accept deposits, transfer money and issue notes only fractionally secured by reserves. Probably the first modern bank was the Bank of Sweden begun by John Palmstruck in 1656 which, in spite of early difficulties with fractional reserve banking, including at least one occasion when payment on its notes was suspended, survives to the present day and operates as Sweden's central bank. The Bank of England, also eventually a central bank, was established in 1694 by William Patterson when a charter was granted on condition that £1.2 million was advanced to the government at 8 per cent interest to provide for the financing of the wars with France. The advance was made from the sale of shares in the Bank, but since its capital equalled its loan to the government the Bank began with a cash shortage which by 1696 had forced it to suspend conversion of its notes.

Mints notes that it was not until the 1770s in England and the 1820s in America that it was suggested that bank advances ought to be restricted to short-term commercial purposes because if only real bills were discounted it was argued that the growth in bank money would be in proportion to the needs of trade.[1] While this 'real bills doctrine' has shown considerable durability and in a number of countries the preponderance of bank advances are still short-term in nature, banking in the modern world has reached the much wider scale of operations discussed later.

The nature of central banking was by no means clearly defined until early in the present century, although the Bank of England had assumed what were later agreed to be the main functions of central banking during the nineteenth century. From its original charter the Bank of England retained its right to issue notes and in 1833 legislation provided that only its notes were legal tender. The growth of joint-stock banking increased the ambit of the Bank of England's influence as it acted as the custodian of private banks' cash reserves and this position was further enforced in 1854 when it was agreed that differences between the other banks of clearing would be settled by transfers between their accounts at the Bank.

Hawtrey[2] alleges that the Bank of England only grudgingly assumed the responsibilities of lender of last resort and it was not until the third of the nineteenth-century financial crises, that of 1866, that the Bank 'accepted the responsibility of unstinted lending'[3] and in fact it was only in Walter Bagehot's publication, *Lombard Street*,[4] in 1873 that the expression 'lender of last resort' was first used. Even Bagehot, in recognising the accomplished fact of the Bank's role as lender of last resort, commented that he would have preferred this last resort responsibility to have been spread among a number of equally sized leading banks.

Once accepted as a responsibility by the Bank of England, the lender of last resort function came to be taken as a role of central banks to the extent that the US Federal Reserve Banks automatically assumed this responsibility on their establishment. The discount rate, often referred to as the Bank rate, remained a primary instrument of control into the present century; however, on a number of occasions when liquidity was high, the Bank of England found it very difficult to implement effective discount rate changes. On such occasions the Bank withdrew funds from the discount market by selling Consols (Consolidated Government stock) for cash and buying them back for the period of monthly settlement that was unexpired. Sayers[5] describes the procedures for reducing the available money supply as piecemeal rather than systematic and says that the sheer diversity of techniques employed suggested that the Bank was not satisfied with any of them.

As liquidity became an increasing characteristic of the system, the Bank of England began to use open market operations to facilitate the effectiveness of discount rate policy and the Federal Reserve System, on its establishment in 1913, was authorised to use open-market operations as a supplement to discount rate policy.

Variable reserve requirements appear to have been first used in the United States which in 1933 legislated to provide that commercial banks should maintain minimum credit balances of fixed percentages of their demand and time deposits, and in 1935 legislated to give the Federal Reserve power to vary these reserve requirements from time to time, within limits above the normal minimum reserve ratios. Very many countries now use variable reserve requirements as a major instrument of regulation of banks.

Although the rationing of central bank credit was one of the earliest control instruments used by the Bank of England even in the eighteenth century, its consistent use was a contradiction of the Bank's gradually accepted role as lender of last resort and, accordingly, only in difficult situations was rationing used, on occasions together with direct quantitative control of bank credit. This latter technique has become the more general regulatory instrument although its use is recognised as likely to result in distortions of the structure and efficiency of the banking system if applied as a long-run instrument.

