# Competition, innovation and regulation in British banking

*This paper was presented by J S Fforde, an adviser to the Governor, to a conference of central bankers from eleven countries arranged by the Bank in May.[1] It begins by briefly outlining the development of competition and innovation in the British banking system from the 1950s up to 1980. It goes on to identify the deregulatory process which ensued and to discuss its effect on, first, the conduct and technique of monetary policy and, second, the supervisory framework. After a brief description of the development of the building societies over the same period it then seeks to develop, in regard both to very recent and to foreseen future innovation, the general approach adopted in the first part of the paper.*

## Introduction

Our story begins as long ago as 1955 and ends by looking forward to 1995. We aim to see these forty years in perspective, as a distinct epoch of competition, innovation and regulatory change. For the individual, or the company, our banking system in 1955 was not very different from what it had been fifty years before, in respect of the range of facilities offered and the way in which they were provided. By 1983 it had become a lot different. By 1995, thanks in the main to prospective technological innovation, it should be even more different.

As we see it, the dynamic of change in the United Kingdom has been supplied by a combination of financial innovation and competition to which the framework of monetary policy and banking supervision, statutory or customary, has always in due course had to adapt. The timing of these consequential regulatory changes has been affected by a variety of factors. The evolving economic conjuncture, itself on occasion affected by financial innovation, is one. The climate of intellectual opinion and the political inclination of the government of the day are others. The rate and direction of change has then in its turn been greatly affected by the timing of regulatory changes, but the underlying dynamic of financial innovation has in the end proved dominant.

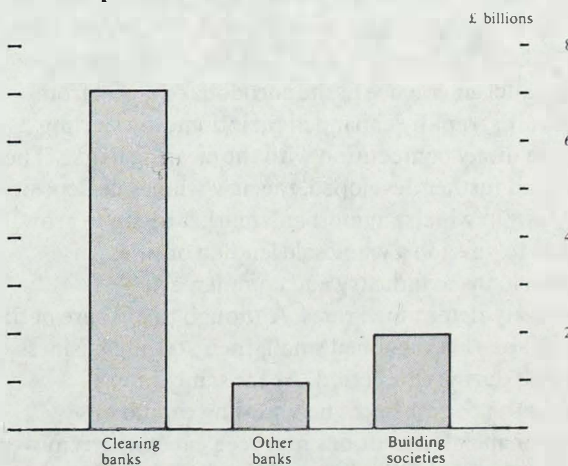
We have not always seen it like this, nor have we always fully appreciated the continuity of what was happening. But experience has encouraged us to look at the institutional, supervisory and monetary policy implications of prospective innovation, with its strong technological content, in a more systematic and interrelated way. Unusually, it has also encouraged us to initiate a central bank conference on the subject.

The paper which follows is confined to consideration of developments in the domestic monetary system. The international business of United Kingdom banking, though of great importance over most of the period reviewed, has had to be excluded in order to keep the paper within manageable length.

## Competitive innovation and deregulation 1955–80

Thirty years ago the British banking system was dominated by a cartelised oligopoly consisting of the London clearing banks and their associates in Scotland and Northern Ireland. Together they held over 85 per cent of all commercial banking business in sterling, domestic and foreign. Moreover their sterling deposit base was over three times as large as that of the building societies, the other main group of deposit-taking institutions. The clearing banks' lending and borrowing rates were fixed by collective agreement and in conventional relationship to Bank rate. Lending was virtually all by overdraft and deposits were either on interest-free current account or on interest-bearing deposit account at seven days' notice. In their annual published accounts the banks were permitted,

**Chart 1**
**Total deposit liabilities at end-1955**




by special dispensation under the Companies Act, to conceal their true profits and reserves. But banking was certainly profitable and this encouraged the banks, in their cartelised market, to practice such non-price competition as they could find and to vie with each other on size of balance sheet. The effect of wartime finance upon their asset

(1) It was also discussed at a meeting of the Bank's Panel of Academic Consultants on 29 April.

structure was still pronounced, making them notably underlent. Of long-term significance, the potential size of their market was increased in 1960 by the Payment of Wages Act which legalised the payment of wages to manual workers by cheque as well as in cash.

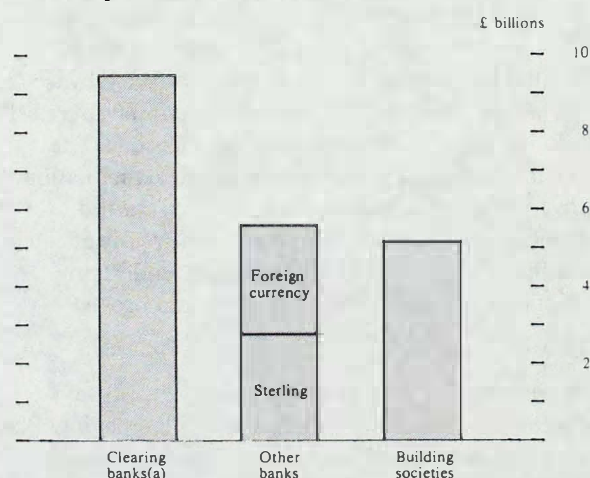
While entry into this oligopoly was in practical terms hardly possible, entering into competition with it was relatively simple. No licence or other supervisory requirement governed the taking of deposits from the public by institutions outside the established banking system. No 'regulation Q' governed the rates at which deposits could be taken. No rules prevented foreign banks, or domestic non-clearing banks, uncartelised, from developing a wider range of sterling business. Official credit controls did indeed affect the speed with which such business could be developed; but their use was impermanent and at the margin they came to be ineffectual.

The system was therefore open to profitable competition and innovation outside the oligopolist sector. Here, perhaps unwittingly, the authorities themselves proved to be the catalyst. First the instalment credit finance houses, mainly engaged in the rapidly growing market for consumer credit, began in the mid-1950s to bid competitively for wholesale deposits because official controls were deployed against their obtaining adequate additional finance either from the banks or from the capital market. Next the local (ie municipal) authorities, in the cause of more efficient financing of the public sector, were encouraged to borrow direct from market sources instead of from the central government. They found short-term deposit-type funds, competitively bid, readily available. Finally, direct credit controls and guidelines were suspended during the recession of 1958 and coincident with the Report of the Radcliffe Committee on the monetary system;[1] and they remained in complete suspense for three years. During that period the merchant banks, together with the foreign banks then established in London, no doubt further encouraged by the parallel emergence of the eurodollar market from 1957 onwards, rapidly expanded their domestic sterling business in direct competition with the clearing banks. They entered, and further developed, the new wholesale deposit market, within which an interbank market began to grow, and began to develop a wholesale lending business in short-term loans to industry and commerce at competitively-determined rates. Although their share of the total credit market remained small, their sterling business quadrupled during this period. At the same time, all restrictions on the raising of new sterling capital by domestic financial institutions had been effectively removed when capital issues control[2] was liberalised in 1958.

The clearing banks could meet a rising demand for credit mainly by adjusting their underlent positions rather than by resorting to competitive bidding for deposits. Nevertheless, they began to meet competition from the merchant and foreign banks by setting up deposit-taking subsidiaries outside their own cartel and outside the existing liquidity requirements. Competition from the hire purchase finance houses was met partly by acquiring large shareholdings in them, and partly by the banks themselves offering personal instalment credit facilities. Lending facilities to the corporate sector, however, remained largely unaltered at this stage.

For their part the monetary authorities responded defensively to this early phase of competitive innovation, by extending the scope of direct credit controls to cover deposit-taking finance houses and the non-clearing banks. Such controls were reimposed first in 1961 and again, but with fuller quantitative rigour, in 1965. The authorities were also concerned at the absence of any specific supervisory regime, formal or informal, for the deposit-taking finance houses, or 'secondary banks' as they were later to be called. An early attempt to meet this concern by seeking additional statutory powers [3] of a thorough-going kind was abandoned in 1958 because of their apparently daunting legislative complexity and perhaps also because the need for such powers was not sufficiently manifest. Later, in 1963, the need was sufficiently clear for the Protection of Depositors Act to be passed. While this regulated the form of advertising for deposits by secondary banks, and the supply of information by the advertisers, it contained little provision for effective supervision.