It is difficult to date the commencement of selective credit controls, primarily because these may have been accomplished at times by moral suasion which has been very informally used over the whole history of the Bank of England as a method of influencing the banks. Truptil[6] quotes from the *Financial News* a comment which describes the efficiency of moral suasion as used by the Bank of England: 'A city which for six months on end can obey a sanctionless ordinance to refrain from issuing foreign loans . . . is . . . an organism knit together by bonds of a finer fibre than the common desire to make money' (p.197).

The efficacy of moral suasion, already weakened by proliferation of institutions to control, may be regarded as almost drowned out in the seventies by the huge liquidity flows characteristic of this period. Many central banks, hitherto able to rely on moral suasion without any legislative coercion, found that the directions given were either ignored or evaded.

As the range of controls used by central banks has widened so has the range of operations of the commercial banks. Christians[7] describes the 'continental European-style universal bank' as providing these services: accepting deposits of all sizes for the most varied terms; granting short, medium and long term credits to business and the private sector; buying and selling securities; handling payment transactions; financing imports and exports; and dealing in foreign exchange, notes and coin. Banks in many countries, while not necessarily describing themselves as universal banks, nevertheless either offer this range of services or are moving in that direction.

Notes

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2 THE ESSENCE OF BANKING

'It is the conglomeration of all the various services and functions that sets the commercial bank off from other financial institutions. Each then is an integral part of the whole, almost every one of which is dependent upon and would not exist but for the other.' (J. Clary in *US.* v. *The Philadelphia National Bank and Girard Trust Corn Exchange*, 201 F. Supp. 348 (1962) 363.)

The many analyses of banking at a microeconomic level that concentrate on the allocation of a bank's funds between competing stocks of assets, regard a bank not as a firm but as a rational investor operating in an environment of uncertainty or as Klein[1] puts the point 'the neoclassical analysis of the firm has yielded to portfolio theory' (p.205). Unfortunately this view appears to do much less than justice to the art of banking. The comment of the celebrated European banker, the late Louis Camu,[2] that 'current usage tends to confuse the image of the banker with that of the financier' appears a quite appropriate description of the debate about banks as firms or investors (p.67).

Camu's definition of the financier accords with that of the rational investor who manages a portfolio of mainly financial assets and may be contrasted with his definition of the banker who is 'primarily a large retailer'. While the essence of the rational investor's activities are those of the portfolio manager who seeks to restrict the range of activities on which there is risk so that the maximum return consistent with the preferred level of risk is obtained, the essence of banking is rather that of the firm which has potential customers of many sizes, all of whom it wishes to serve. Of course, a basic tenet of the rational investor is broken consistently by bankers as their diversification normally exceeds the 'optimal' limits to which the former would restrict his investments.

'The business of lending in tiny amounts', as Camu describes retail banking, is an art rather than a science which depends on dealing with customers and not only with their actual or intended financial resources. For example, it is in the interests of the banker to maintain close contact with those customers who have access to alternative sources of credit and those who have large, long-held and stable deposit balances, and to allow these customers access to credit as continuously over time as possible. This is not necessarily consistent with either minimising risk or generating maximal returns, but it is highly consistent with the basic principles of banking as a retail business.

It would be unexpected if the traditional portfolio paradigm was a reasonable approximation of bank behaviour, given the typical portfolio theory assumptions that a firm has an unlimited and riskless ability to borrow and that there are perfect financial markets. Of course in a perfect market without the transactions and information costs that only occur in imperfect markets, there would be no role for financial intermediaries. Further, portfolio theory classifies earnings and other balance sheet entries as stocks, but as Boris Pesek[3] has noted 'bank money is constantly sliding into an abyss of non-existence' and is not comparable to a stock 'but rather to a river, constantly renewed in the mountains and constantly disappearing down the valley, with the banker controlling the sluice' (pp.360-1).

The necessity for alternative deployments of bank funds to have quantifiable or at least measurable returns which is a basic requirement of portfolio theory is difficult in the case of bank branching. Although it may be reasonable to argue that depositors are responsive to the presence of nearby bank branches in the sense that they are prepared to hold larger deposits in a bank conveniently located to them, it is much more difficult to find a sufficiently high and reliable return from branching to justify the allocation of funds to branching in preference to investment in securities. Nevertheless, it may be argued that without regulation branching may not be regarded as a competitive ploy, and even with regulation restricting other forms of competition, a bank is more likely to find it costly than rewarding to have its deposits spread over a large number of branches. It is interesting that the provision of branches is also difficult to place within the context of the theory of the bank as a producer (as will be seen below), but that it is quite explicable within the theory of the bank as a retailer.