**Chart 2**
**Total deposit liabilities at end-1965**




(a) In October 1971, when figures first became available, foreign currency deposits accounted for only 2½% of total clearing bank deposits.

Over the six years 1965–71, the pace of innovation in domestic bank lending was arrested by the elaborate regime of officially imposed lending ceilings. But it did not preclude the introduction of the first British credit card, nor the introduction at this time of the plastic cheque card guaranteeing personal cheques up to (then) £30. Meanwhile foreign currency business in the euromarkets grew very

(1) *Committee on the Working of the Monetary System—Report*, HM Stationery Office, Cmnd 827, 1959.
(2) Exercised under the Control of Borrowing and Guarantees Act 1946.
(3) Existing powers were contained in the Bank of England Act (supported by customary authority) and in the Building Societies Act. The former did not in practice apply to secondary banks. Nor, of course, did the latter.

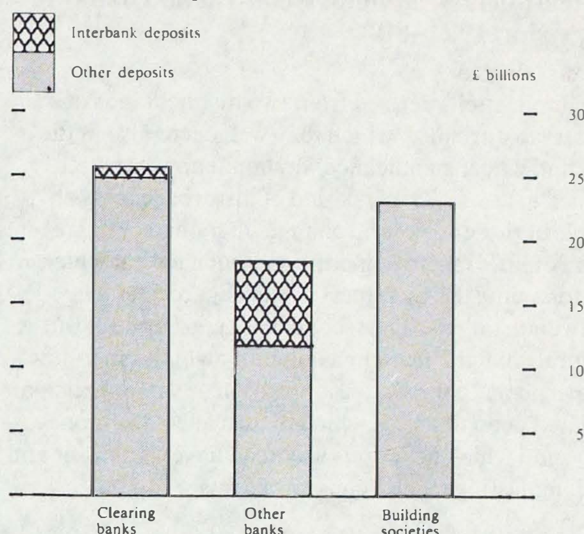
rapidly indeed. Advances to overseas residents by domestic and foreign banks in London, almost all in foreign currencies, rose from the equivalent of some £2½ billion early in 1966 to some £14 billion by the end of 1970, equal to over half the total advances of the UK banking sector. This was a competitive and innovative wholesale market whose experience could be energetically applied to domestic business if restrictions were removed.

Over the same period, moreover, the further development of the wholesale deposit market in sterling, though much slower than that of the eurocurrency market and affected indirectly by the lending ceilings, did in practice proceed quite rapidly, with the clearing banks continuing their active participation through subsidiaries. In particular, the interbank segment of the wholesale market became much more firmly established. In addition, the Exchange Control Act was amended in 1968 so as to enable banks to issue negotiable certificates of deposit in sterling. So by 1971 the institutional infrastructure needed for a very rapid growth in wholesale money was firmly in place.

By the end of the 1960s the climate of legal,[1] intellectual, political and banking opinion in the United Kingdom became much more favourable to the encouragement of free competition in banking and much more hostile both to cartels and to such counter-competitive techniques of monetary policy as restrictive lending ceilings applied to banks and deposit-taking finance houses individually. To some degree this climate was itself a response to the somewhat intermittent but powerful processes of innovation that have been outlined above. A continuing defensive official response, successful earlier in the decade, now began to carry decreasing conviction and was further weakened by fringe avoidance of official credit controls. A phase of drastic deregulation followed. The clearing banks, in response to official prompting, changed the form of their published accounts and largely abandoned the concealment of their true profits and reserves. At the same time, again with official approval, and as if preparing for a more competitive era, the number of clearing banks was substantially reduced by mergers. Finally, at an opportune macroeconomic and political conjuncture, direct credit controls were abolished in the summer of 1971. The clearing banks' interest rate cartel was concurrently, and at official request, dismantled. But the absence of effective supervision over secondary banks remained, in some part because it was wrongly supposed that these institutions would shortly be absorbed within the deregulated primary banks.

During the ensuing competitive decade, and though partly interrupted by some reimposition of direct controls at intervals during 1974–80, the banking system developed the innovations first introduced during the 1950s and 1960s. For personal customers, credit cards, cheque cards and cash dispenser or automatic teller machine cards became more readily available, so that by 1982 around 20 million adults, or nearly 80 per cent of bank current account holders, held at least one such card. Automated credit transfer and direct debit facilities became available, while personal customers also gained easier access to a more complete array of instalment loan facilities. But individuals were offered little new by way of interest-bearing savings accounts at the principal banks,[2] despite a persistent tendency towards historically high nominal interest rates,

**Chart 3**
**Total sterling deposit liabilities at end-1975[a]**




(a) In addition, foreign currency liabilities amounted to £4.4 billion for clearing banks and £80.7 billion for other banks.

which gave depositors a stronger incentive to look around for the best deal. Moreover, since 1969 the banks had been closed on Saturdays. Not surprisingly, and more so in the absence at this time of strong competition for personal savings from the public sector, an increasing share of personal savings went to the building societies, who paid better rates, remained open on Saturdays, offered easy withdrawal facilities from interest-bearing accounts, and were engaged in meeting a strong upward trend in the demand for mortgage credit. A British version of the American 'money market mutual fund' was also developed, but at this stage on a very minor scale.

Corporate customers, particularly the larger ones, found they had access on a growing scale to the wholesale market, whether as lenders or borrowers of short-term money. The cost of banking intermediation for such customers was thereby reduced. This development was implicit in the innovations of the preceding fifteen years. But the widespread introduction of medium-term lending by the banks, at variable rates linked to interbank rates, was not so implied and became the main innovation of the 1970s. It evolved mainly after 1974 as an innovatory response to the onset of high and volatile levels of inflation and the consequential unwillingness of industrial and commercial companies to borrow at fixed interest in the debenture and

(1) The Monopolies and Restrictive Practices Act 1948, as strengthened by the Restrictive Trade Practices Act 1956, had for the first time provided the United Kingdom with a strong body of statute law in this field.

(2) These remained for the most part 7-day deposit accounts bearing interest typically some 3 per cent below the rate paid for wholesale money.

loan stock market. The growth of industrial leasing by the banks, an innovation of the 1960s was likewise stimulated and at the end of the period was given a further boost by its tax efficiency at a time when banking profits were high and taxable industrial profits low or non-existent.[1]

The implications of all these developments for monetary policy and for banking supervision proved to be quite as drastic as the deregulations of 1968–71 and the innovations that in the main preceded them.

## Implications for monetary control and banking supervision 1971–80

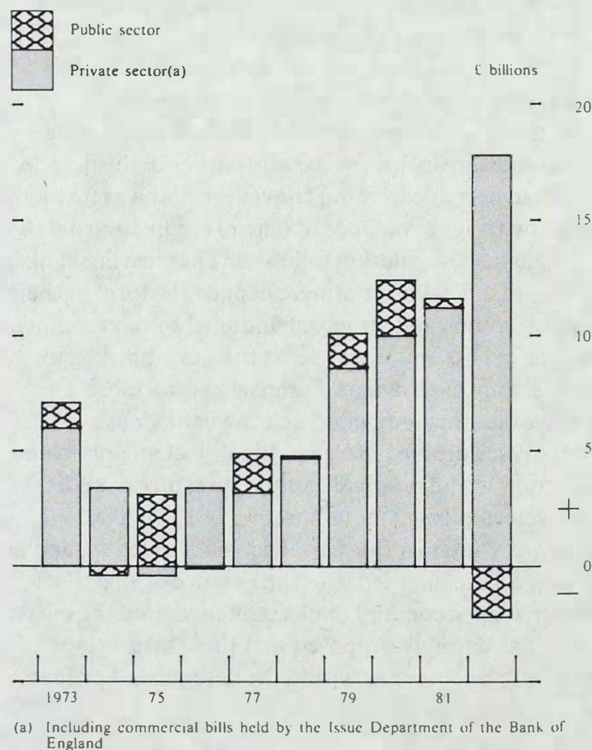
### Monetary control

These implications derived from two distinct kinds of monetary disturbance, which may well occur also in the future and whose significance we should now be better equipped to assess. The first kind of disturbance was an example of those structural changes in monetary aggregates that are of little macroeconomic consequence but which affect for a time the usefulness of such aggregates as intermediate targets. The second was an example of those structural changes in credit availability which can follow some particular competitive innovation or some particular associated deregulations, which in turn affect the money supply, and which in various ways can have significant and quite long-lasting macroeconomic effects.