Most telling of the omissions that portfolio theory has as an explanation of the behaviour of banks are those noted most recently in a paper by Sealey and Lindley;[4] the total lack of production and cost constraints and, as a result, the omission of the impact of these constraints on the operations of the bank. In response to these inadequacies, a number of studies have appeared which attempt to describe the operations of a bank in terms of the concepts of the theory of the firm. In particular those studies which have recently pursued this path have concentrated on using the theory of production to develop a theory of the banking firm as a profit-maximising producer.

For example, one view of banking used in the literature is as a 'producer' of specialised financial commodities[5] which are created, in the words of Benston and Smith,[6] 'whenever an intermediary finds that it can sell them for prices which are expected to cover all costs of their production' (p.215). Within this approach, which appears to regard a bank as a form of manufacturer, there is a considerable divergence of opinion. MacKara[7] describes deposits as an input to banks and loans and investments as an output, while Pesek[8] and Towey[9] argue that banks produce money by employing loans as inputs, and Melitz and Pardue[10] prefer the idea that deposits are inputs from which credit is produced. Most recent of the contributions to this approach is that of Sealey and Lindley[11] who describe the production process as a 'multistage production process involving intermediate outputs, where loanable funds, borrowed from depositors and serviced by the firm with the use of capital, labor and material inputs, are used in the production of earning assets' (p.1254).

Ragnar Frisch[12] distinguishes between the technical process of production – which is a process of transformation, directed by human beings, by which outputs are generated by the transformation of inputs which cease to exist in their original form – and production in the economic sense. The latter Frisch defines as 'the attempt to create a product which is *more highly valued* than the original input elements' (p.8) in terms of market prices.

Applied to the operations of banks, however, production in the economic sense does not seem to be particularly applicable. Consumers or borrowers take loans from banks rather than from the ultimate source of the funds, the original lender, because it is cheaper for them to do so. That is, banks allow borrowers access to funds in a divisibility that is convenient to them and without the borrowers undertaking the cost of search for an ultimate lender and without the ultimate lenders facing the risk of loss or bankruptcy. The provision of loans by banks is cheaper than those provided without intermediation because banks possess a comparative advantage over those alternative sources in processing the necessary documents, in acquiring information about the credit-worthiness of borrowers, in the search for sources of funds and in monitoring the progress of the loans.

Further, it may reasonably be argued that a cheque account does not have the essential characteristics of a product, but is rather a service in which a bank provides storage and transfers of funds for its customers. Sealey and Lindley[13] argue that the technical production in which banks are involved, that is, the transformation process in which inputs lose their identity and other goods or services are generated, involves acquiring funds from the surplus spending units and lending them to deficit spending units. Demand deposits do not fit very easily into this approach and neither do investment advisory services or safe deposit services, since no transformation is really involved in these cases.

It may of course be said that credit is created or produced by banks and that the theory of production ought to be applicable to this aspect at least; however, an individual bank is unable to create credit and perhaps more reasonably ought to be regarded as a distributor of funds and a provider of certain ancillary services.

Although it is possible that further advances in the theory of production and in portfolio theory may provide tools more suitable for the analysis of banking operations than the current states of either theory, for present purposes a more consistent interpretation of the variety of banking services may be provided if we regard the banker as a retailer of services. It is to this interpretation that we turn in the next chapter.

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3 THE BANKER AS A RETAILER OF SERVICES

'The Banker, therefore, is primarily a large retailer. His bank is a great emporium of credit deals and highly diversified information.' (Louis Camu, 'The Daily Life of a Banker', *The Banker*, April 1977, p.70.)

The advantage of analysing banking operations within the format of the theory of the retail firm rather than of the manufacturing firm or by means of portfolio theory is that a number of important banking activities which are only justified uneasily, if at all, by the alternative theories, are readily explicable on this basis. As will be shown below, the place of demand deposits in banking operations is the neatest example. We begin by examining the nature of retailing and then analyse banking operations within this framework.

Retailing is a sub-set of the marketing sector of the economy. It is the function of the specialised institutions within this sector to add economic value to the products or services they handle by the creation of time, space and possession utility. Retailing is the sale or distribution of goods and services to final consumers. The description 'final consumers' implies that they do not buy for resale or further manufacture, but for the satisfaction in use which the products or services will give them. Time utility is that increment of economic value that is achieved by storing or holding a commodity until it is most marketable, while space utility is economic value created by the distribution of goods and services at places convenient to consumers, and possession utility may be described as the value created through the provision of information to the potential purchaser of the good or service about the attributes and utility of that good or service.

McNair[1] has described the progressive development of distributive enterprises as involving three stages: in the first stage, their success is achieved by offering lower prices; in the second stage they improve the quality of the merchandise they carry; while in the third stage, during which increasing costs, a rising proportion of fixed capital to total investment and a decline in the rate of return on capital often occur, they compete by offering services.

'Retail' in French means to cut again or to sell again in different quantities to that bought. Gist[2] describes the economic base of retailing as composed of five elements. The first element is specialisation and division of labour. Within the marketing sector of the economy, retailing enterprises specialise in selling in detail to consumers, dividing up the market so that groups or communities of consumers are served by sufficient separate enterprises for at least a competitive profit to be earned by each of them. Second of the elements is spatial convenience, that is, a retailer supplies a given set of consumers with the goods or services that they require at places convenient to these consumers. Third, retailing as a form of distribution may correct what Alderson calls 'discrepancies' in distribution generated from economies in manufacturing. Specialisation in manufacturing tends to result in each manufacturer producing a large volume of a few varieties of his product, but these large amounts must be divided up by retailers who will need to display a variety of the product concerned in an attempt to satisfy the preferences of consumers and therefore they are likely to 'break bulk' or sell again in smaller quantities. Both the satisfaction of consumer preferences and breaking bulk are valuable economic functions, as they involve the provision of goods or services of the right kind in the right quantities for consumers.

The fourth element, the retailer's role as a source of information, suggests that consumers are information seekers who acquire from retailers advice on goods and services with which they are not familiar. Smith[3] (pp.16 and 19) suggests that the only way in which information is relevant here is as a demand by the consumer for a wide range of goods and services from which to choose 'including the provision of adequate data concerning items of which specimens are not immediately available' (p.19). As the final element Gist suggests that retailing creates value in offering services such as hours of opening, choice of stock and a variety of ancillary services to consumers.

Henry Smith in a classic study of retailing[4] concluded that 'taking all the facts into account it looks as if there is something queer about competition in the retail trade' (p.7) which may be explained by the application of the theory of monopolistic competition which is based upon the characteristic of retailing that at any moment a consumer wishing to make a retail purchase will not want or be able to find the goods and services at the lowest possible price and so his choice of retail outlet will be based on imperfect knowledge. Hood and Yamey[5] however, argue that the economics of retailing cannot satisfactorily be explained by 'an essentially static and long-run theory of monopolistic competition' (p.136). Changes in retail techniques and the continuous flow of new entrants will continuously unsettle the market in their view and make discussions of long-run equilibrium, in which supply is adjusted to demand and firms earn 'normal' profits, inappropriate. Hood and Yamey also argue that 'the use of an oversimplified theory of oligopoly is equally unrealistic', particularly to the extent that this implies tacit or formal arrangements to set prices.

It is sufficient for our purposes to allow that retailing is likely to be characterised, depending on which sub-group is being discussed, by imperfect competition. Because of the wide range of the sizes and types of operations described as 'retailing' and the restrictions under which some sub-groups operate, it seems quite inappropriate to be more specific about the precise form of competition. Further there is the problem of whether to analyse the retailer himself as the unit concerned or a particular range of the goods and services he provides as the unit, each of which is likely to yield different answers.