$M_3$[2] grew very rapidly following the decontrol measures of 1971. While part of this can be attributed to reintermediation, implying a structural change without much economic significance, there can be little doubt that credit became much more easily available. Bank credit ceilings had been abolished, controls over consumer instalment credit had been suspended, the tax-deductibility of personal interest payments (recently reduced) had been fully restored, and a further widening of the wholesale money markets had taken place. This easing of availability particularly affected consumer instalment credit, mortgage credit and loans for the purchase or development of commercial property. Its strength had been underestimated by the authorities. Econometric studies of demand-for-money functions, increasingly examined in the United Kingdom at the end of the 1960s, had suggested that both broad and narrow aggregates were stably related to nominal incomes and to interest rates. Other studies suggested that the money supply was superior to nominal interest rates as a guide to the thrust of policy. Together they appeared to promise that sufficient monetary and credit control could be maintained by acceptable variations in interest rates, and that direct regulatory controls were accordingly unnecessary. It was against this background that the then Governor, speaking at Munich in May 1971, remarked that after the abandonment of credit controls, 'we have in mind a system under which the allocation of credit is primarily determined by its cost'.

In practice, however, the accelerating use of liability management by the banks through the wholesale money markets, supporting the surges in bank lending that followed the removal of regulations, overpowered the established relationship between the interest rate and the broad money supply. Whenever the banks could see profitable opportunities to onlend funds, they would bid for them through the wholesale markets; and the interest sensitivity of the broad monetary aggregates seemed to depend largely on the sensitivity of bank borrowers to interest rate changes. However, in the event it appeared that the demand for bank borrowing was not only difficult to predict, especially after changes in the regulatory framework, but also unresponsive, in the short run at least, to even very large changes in nominal interest rates. Yet such changes in interest rates continued to have macroeconomic effects even if their relation to the money supply was obscured. These effects, whether exerted through the exchange rate or through a direct influence of the cost of borrowing on investment expenditure, were widely considered to be important; and led to tensions between policy regarding the money supply itself and macroeconomic policy more generally.

**Chart 4**
**Sterling lending by the banking system to UK residents**




(a) Including commercial bills held by the Issue Department of the Bank of England

These tensions, had several consequences. First, they led to some retreat from a fully competitive system. The supplementary special deposits scheme (or 'corset') was imposed at the end of 1973, and was used on two subsequent

(1) Under UK tax law, a bank as lessor can reduce its liability to corporation tax by offsetting the capital cost of the equipment which is being leased against its income. This is advantageous not only to the bank but also to the company which is the lessee, since much of the benefit to the bank is passed on in the form of reduced rental payments, and the company is usually unable to claim the tax allowances on capital expenditure for itself because of inadequate profits.

(2) The UK monetary aggregate consisting of notes and coin in circulation with the public and all residents' deposits with domestic banks in both sterling and foreign currency.

occasions prior to its abandonment in June 1980.[1] Second, they made the authorities undertake greater efforts to control bank lending to the public sector, as a counterweight to the surges in bank lending to the private sector. Not only did the monetary implications of a high public sector borrowing requirement (PSBR) come to the forefront of official concern, but also the selling of public sector debt to the non-bank private sector became the main short-term instrument for controlling the growth of the broad money supply. The 'overfunding' episode of the last few years, during which sales of government debt to the non-bank private sector have exceeded the PSBR, provides a good recent example of the importance of debt management in the conduct of policy.

The structural innovations and regulatory changes at the beginning of the 1970s, therefore, brought with them disturbances in the provision of bank credit and reduced the authorities' ability to predict the course of the broad monetary aggregate or to control it directly and quickly through interest rate variations. This ability was further reduced by the additional disturbance later in the decade when the banks undertook the medium-term corporate lending business which in less inflationary times had been done through the capital market. Under these circumstances it may be asked why the United Kingdom authorities did not change to a narrow money target, since this whole set of innovations had much less effect on the determination of $M_1$, whose demand function remained stable.

Initially the adoption of $M_3$ as the main focus of attention depended in part on its better statistical properties but more on the ability to relate $M_3$ to DCE, and its components. In the event, the course of $M_3$ during the period 1971–73 was different from, and more explosive than, the course of $M_1$; and particularly when the surge of $M_3$ in 1971–73 and its relapse in 1974–75 neatly preceded the surge and relapse of inflation two years thereafter, easily outperforming $M_1$ in this respect, general opinion became fixed in the view that the broad monetary aggregate was the key one. Furthermore some additional econometric support, not based only on this experience of the 1970s, could be claimed for the argument that movements in $M_3$ had more effect on *subsequent* variations in nominal incomes, than did movements in $M_1$. In any case, experience with the breakdown of the demand-for-money function for $M_3$ in 1971–73 did not provide a confident basis for placing great faith in the future stability of the $M_1$ function. In addition, although the latter equation appeared stable it did not forecast closely enough for purposes of practical policy. Finally, towards the end of this period, structural changes which could alter the characteristics of narrow money holdings were appearing on the horizon.

This general experience reinforced the view, for which the financial community seems to have a predilection in any case, that the banking system is dynamic, innovative and fluid, and that it is therefore necessary to maintain a considerable discretionary flexibility in official interest rate policy. This view, however, ran contrary to the more powerful trend of thinking, born of the inflationary disturbances of the 1970s, to the effect that strict, publicly announced and permanent rules for the control of a key monetary aggregate were essential to the defeat of inflation. While firm monetary control was indeed advocated by the Bank, the conflict between the perceived need for discretion and judgement on the one hand, and the desire for greater control over monetary growth and for a publicly credible counter-inflationary stance on the other, has led at times to a renewal of the tensions already mentioned.

**Supervision**

At the outset, in the static market for credit dominated by a handful of major banks, there was little need for a developed system of external supervisory regulation. Self-regulation by the banks, supported by the customary authority of the Bank of England, was sufficient to maintain adequate standards of liquidity and capital adequacy and to preserve the quality of banking business. Techniques of prudential measurement at this time reflected the simple balance sheets of the banks; and the lack of variety in loan and deposit instruments rendered satisfactory a reliance on broad-brush concepts of gearing[2] and quick-asset[3] ratios.

In the short run, the arrangements for monetary control then in force themselves tended to support the situation just described. Ceiling controls on lending restricted the growth of balance sheets and the rationing of credit tended to give priority to high quality borrowers. At the same time the cartel arrangements for setting interest rates helped to maintain profit margins. Meanwhile, outside the primary banking sector, the additional impact on the finance houses of hire-purchase terms control served to maintain their cash flow and enhance the security of their lending.

But in the longer run, and following the deregulations of 1969–71, prudential standards outside the primary sector were undermined by competitive pressures and by demands for credit from borrowers, particularly in the field of commercial property, who lacked ready access to finance from the established sources. New lending institutions grew up in the secondary sector, and for a time flourished, free from restrictions on the growth of their assets and able to tap the wholesale deposit markets to fuel their expansion. Some of these institutions also came to disregard established prudential standards in the conduct of their business. In the winter of 1973–74, with the termination of the boom in commercial property, their prosperity vanished, deposits were withdrawn, and a crisis ensued.

Except in the case of the building societies, throughout this period there was no comprehensive legislation which

(1) This scheme penalised the taking of additional interest-bearing deposits above a prescribed level through imposition of incremental non-interest-bearing reserve requirements on such deposits. It tended to produce a degree of credit rationing. The ability to induce such rationing by use of ordinary reserve-ratio alterations (an ability never in fact put to the test) had disappeared with the abandonment of the cartel and the growth of the wholesale market.

(2) The ratio of total deposits to capital (subject to certain adjustments).