The theory of retailing which seems appropriate is that which regards all retailing as characterised by imperfect competition, and the particular sub-groups of retailing as characterised by their special features as monopolistically competitive, oligopolistic, duopolistic or even monopolistic. For the particular area of retailing with which we are concerned, banking, in an unregulated state there is a tendency to oligopoly which is reinforced by the effects of regulation.

Next, it is necessary to consider the definition of services and the distinction between these and products. Victor Fuchs[6] writing in 1968 noted that Stigler's 1956 comment that 'There exists no authoritative consensus on either the boundaries or the classification of the service industries' could still not be challenged. In contrast, products are tangible goods, which can be invented, processed, manufactured, transported, replicated and often mass produced. The process of production, in the technical sense, requires that certain raw materials or inputs enter into a process in which they cease to exist in their original form and from which output in the form of products is generated.

While products are things, services are not necessarily tangible and are often flows or concepts of value. Services can be developed experimentally but cannot be tested in laboratories as can most products and the service will often be independent of any of its tangible trappings. Services require people to render them and their provision is often associated with high fixed costs for staff, buildings and communications.

Shostack[7] demonstrates the distinction between products and services by comparing automobiles with airline travel. Automobiles are physically owned – tangible objects, the exact nature of which may be varied by the addition of other tangible objects in the form of options. Automobiles may be used to provide the service of transportation but are not, of themselves, a service. In contrast airline travel is in essence a service in which the most vital element is transport but which may attract a different clientele according to its flight schedule, the type of aircraft used and the pre-post and in-flight services provided.

Fuchs[8] (p.12) points to a further contrast, in that the consumer often plays an important role as a co-operating agent in the provision of services which does not occur in the production of goods. For example, Fuchs notes that productivity in banking will be affected by whether a bank officer or a customer fills out the deposit slip and, if the customer does so, on his knowledge, experience, honesty and motivation. In addition to being more customer-oriented, many service industries are more labour- than capital-intensive and may have more labour-embodied technical change than capital-embodied change. Services are therefore more consistently capable of being individually tailored to customers' needs than are the majority of goods.

It remains for us to consider the extent to which banking operations may be appropriately analysed within the framework of the theory of retailing. In many countries the bulk of bank deposits are made in the form of current or demand deposits. By the use of cheque accounts which are a characteristic service provided for demand deposits, consumers are able to make consumption decisions across both space and time. Demand deposits offer consumers a more convenient and, for that reason, cheaper means of effecting transactions than by the use of barter or currency. Other advantages which demand deposits provide for holders are their complete divisibility down to the minimum unit of currency and the ancillary provision, by means of cleared cheques and bank statements, of complete records after transactions. In terms of retailing, demand deposits allow the breaking of the bulk of the deposit into completely divisible units for the purchase of assets or the payment of debts at the option of the consumer. The deposit does not change its form, it continues as liquidity, it is merely now able to be more easily divided for the purpose of making payments. Because of their specialisation in the provision of demand deposit facilities banks are able to reduce transactions costs for these below the level of transaction costs which consumers would incur in using either barter or currency. Additionally the demand deposit has time utility since the consumer is able to vary his payments across time as well as across space. Consumers value the services provided by the demand deposit facility sufficiently highly that in a large number of countries not only need no interest be paid by a bank on these deposits but charges are levied on them.

Banks provide their demand deposit and other services to consumers (whether these are businesses or individuals) from a number of branches and agencies located at places spatially convenient to these consumers. Through these branches and agencies banks provide loan facilities to customers. It is comparatively risky and expensive for deficit and surplus spending units to transact directly with each other rather than through the intermediation of a bank. That is, banks by specialisation in the provision of loans are able to obtain economies in the gathering, checking and continuous monitoring of information about classes of borrowers, they can gain access to credit information collected by others and they are able to reduce significantly the costs of search which would be incurred by borrowers and lenders if they had to seek each other out directly. The types and amounts of loans, again a breaking bulk transaction, that a particular bank will offer depends both on the areas in which it has expertise and the clientele which it services. Clients will wish to have banking services available at their spatial convenience and banks will find it worthwhile to establish local branches to specialise in the provision of services, particularly since convenience of location rather than lowest price is the more consistent attraction for clients in an imperfectly informed position. Loans will be individually tailored to the borrower's circumstances which will include the bank's own experience in lending to borrowers of similar characteristics as well as information available about the individual and the collateral he may be able to provide.

In their specialisation over space banks may also specialise in particular clientele, that is, businesses or households. The other services provided by banks in addition to accepting deposits and making loans include the provision of financing services for foreign trade including dealing in foreign exchange and notes and coin, investment advice and facilities for safe deposit. These services are all able to increase the value of the banks to the consumer since once he deposits with them the marginal transportation and inconvenience cost for these will be zero to him. The more extensive the additional services provided, the less likely that a consumer will shift his business to another financial intermediary which provides less services.

The investment in securities by banks is capable of several interpretations that are consistent with the view of banking as a retail service. First, as the alternative means of holding the funds invested in securities may be in the form of reserves, these investments may be regarded as a least-cost means of holding liquidity as a potential inventory from which future loans may be provided. Second, if loans are regarded as a service provided to individuals and businesses for reward, investment in securities may be regarded as a service provided to equity markets and money markets for reward. Third, it may be considered that investment in securities is merely a specialisation in an area in which more complete information is available on which to assess risk and that this provides an investment of stable risk, although not of stable return, to complement investment in personal and business loans of stable return but less stable risk.

The holding of some part of reserves in the form of cash rather than of securities accords with the need to hold sufficient cash to accommodate the demands of customers and this amount may be minimised over time with greater experience of customer requirements.

From this interpretation of banking as the retailing of services it can be seen that the main activities of banks are readily explicable. It is further apparent that Camu's explanation of the nature of banking fits neatly into this interpretation. Viewing banking as a retailing of services does not, of course, move us away from analysing its operations by the use of the theory of the firm, it simply eschews the theory of production and portfolio theory as appropriate vehicles for analysis.

Since a major concern of this study is the identification of the effects of regulation on banking, in order to isolate and identify these effects it is necessary first of all to examine the operation of a banking firm in an unregulated environment. The theory of the banking firm developed in the remainder of this Part uses the diagrammatic approach as the most appropriate way of demonstrating the inherent interdependencies of banking decisions. It is to the development of this model that we now turn.

This does not of course mean that neither the theory of production nor portfolio theory is ever appropriate for the analysis of banking. Portfolio theory in particular is clearly very relevant to the investment decisions of banks, and one major service provided by banks, of course, is the management of an investment portfolio on behalf of depositors who, because of information costs, indivisibilities, and relative time utility, do not wish to hold risky assets directly. All that is alleged here is that the overall operations of a bank fit better into the retailing of services than into the production or portfolio theories.

Notes

1. M.P. McNair, 'Expenses and Profits in the Chain Grocery Business', *Bulletin 84*, Harvard Business School, Division of Research (1971).

2. Ronald R. Gist, *Basic Retailing* (John Wiley, New York, 1971).

3. Henry Smith, *Retail Distribution: A Critical Analysis*, 2nd edn (Oxford University Press, London, 1951).

4. Ibid.

5. J. Hood and B.S. Yamey, 'Imperfect Competition in Retail Trades', *Economica*, n.s., vol. 18, no. 70 (May 1951).

6. Victor Fuchs, *The Service Economy* (National Bureau of Economic Research, No. 87, General Series, New York, 1968).

7. G. Lynn Shostack, 'Banks Sell Services – Not Things', *The Bankers Magazine* (Winter 1977).

8. Fuchs, *The Service Economy*.

4 UNCONTROLLED BANKING: THE FISCHER BLACK MODEL

'It seems likely that without all of these restrictions, a great deal of the banking business would be done by a few large banks that are rational in scope.' (Fischer Black, 'Bank Funds Management in an Efficient Market', *Journal of Financial Economics*, vol.2, no.4 (1975), p.325.)