(3) The ratio of total deposits to short-term assets.

governed the activity of deposit-taking and no single supervisory authority. But a number of statutes, administered by a variety of agencies, placed limited restrictions on deposit-takers or on the business they could undertake. Important examples were the Exchange Control Act, which restricted the provision of a full range of foreign exchange services to those banks appointed as authorised dealers, and the Protection of Depositors Act 1963 which imposed conditions on institutions advertising for deposits, conditions from which established banks were specifically exempt. This structure of recognitions and exemptions provided depositors with some indication that in placing money with a particular institution more or less caution was required. But is was not well understood by the public and could indeed be misused so as to convey an unwarranted impression of status and standing.

The secondary banking crisis of 1973–74 demonstrated that the existing arrangements had not adequately alerted depositors to differences in risk between the various deposit-seeking companies; and that use of the wholesale market had enabled new and inexperienced deposit-takers to grow very rapidly, despite their lack of a diversified customer base on either side of their balance sheet. Moreover the established banks' own credit assessment techniques, developed in an earlier and more stable environment, did not satisfactorily measure the risk of lending to the secondary banks; a problem which was compounded by the fact that many of the new participants in the wholesale markets were based outside London. Similarly, liability management became the norm before complementary techniques of liquidity management were in place. The pace of competition and innovation had rendered central features of the prudential arrangements obsolete.

The crisis showed that a new and more comprehensive supervisory framework was needed in any event, while a parallel initiative by the European Community, embodied in the First Banking Directive 1977, also required the United Kingdom to set up formal arrangements for licensing deposit-taking companies. More generally, public opinion had become increasingly concerned with consumer protection, notably in the provision of financial services. As a result, in 1979 Parliament passed the Banking Act. The central provision of this comprehensive legislation is a general prohibition on the acceptance of deposits without specific authorisation from the Bank of England.[1] The Act contains certain broadly drawn prudential criteria relating to the integrity of management, the adequacy of capital and liquidity and the prudent conduct of the business against which the Bank, as supervisory authority, may grant deposit-taking authority. But it leaves a wide measure of discretion to the Bank in the interpretation and application to individual deposit-taking companies of the criteria for initial and continuing authorisation. So the Bank turned its attention to the central supervisory issues of the measurement and assessment of liquidity, capital adequacy and foreign currency exposure. This comprehensive overhaul of the techniques of banking supervision aimed to take account of the much greater variety of financial instruments in banks' balance sheets and the increased variability in their value.

A principal lesson of these years has been that any system of control sets a premium on avoidance and circumvention; and that prudential regulation is not immune from this rule. Just as the secondary banks grew up outside the previous supervisory system, and just as some banks have sought internationally to place their business in less well-regulated centres, so new forms of near-banking business may possibly grow up in the United Kingdom. The money-market fund is one among several examples that might be cited. In the United Kingdom, unlike the United States, the definition of deposit-taking in the Banking Act is sufficiently wide to encompass such funds and bring them within the scope of prudential control; but special arrangements for their supervision have been required. Innovation of this kind underlines the need for a parallel response from the supervisor, keeping under review both the legislative basis for supervision and the appropriate form of supervision, to ensure that new techniques of banking are both properly conducted and supervised.

## Building societies 1955–80

It has been possible to describe the development of the banking sector up to 1980 with only a passing reference to building societies, in a way which is not possible from here forward in time, or in the rest of this paper. Some initial description of the societies, and their development over the preceding decades, is therefore required.

The societies are mutual: most deposits with them are in the form of shares, which convey voting rights. This has had four practical implications. First their boards have a duty to balance the interests of investing members and borrowing members. This has affected their interest rate behaviour. Second, they do not have to provide in their profit margins for any distribution. Any surplus goes to building up reserves. Third, because of the attitude to mutual organisations when their governing statute was first enacted, the societies are restricted to a narrow range of activities. They may make advances on first mortgage, raise funds from which those advances can be made and do things ancillary to those two purposes. In practice, by the 1950s societies were lending overwhelmingly to finance owner occupation and were taking their money almost exclusively from the personal sector; and they were at that time collectively small in relation to the clearing banks. Finally, mergers can only take place by agreement between the boards of societies, endorsed by the members. The acquisition of a society's business by a company would require the society to be first wound up.

In 1955 there were still nearly 800 societies with some 750 branch offices. The top five societies, which were then

(1) Certain bodies, eg building societies, whose activities are regulated under other legislation are exempted from the scope of this prohibition.

moving towards national coverage with their branch networks, accounted for 40 per cent of the assets of the movement. The top twenty societies accounted for 65 per cent.

The societies met the interest rate risk arising from borrowing short and lending long by attaching variable rates to both deposits and loans. They became cartelised later than the banks but adopted a recommended rate system in 1939. The recommendations were generally followed by the large societies but a significant number of the smaller ones regularly offered investors, and charged their borrowers, ½ per cent or more over the recommended rate.

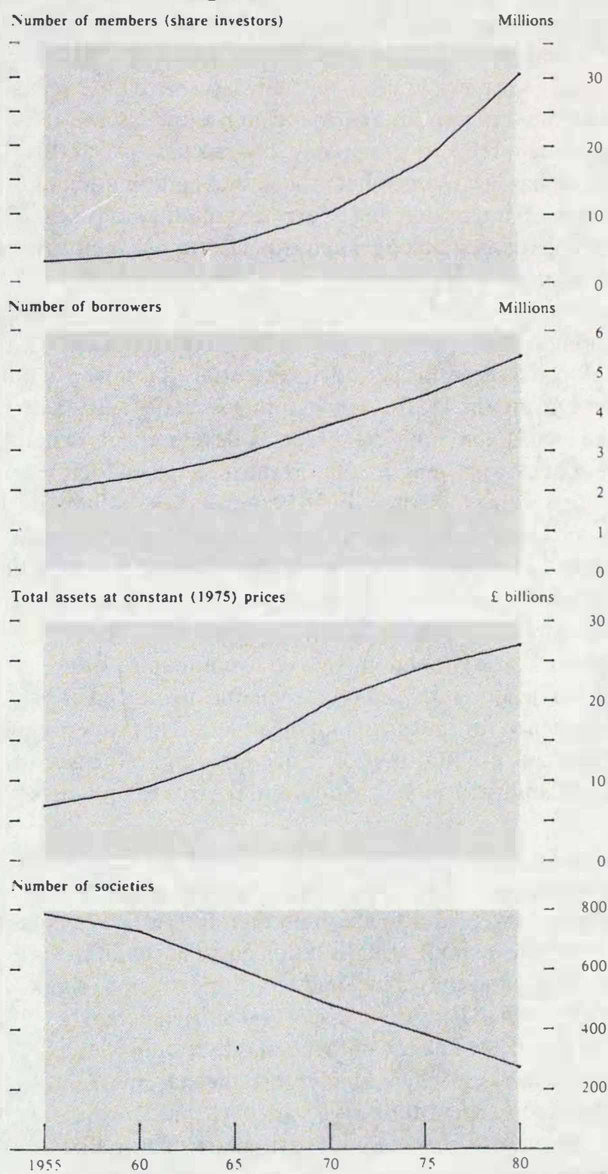
Supervision of the building societies was vested by statute in the Chief Registrar of Friendly Societies, an official who is partly responsible to the Treasury, and partly responsible direct to Parliament. The system was based on the societies being confined by statute to a relatively low-risk activity. It can best be described as supervision by exception.

Over the period 1955–80 the societies experienced extraordinary growth. Their assets grew five times in real terms. By the end of this period their liabilities to the public in sterling were 20 per cent greater than those of the London clearers. In terms of deposits from the personal sector, they were a third larger than the total for all banks, and eight times as large as the trustee savings banks. The societies had responded to conditions which were working strongly in their favour. Rent controls were eroding the market in private sector rented accommodation, so the choice effectively for most households was between rented municipal accommodation and owner-occupation. Subsidies supported the former, while the tax system favoured the latter. The tax on the imputed income from an owner-occupied house became ineffective and was abolished in the early 1960s. Yet interest on loans to finance owner-occupation could be set against income for tax purposes, the one form of personal borrowing of which this was true consistently throughout the period, albeit in the later years subject to a ceiling.