In this chapter the basis for our model of the bank as a firm, Fischer Black's world of uncontrolled banking, is outlined and in the following chapter we proceed to a modification of this model which we regard as reasonably descriptive of modern banking.

Fischer Black postulates a world without money in which payments are handled by cheque or credit card and in which banks are the major financial institutions. The banks operate one major clearing corporation to capture the economies of scale in cheque clearing. A banking firm in this environment will accept deposits under conditions it alone decides, including paying any rate of interest it wishes to specify. Transfers of credit by cheque will be permitted between two interest-bearing accounts. While it is likely that current account deposits will be paid interest, depositors will also most probably be charged the full cost of transferring credit from one account to another.

On the other side of the balance sheet, a banking firm will lend to individuals, businesses and governments and will probably establish a schedule of interest charges for each borrower, permitting each to write cheques on his account to increase the loan according to need. The interest rate charged, it is suggested, will depend on the borrower's current borrowing outstanding, his wealth, his current and expected future income, and on the extent of the collateral he is able to provide. Repayments of loans will be flexible; provided that the bank is continuously satisfied about the borrower's ability to repay, no consistent payment of principal or interest being required. Besides being participants in an active market for inter-bank funds the banking firms will compete in the setting of interest rates and service charges, but they will pay a common rate of interest on deposits to all depositors.

The banking firm will generate its profits from the administration of loans and the handling of transactions and, because of this, it will want to entice to itself customers with both positive and negative balances.

In this environment depositors will be protected because every bank will find it necessary to hold capital equal to a certain fraction of its loans, because the major banks will be so large that their loan portfolios will be protected by diversification, and because the government may also provide deposit insurance to protect against general unforeseeable losses that may affect a large proportion of loans in all banks' portfolios.

Currency is introduced into this world of uncontrolled banking by allowing the federal government to print it and issue it to the banks on request. As long as a positive interest rate is paid on deposits, individuals and businesses will find it in their interests to minimise their holdings of currency. Bank holdings of currency will be determined by the daily deposit and withdrawal patterns of individuals and businesses and by the cost of making transactions with the government.

There will be no government bonds as the government borrows from the bank as do individuals and businesses. It is also unlikely that businesses will need to issue debt since this may be readily acquired at less cost from banks. Of course, in the case of banks lending to governments rather than to businesses or individuals, it is likely that the interest rate charged will be independent of the size of the loan because of the minimal risk of default.

There are a number of inconsistencies in Fischer Black's interpretation of a world without money. He begins by assuming that the major financial institutions will be banks but then offers them such a universal role in the economy that there is no scope for other financial institutions or even capital markets to operate. Further, he assumes that there will be major banks 'so large that their loan portfolios will be protected by diversification'[1] and also other banks, but does not explain how this size differential began, was created, or had persisted. The behavioural assumptions of individuals are not made explicit and while banks will allow individuals to increase their loans whenever they need the money, it is said to be unlikely that individuals will approach the maximum amount the banks will lend to an individual.

The interest paid by borrowers is to be based on the amounts borrowed, the borrowers' wealth, current income, future income prospects and collateral. This would appear to require that the banks were perfectly informed about the present and expected future position of all of their customers which could presumably be accomplished only at prohibitive cost or alternatively, if the banks must decide on the limits and the interest rates by applying more general rules to individual circumstances, there seems to be scope for other financial institutions to make up any resulting shortfall in finance for individuals and businesses.

Fischer Black notes that in his world without money, the economies of scale in cheque clearing will justify the establishment of only one major clearing corporation, but no other reference is made to any other difference in costs between sizes of banks, an omission which implies that the costs of branch establishment, and of accepting and servicing accounts are constant for all banks. An even more critical omission in the scenario is the specification of any real limiting device to the extension of credit. While it is noted that the government's expansion of borrowing is limited by the necessity of the approval of Congress for each increase, no readily identifiable limits appear to exist to individual or business borrowing in the aggregate, other than that they will wish to have income and borrowing power available for future consumption. The difficulty which this omission raises for Fischer Black's model is that no justification is found in that model for individuals and businesses to pay back their loans from banks.