The owner-occupied house was also exempt from capital gains tax. Together these factors ensured a strong demand for funds to finance owner-occupation, a demand which became concentrated upon the societies because other providers of housing finance left the market: the insurance companies because they found it administratively inconvenient and relatively low yielding and the local authorities because of controls on public expenditure. In addition, the banks had not yet become active competitors in the mortgage market.

In meeting the demand for mortgage credit, the societies did not face very effective competition in attracting funds. The variable rate mortgage meant that they could afford to raise their interest rates as required when market rates rose. The trustee savings banks, hampered by a portfolio of fixed-interest securities, could not match this. The

**Chart 5**
**Growth of building societies**




government, partly because of a desire to shield the mortgage rate, did not compete aggressively through national savings securities. As a result the building societies were able to expand their market share and came to occupy a role which was performed in some other countries by the savings banks.

During this period, the recommended rate system led to the pursuit of growth as a prime objective and to non-price competition. Branch networks grew together with supporting expenditure on advertising. The total number of offices grew from just over 1,500 in 1955 to 2,500 in 1970, and to no less than 6,000 by 1980 (although this was still only about half as many as the clearing banks). At the same time the total number of societies declined steadily to 480 in 1970 and 270 in 1980. The concentration into the larger societies also increased up to 1970, the share of the top five increasing from 40% to 55%, that of the top twenty to over 85%. But those shares thereafter changed remarkably little through the 1970s.

The building societies can operate on a considerably finer margin between borrowing and lending rates than other institutions providing retail financial services, because of their combination of low management expenses due to a relatively simple operation, mutual status with no requirement to pay out a dividend, and a low reserve requirement reflecting relatively low-risk assets. But this position has been somewhat eroded by a combination of non-price competition and of greater volatility of funds which has caused management expenses to rise relatively to total assets.

Although supervision of building societies was further developed during this period, its essential character did not alter. During the 1950s a few building societies started to make loans for commercial property development, in many cases not at arms' length as far as the interests of their directors were concerned. In 1959 one of these collapsed. The consequent strengthening of the Building Societies Act, in 1960, followed precedent by further limiting the activities of building societies rather than by increasing discretionary supervision. Limits were accordingly placed on the amounts which could be advanced to companies, or in large single amounts, and requirements introduced or strengthened for the independent valuation of properties, the disclosure of information in accounts and returns, and the availability of such accounts and returns to members.

Throughout the 1960s and 1970s building societies proved remarkably safe. The social security system ensured that mortgagors were able to maintain their interest payments if they became unemployed. Inflation ensured that if the worst befell and the society had to take possession of a property, it had little difficulty in realising sufficient to recover its debt. The recommended rate system was operated in a way which set comfortable margins, so it required some ineptitude for a society to make a revenue loss. The main risk was fraud, particularly if a smaller society came to be dominated by one individual. Following one notorious case the Registry and the accountancy profession, together with the building societies' professional bodies, acted to raise the standards of control and inspection. This included visits by Registry officials to inspect systems of control in individual small societies.

During the last three years the character of supervision has begun to change. The Authorisation Regulations giving effect to the European Community First Banking Directive take full effect for building societies in 1983. These regulations require positive authorisation of societies by the Registry, and introduce criteria related to management. Meantime, the dramatic change in the competitive position, discussed in the next section, has significantly increased the risk of making a loss on revenue account. The monitoring system has already been changed to reflect this.

More generally, the Registry is now being staffed in order to overhaul the techniques of supervision, including the measurement and assessment of liquidity and capital adequacy, in a way analagous to that undertaken on a wider canvas by the Bank and already discussed. This needs to be done, irrespective of what the future may hold in terms of legislation and technological change, and without waiting for it. It will bring the supervisory regime for societies closer to that for banks and licensed deposit-takers, although it will still be simpler, reflecting the more homogeneous nature of building society business.

## The present and the future: competitive innovation and deregulation, 1980 to the mid-1990s

During 1979–82 there was a second wave of deregulation in the United Kingdom and the onset of further competitive innovation, notably involving this time both the banks and the building societies. At the same time there emerged the prospect of radical technological innovations in the provision of money transmission services, a prospect which in turn suggests structural alteration in the framework of competition between banks and building societies. These two sets of developments will be discussed in turn.

In the summer of 1979, because of changes in external financial policy consequent upon the development of indigenous oil resources, and in the political climate following the general election earlier that year, official restrictions upon overseas investment were relaxed. This was followed in the autumn by the complete abolition of exchange control. This in turn made direct domestic credit controls readily avoidable by operations offshore. The supplementary special deposits scheme, already weakened by domestic avoidance, therefore became largely ineffective and was abolished in June 1980. Finally, official regulation of consumer instalment credit was again abandoned in July 1982.

During this period there has also been a phased diversification of the trustee savings banks, whose deposit liabilities to the public in sterling currently total some £6 billion or around 7½ per cent of total sterling deposits of the public with UK banks. Formerly, these institutions provided a very limited range of services to individual savers and were obliged to invest virtually all their funds in public sector debt. They now provide a wide range of personal banking services including chequing accounts, a Visa affiliated credit card, and also an increasing though still limited amount of mortgage and consumer instalment credit. A somewhat similar evolution has taken place in the National Girobank,[1] whose deposits now approach £1 billion. In addition to these competitive developments there has recently been some further growth in our hitherto rather small versions of the American money market mutual fund.

Towards the end of 1980 the clearing banks for the first time entered the residential mortgage market as lenders on a large scale in direct competition with the building societies. This was a major competitive innovation which the banks

(1) An institution originally set up in 1968 to provide a money transmission service through the Post Office.

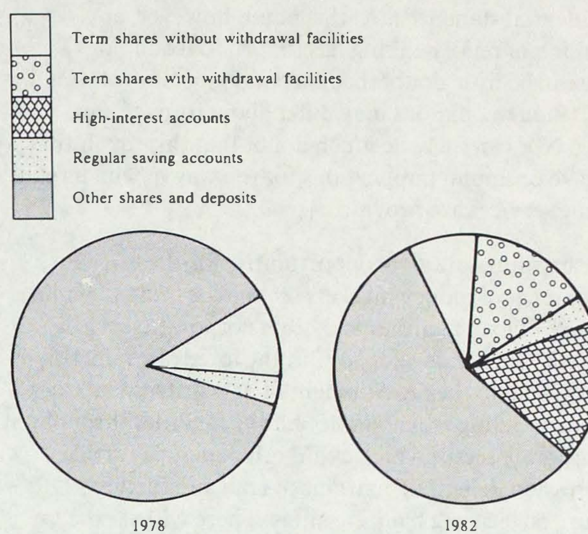
had had in mind for some years, and particularly since 1977, but which had been delayed so long as supplementary special deposits remained. During the 1970s the clearing banks had come to see themselves caught between low-cost competition on the wholesale side from American and other non-clearing banks and the erosion of their personal current account and 7-day deposit base by the building societies and savings banks on the other. This feeling was intensified during the period of relatively low nominal interest rates in 1977–78 which brought a sharp fall in the profits realised on interest-free balances, a consequential increase in charges for payment services, and some fear of a further erosion of such balances. Accordingly, the banks sought to enlarge the range of personal banking services that they provided, so as to render their retail deposit base more secure and to increase the more profitable retail side of their business. Mortgage lending was an obvious step towards providing a more complete financial service for personal customers. The opportunity was seized shortly after the deregulation of June 1980 and the banks rapidly gained a substantial share of the market, principally because of the greater speed with which they could arrange a mortgage, their willingness to lend a higher proportion of the purchase price and the absence of any higher charge for larger loans.

Building societies not only had to face this increased competition in the mortgage market, but also had to meet increased competition on the borrowing side. From the autumn of 1980 borrowing by the central government direct from the personal sector, through non-marketable savings bonds and similar investments, was sharply increased in order to reduce the weight of borrowing in the gilt-edged market.

This competition provoked a vigorous response from the societies, and released an interest in innovation which had been building up through the late 1970s, but was only beginning to come to the surface. Until then, although the societies had been very successful in terms of total growth, they had nevertheless attracted considerable criticism because of the varying mortgage queues resulting from interest rates not being set fully in line with the market, the apparent over-expansion of branches and the recommended rate system.[1] Meanwhile senior management of some of the larger societies had become affected by the more aggressive, competitive and innovatory spirit prevailing elsewhere in the financial system, and so were ready to respond when the time came.

The initial response of most societies was to resort individually to numerous if expensive ways of offering premia over the cartelised rate for ordinary shares, notably by shortening the required period and easing the notice conditions on term and notice shares. Some of the larger societies also began to enter the wholesale money market as borrowers. The first Finance Act of 1983 has included a change which will make this easier for them. On the lending

**Chart 6**
**Innovation in types of building society accounts**




side the initial advantage of the clearing banks (speed) fell away as the queue disappeared, and building societies cut or eliminated their differential charges for large mortgages. Later, in 1982, after nominal interest rates had fallen, the societies were able to maintain mortgage rates at levels which the clearing banks found difficulty in profitably matching at a time when their source of additional funds consisted predominantly of relatively expensive wholesale money together with a small amount of comparatively expensive retail money obtained by offering higher rates for longer-term deposits. The competitive situation between the banks and the building societies accordingly became one of uneasy and temporary stability. Uneasy and temporary for three reasons: first because the societies had shown that their cartel arrangements did not inhibit flexible competitive responses to an outside threat; second because the advent of new technology, discussed below, revealed the prospect of a whole new range of competitive options; and third because the societies were now able to argue that those options should be further enlarged by changes in their governing legislation[2] the Building Societies Act. Some of the legislative changes sought would remove limitations on their present primary business, both in providing finance for domestic housing and in competing for deposits with the banking system. There are also suggestions for other diversification at the margin which, if allowed, would again increase competition with banks and others. Deregulatory pressure has again followed competitive innovation.

It therefore seems as if we must look ahead to a further period of structural adjustment in the field of retail banking. Technology apart, this adjustment would in any event probably be accompanied at some stage by further deregulation, by compression of margins associated with aggressive marketing, by rationalisation of branch structures, and by further concentration within the building societies. In such circumstances we would need to be

(1) The recommended rate agreement was nevertheless granted exemption from the provisions of the Restrictive Trade Practices Act 1976, as being in the public interest.

(2) Notably in a discussion document issued by the Building Societies Association in January 1983 entitled *The Future Constitution and Powers of Building Societies.*

prepared for persistently easy availability of credit and to guard against a persistent tendency towards a lowering of prudential standards. At this point, however, any discussion of retail banking has to turn to technology. There can be little doubt that a technological revolution lies ahead, though opinions may differ about its pace and timing. Nor can there be much doubt that this revolution will have profound implications for the way in which retail banking services are provided.

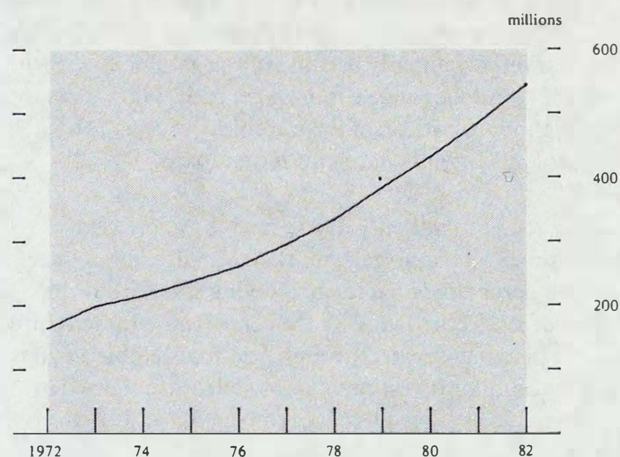
As to the wholesale area, opportunities for the further development of money markets seem to be limited, while the range of loan facilities and other corporate services seems very highly developed. But the force of competition may still lead to the development of new instruments and a further spreading of wholesale lending facilities throughout the corporate sector which could bring about a further compression in lending margins overall and further pressure on clearing bank earnings. There will also be competitive marketing advantages and possibly also cost reduction benefits to be gained from the introduction of corporate versions of electronic home banking that are already becoming available internationally. In addition there is likely to be a competitive need to offer corporate customers a wider range of cash management schemes, leading to lower cash balances and further pressure on bank profits. But these latter developments do not seem to imply large structural changes in monetary aggregates or a discontinuity in the availability of credit to the corporate sector, though they certainly suggest that active and aggressive competition to lend money to that sector will persist.

In the wholesale banking context, reference must also be made to the implications of a possible deregulation in the securities markets. This may happen if the case shortly to be heard[1] in the Restrictive Practices Court[2] were to result in the abolition of various collective agreements on which the existing structure of The Stock Exchange is thought to depend. A new structure might conform more to North American patterns, implying an extension of the securities marketing and trading activities of, especially, the merchant banks, through association with existing stockbroking and market-making houses. These new entities might form links with clearing banks. This would constitute a further step towards universal banking; and it would clearly have supervisory implications, in particular with respect to the assessment of the capital resources and managerial skills that would be necessary for a bank undertaking such business.

**Technological innovation**

The application of electronic data processing to clerical operations internal to the banks has been going ahead for some fifteen years. Important domestic developments have been the establishment and growth of Bankers Automated Clearing Services Ltd (BACS)[3] as a means of restraining the growth of paper in the money transmission system; and the installation of large (mainframe) computers for accounting purposes, and of associated reader-sorters for cheque handling, to reduce labour costs and to bring branches on-line. Cheque handling by the banks is now largely automated and the clearing of credit effects is due to be automated next year. The clearing house automated payments system (CHAPS)[4] is also due to become operational next year. Internationally, the formation of the Society for Worldwide Interbank Financial Telecommunication (SWIFT)[5] was important in speeding up the flow of information to banks and to their major customers.

**Chart 7**
**Bankers Automated Clearing Services Ltd: number of transactions processed**




Source: BACS annual report.

These applications of electronic data processing helped facilitate the establishment of the national credit card systems but otherwise left the external operation of the payments system, as it actually appeared to the customer, broadly unaltered. Cheques continued to be used in the same way for the same range of payments, as did notes and coin, while counters at bank branches still had to be used for the same purposes. The invention of the automatic teller machine (ATM) and the development of technology for electronic funds transfer, however, both point to changes in the external operation of the payments system and make possible the virtual elimination of paper flows from the transactions to which the technology is applied. Besides being attractive to the banks in terms of cost reduction, this latter capability in turn makes it technically possible for building societies and others to provide cash dispensing and money transmission services in competition with the banks but without incurring the heavy operating costs of the present paper-based system. The banks' virtual monopoly

(1) This paper was written before the announcement on 27 July 1983 by the Secretary of State for Trade and Industry that parliamentary approval would be sought for measures to exclude The Stock Exchange from the operation of the Restrictive Trade Practices Act 1976, provided certain changes proposed by The Stock Exchange were introduced.

(2) The court set up to hear cases brought under the Restrictive Trade Practices Act.

(3) A company wholly-owned by the five major clearing banks which provides an automated clearing system for direct debits, standing orders and other credit transfers.

(4) A United Kingdom clearing bank project to facilitate the electronic transfer of funds between banks.

(5) A company based in Belgium owned by banks located in many countries and providing an interbank message switching system.

of money transmission services is thus put in question at the very moment when competition for deposits between the banks and other deposit-taking institutions is, for separate reasons already explained, becoming more intense.

In the United Kingdom, as in other countries, the ATM has been the first product of the new technology to be put to widespread use. These machines, commonly known as cash dispensers because of their principal function in their initial form, are now a familiar sight on the street frontage of bank branches. Many can also now be used to obtain cash advances through activation by credit cards, while the newest models can be used to transfer balances between deposit and current account. Building societies are also beginning to install ATMs and are examining the possibility of a shared ATM network (which might also involve one or more banks). Other societies are arranging for their depositors to obtain, via credit cards, cash from different banks' ATMs. Meantime, the clearing banks have begun placing their ATMs in petrol stations, supermarkets and other locations away from their branches.