The limitations of Fischer Black's world without money appear primarily because we wish to use it as a base for a microeconomic theory and not, as he intended it, as a basis for demonstrating in a macroeconomic context the proposition that unregulated banking does not lead to an uncontrolled increase in prices.

Note

1. Fischer Black, 'Banking and Interest Rates in a World without Money', *Journal of Bank Research* (Summer 1970).

5 A MODIFIED UNREGULATED WORLD

'Financial intermediation depends on adequate information. The information obtained in the process of one transaction can be used in another. Given economies of information of this kind, why are not all forms of financial intermediation provided by one single institution?' (C. A. E. Goodhart, *Money, Information and Uncertainty* (Macmillan, London, 1975), p.137.)

Our world of uncontrolled banking, which is essentially a modification of Fischer Black's model, requires a number of assumptions. Money is assumed to exist in the form of currency, but, because of the additional assumption that banks pay interest on their deposits, both individuals and businesses will find it in their interests to minimise the amount of currency held. Banks are the only financial institutions and will remain so for as long as they are able to satisfy the financial demands of the community. We assume that banks may specify the conditions on which they will accept deposits and make loans and that they will hold some portion of their deposits in the form of reserves to minimise uncertainty. In this world uncertainty prevails and the acquisition of the information necessary to reduce or to minimise uncertainty can only be made at a cost. The aim of banks operating in this world is long-run profit maximisation from their business which is assumed to be the retailing of monetary services.

Following Fischer Black we propose that, because of economies of scale in cheque clearing, it is probable that only one major clearing corporation will exist for all the banks. There are, however, other areas which suggest the existence of economies of scale. While the same costs are consistently involved in the opening and servicing of deposit accounts, it is likely that with a large number of depositors a bank may benefit from the imperfect correlation in its customers' flows of payments and the consequent reduction in the variance of funds. The role of banks as financial intermediaries allows them advantages in the acquisition of information about certain classes of borrowers and lenders that enables them to assess risk more realistically for transactions with these classes of customers.

Increasingly as the extent of a bank's business grows, more information about customers is acquired at less cost per unit of deposit.

Baltensperger[1] suggests that, while the costs of acquiring information are reduced when they are spread over a large number of depositors and borrowers, the other method of reducing these costs is the requirement of collateral. If banks are to remain the only financial intermediaries in the uncontrolled world it is necessary that they make loans to those who require them even where they do not have collateral, although clearly a higher scale of interest rates would then be appropriate. Banks may well find it in their best interests to acquire information about this riskier end of the market even if it is expensive to do so and perhaps to compensate at least partially for this expense by requiring as much collateral as possible from those borrowers able to provide it.

The implication of the existence of these economies of scale for the individual bank is that it must attempt to obtain at least a certain minimum scale of operations. One further consideration makes the attainment of a certain size a vital prerequisite for long-run profit maximisation. Let us assume, quite consistently with our previous assumptions, that there is free entry into the banking industry. Fischer Black suggests that there will be several competing major banks and other smaller banks.[2] In our view it is logical for an oligopoly to develop for the following reasons. Unless the minimum size at which economies of scale obtain is reached, the banking firm will be operating at a higher cost level than its competitors. At this early stage it will also need to hold a sufficient part of its deposits in the form of liquid reserves to cope with its inexperience in estimating risk; however, at levels of operation which are too low for economies of scale to be achieved, the more reserves the bank holds, then the less able it is to expand its business by increasing loans. It is here that the bank runs a high risk of being taken over by a larger bank which will be able to economise on its victim's holding of reserves. Because of the attractiveness of small banks as an acquisition by larger banks there will be a very high mortality rate of banks operating at low levels of activity.

The risk of loss of control of its own operations will be sufficiently strong in these circumstances for new entrants to eschew any level of operations below the level at which economies of scale obtain, with the result that the industry is likely to have a preponderance of at least medium-sized banks. Although at very high levels of activity a further constraint (described below) operates, it is unlikely that the medium-sized banks will combine to form one monopoly bank because the size of its operations would invite government control as it would then resemble an uncontrolled central bank.

An advantage gained by medium-sized banks in the industry as a