These developments seem likely to continue until any customer of any moderately large retail deposit-taker can obtain cash and certain other services from an ATM, perhaps often sited at his place of work, rather than over a branch counter. Cash is likely to remain the most efficient means of payment for a host of minor transactions and convenient access to cash at all times, not just in banking hours, will be provided by these machines. This is likely in turn to attract 'unbanked' members of the public to open accounts into which their wages can be paid.[1]

The development of electronic funds transfer in the United Kingdom whether at point of retail sale, in the home, or in the office, is being very actively considered but in practical terms has yet to go beyond the experimental stage. Perhaps significantly, the first full home banking service, including a home shopping facility, has been introduced by a local building society (the Nottingham) in partnership with the Bank of Scotland. The service is offered to customers of the former who, as an integral part of that service, obtain an interest-bearing current account at the Bank of Scotland with which is provided an overdraft facility and a credit card. Experiments with electronic funds transfer at point of sale (EFT/POS) are at present confined to petrol stations in certain parts of the country. As to office banking, the principal American banks in London offer on-line facilities to corporate customers for the conduct of international business while the clearing banks are known to be thinking about offering analogous facilities to certain of their major corporate customers once CHAPS becomes operational.

The widespread introduction of EFT/POS in the United Kingdom can take two forms but it is not yet clear which of the two is likely to predominate.[2] The first form would be a potentially national system, *ab initio,* which would use British Telecom's transmission network to carry transaction messages between retailers, card-issuing institutions and retailers' banks. There would be no central computer complex. The technical arrangements and standards would be regulated by the clearing banks, while the terminals would be owned or rented by the retailers themselves. The system would not be exclusive to the clearing banks in that the retail terminals could be activated by credit or debit cards issued to customers by any institution that became a member for that purpose. Building societies and non-clearing banks could therefore provide their customers with POS debit cards, so long as they were prepared to share in the costs of the system. A variant of the debit card could be the memory card[3] which is undergoing extensive trials in France.

The practical alternative to the above system seems to be one which would be gradually evolved by credit card companies. The technological innovation available is the authorisation telephone which obtains instant authorisation for credit card transactions at point of sale. It can be developed to permit the use of debit cards on bank or building society accounts, and perhaps to authorise or guarantee cheque payments, and then to record the transaction data and initiate the transfer of funds from the purchaser to the retailer. In this way we could in effect end up with a national system but would have got there in a more step-by-step way through development of the credit card system which is already widely accepted by the public.

New entrants to credit card business might also emerge and participate in this step-by-step process. One might, for example, see a collective building society card operated in association with one of the international card organisations. This would require a change in the Building Societies Act enabling them to undertake a limited amount of unsecured lending. This is not unlikely.

The development of EFT requires considerable capital expenditure. But the amounts involved seem unlikely to be high in relation to, say, the current annual retentions of deposit-taking institutions and moreover the costs would be shared between the banks, British Telecom and the retailers. The customer will still, of course, have to pay the system's capital and running costs in the end, by one or more of an annual charge for the POS card, a transaction charge for the entry on his account, or a higher price for the item purchased with the card. Presumptively, the total cost to the customer would be less than the proportion of the cost of the erstwhile paper-based transaction which he bears under his bank's current charging policy: indeed this is probably a necessary pre-condition if he is to be persuaded to adopt the new technology of a POS card.

(1) A further legislative change, currently the subject of public discussion, could oblige employees to accept payment of wages direct to their accounts in banks or building societies. But recent evidence shows that the shift to payment of wages by cheque or direct transfer has in any case already accelerated—see 'Recent changes in the use of cash' in the December 1982 *Bulletin*, pages 519–29.

(2) Since this paper was written, the clearing banks have announced that they propose to continue with the development of a national point of sale system of the first type: trials of the new system could start in 1986. The alternative approach is therefore not now likely to be adopted.

(3) A plastic card with an inbuilt microprocessor which stores the holder's personal customer details.

In the United States there are examples of completely non-bank entry into the money transmission business. It looks to us as if this phenomenon is only likely to occur where a body of existing regulations makes it difficult for banks themselves to provide an efficient and up-to-date nationwide service. This is not the case in the United Kingdom. So there are not at present any signs that, for example, a supermarket chain or mail order house is prepared to undertake the major investment and marketing effort required to take advantage of the new technology and offer nationwide money transmission services in competition with the banking system.

Obviously, an EFT revolution cannot happen within some very short timescale like two years. But it seems equally clear that the combination of technological availability with the other competitive pressures outlined earlier must engender a dynamic situation in which a good deal could be expected to happen within, say, a decade. Account must also be taken, in this context, of the rapidly increasing electronic sophistication of the population and the burgeoning use of small electronic terminals of one sort or another. It is very difficult to see the whole process coming to a halt. So, looking ahead ten or fifteen years, what kind of pattern might we then have?

There will probably be much more widespread payment of wages and salaries direct to the accounts of individuals at deposit-taking institutions, the majority of which would probably have become interest-bearing as a result of competition between banks, savings banks and building societies. Cash would mostly be provided through ATMs activated by plastic cards and would remain the cheapest and most convenient means of payment for a host of minor transactions. But many payments would be made by use of cards at point of sale or by use of terminals in the home. Credit cards would continue in use for those wishing to buy either on monthly credit or on extended credit up to arranged limits; but use of these cards would have been simplified by authorisation telephones. EFT terminals in company offices would be used to effect many wholesale payments. In this world, the need for branches of banks or building societies would have been reduced but not eliminated. They would still be needed, by personal and corporate customers alike, to handle what remained of the cheque system, including the provision or receipt of large cash sums, and still be needed as places where formalities of opening accounts etc were completed, loans arranged, and a variety of other non-mechanical services provided.

## The implications of technological innovation alongside increased competitive pressure

**Concentration and diversification, and monetary policy**

Large building societies, like large clearing banks, are very large institutions; and they are becoming even larger as competition within the building society movement is bringing about further rationalisation and concentration. That being so, there is a prior question concerning whether and to what extent the big societies, when looking ahead over the next decade or more, will decide to join forces with the banks rather than wage a prolonged competitive struggle with them. The same thought may be occurring to the banks. Joining forces need not mean merging so much as collaboration in the provision of common services to the mutual advantage of both sides. For example, one of the largest building societies, the Abbey National, has recently entered into an agreement with one of the smaller clearing banks, the Co-operative Bank, whereby the cheque book and credit card facilities of the latter are in effect made applicable to savings accounts held at the former.

A judgement about concentration in this emerging industry of financial supermarkets is difficult to make. But the question should be put: what is likely to happen in the end if one group of oligopolist institutions has a direct competitive clash with another group of oligopolist institutions in the provision of a basically homogeneous set of financial services? Should it be supposed that in the mid-1990s we will have some 15 to 20 independent, nationwide, competing chains of financial supermarkets? Or would it be wiser to suppose that we might in effect have some 6 or 7 nationwide chains consisting of nationwide clearers and building societies together with partnerships between clearing banks and building societies or perhaps also between foreign banks and building societies? Such a process of concentration would not of itself imply that competition during the period of technological innovation would be relatively mild. Nor would it imply that there would be no room left among the supermarkets for the survival of small specialised institutions. But it would mean that competition might not after a while be clear-cut between 'banks' on one side and 'building societies' on the other. The practical distinction between the two would in any case become blurred if amendments to the Building Societies Act were to permit some diversification of the latter.

Technological innovation seems likely to increase the competitive aggressiveness that is already apparent among the institutions concerned and in particular among the larger ones whose independent survival and prosperity will be very dependent upon maintenance of market share in a period of rapid change. In addition, it looks as if the technological change will generate a surplus of material and managerial resources seeking new employment through further diversification. Pressure on profit margins may at times exert some temporary dampening influence, perhaps useful for monetary control. It has, for instance, been a factor in the recent and probably temporary easing of clearing bank competition in the mortgage market. But over a longer period the effect of continuing competition and a surplus of managerial resources on the supply of credit offered to the British public and on the diversity of its forms, at any given level of interest rates, seems likely to be expansionary and to rely if necessary on a larger and larger pool of competitively-bid retail and wholesale money. Finally, and as the building societies are now advocating, the services provided by deposit-taking institutions may be augmented by the provision of legal, insurance, travel and other agency functions.

This expansionary bias, continuing for perhaps a further decade, with its implication that interest rates may need to be higher-than-otherwise to obtain a desired degree of monetary control, may provoke renewed demands for selective direct controls to be re-applied. But it is becoming increasingly unrealistic to envisage *any* effective direct credit controls on the domestic monetary system which are not supported by a full panoply of exchange controls, especially as technological developments render national boundaries less and less of a barrier. Moreover, competition and technological innovation are also likely to encourage greater switching between alternative sources of credit. So official favouring of any particular kind of credit (eg mortgage lending), whether by fiscal incentives or direct controls, may only result in such credit being used for other purposes.

Technological innovation is also likely to accelerate the tendency for the retail deposit market, including current accounts, to provide the combination of market-related interest rates and payment facilities that are already available in the wholesale deposit market. This is likely to have much the same consequences on the demand function for retail money as occurred earlier with wholesale money: namely, less responsiveness to changes in the general level of interest rates, since the market-related rates offered on such deposits will move in step; more responsiveness to shifts in relative interest rates and in other terms on competitive forms of retail liquid assets; and increasing instability in demand-for-money functions for such retail balances, at least for a transitional period as these innovations take place. The effect of such a process on monetary policy in general, and monetary targeting in particular, is likely to be more traumatic for countries which have previously concentrated on targeting narrow money aggregates ($M_1$), since these consist mainly of retail deposits, than for the United Kingdom. Since the main UK target of sterling $M_3$ incorporates a large proportion of wholesale deposits, we have in effect been facing the above problems for some time already; and the main implications that we foresee for ourselves remain those related to the expansionary bias which has already been mentioned.

**Supervisory implications**

The response of the various supervisory authorities[1] towards the emergence of the financial supermarket in the United Kingdom will need to depend on the way in which the various institutions do in fact develop and the pace with which they do so. It would not be helpful for supervisory authorities to set regulatory requirements in advance, based on their own preconceptions. But this does not preclude a consideration of the types of problems that may arise even if this currently amounts to little more than an agenda for further discussion.

A first question is how much additional capital and liquidity a building society, or trustee savings bank, would need if it were to diversify significantly into higher risk assets or into additional liabilities incurred in the wholesale money market. Associated with this are questions about criteria for the capital adequacy of mutual institutions like building societies, whose shareholders are not remunerated by dividends in the same way as shareholders in companies and who do not raise new capital from the market, compared to analogous criteria for incorporated competitors such as banks. Judgements on these matters, which would be significantly influenced by the skills and expertise available in the diversifying institutions to apply to their new activities, could in turn attract advocacy that the ratios currently accepted as appropriate for banks should undergo modification.

A second question concerns the substantial investment of capital in new fixed assets that would be needed to introduce the new technology at a time when the value of existing fixed assets represented by branch offices could well be diminishing. Considerations of this nature might affect individual institutional choices between collaboration or merger on the one hand or going-it-alone on the other. These choices could in turn be affected by the attitudes of supervisors to capital adequacy which, if unduly cautious, could protect depositors but deter competition. On the other hand supervisors may be legitimately concerned about the pace of competition, which would justify a cautious attitude.

A third question concerns the greater sensitivity of depositors to both interest and service differentials during the period of technological innovation. This would render the measurement and assessment of liquidity more difficult.

Fourth, there could be a set of questions concerning the degree of interlocking ownership between different types of financial institution. At present there are understandings between for example, the Department of Trade and the Bank of England concerning interlocking ownership between insurance companies and banks. If, however, the pace of diversification should quicken, new guidelines might have to be developed, setting new limits to permissible degrees of cross-ownership, or else the risks associated with connected lending and cross-infection might not be properly anticipated. Banking and insurance supervisors might also need to agree on such matters as the permissibility of an institution offering banking or insurance services as loss-leaders in some new financial package being put on sale.

These examples all suggest that supervisors in the different sectors of the financial system may themselves have to initiate a greater degree of positive collaboration between each other, involving the development both of a suitable forum and of improved communications. This might be relatively easy with respect to banks and building societies, but if the list of participants were in time to include insurance companies or multiple retailers, the problems could be more difficult. These problems would be made no

(1) The Department of Trade (the Companies Act, the Insurance Act, and the Prevention of Fraud (Investments) Act); the Office of Fair Trading (the Consumer Credit Act); the Chief Registrar of Friendly Societies (the Building Societies Act); and the Bank of England (the Banking Act). There are also a number of self-regulatory supervisory authorities, eg The Stock Exchange.

easier if technological developments were to facilitate greater provision of banking services from offshore centres.

Finally, the pressure of innovation could strain the legislative structure of supervision even where, as in the United Kingdom, this is of a very flexible nature. Pressures on the Banking Act might arise from two separate sources. First, if the future development of banking is principally of a retail nature there could emerge new and large banking institutions with very limited wholesale and international business. The distinction in the Banking Act between licensed institutions and recognised banks is principally drawn in terms of the provision of international and wholesale type services, and such institutions could be hard pressed to qualify for recognition as banks. This could make the Act seem in this respect somewhat out of date. Second, wider use of the new technology could lead to new institutions that provided a wide range of financial services but avoided the terms of the Banking Act as currently drawn, and thus the supervision of the Bank, because they did not take deposits from the public. The emergence of such a new form of secondary institution could imply that the definition of banking within the Act required revision.

## Concluding comment

Our paper has endeavoured to trace the complex interaction between competition, innovation, and regulation during an epoch of change; and at several stages we have discussed the implications of particular changes for central banking functions whether as lessons from the past or portents for the future. Rather than further summarise these implications, it may be appropriate at the end to comment on the merits of attempting the integrated approach that we have sought to employ.

Not long ago there was introduced into the British educational system a subject called 'integrated studies' which sought to combine in one course such separate disciplines as history, geography, economics, and sociology. Advocates of this course maintained that only by combining the several disciplines can they be properly understood and their educational value fully exploited. Opponents maintained that the result would be a vague and woolly hotch-potch which would muddle the pupil, lead to careless thinking, and obstruct the proper understanding of separate subjects whose interrelationship could be adequately taught without any need for integration. It is likely that both were partly right.

Because it has attempted an integrated study of financial innovation, institutional change, monetary economics, banking supervision and banking technology, our paper possesses both the virtues and vices of such an approach which may not anyway be one that comes naturally to central banks and similar institutions organised in a functional departmental manner. To be sure, central banks habitually provide for co-ordination and for interdepartmental input to consideration of particular issues as they arise. But that may not be enough, unless accompanied by a degree of integration in thinking and an understanding of interdisciplinary relationships. Looking back, our feeling is that in our own case the degree of integration may not have been enough and, accordingly, that our essay in integrated study has been useful. While certainly not seeking to replace the separate subjects, such an essay may well provide valuable if seemingly rather obvious insights which may otherwise be missed, or neglected.

One example concerns the monetary economics of recent years, which has tended to concentrate on discovering various stable relationships which are hypothesised to prevail in the future, and to provide a firm basis for policy. This is fine if the relevant institutional background is more or less static, but not if it is not. Yet in an era of financial innovation and institutional change, that is clearly observable if less susceptible to quantitative study, we at first tended not to realise sufficiently the dynamic importance of innovation and the limitations it placed upon the reliability of econometric research for policy purposes. The insights of an essay in integrated studies, if carried out earlier, might have helped us to make better judgements and better policy.

Another example concerns banking supervision and other regulatory activities, including direct credit controls. Here again there has sometimes been a tendency to think in terms of a rather static background and to judge the merits of a particular set of arrangements in pure 'better or worse' terms, although the judgement may in practice have to apply to a rapidly and forcefully changing background. In addition there is sometimes a tendency to underestimate the effect of one set of regulations in one field on another set (or lack of them) in another field.

The development of elaborate and articulated argument in the banking supervisory field is new to this country and dates largely from the Banking Act 1979. But already its occasional integration with monetary economics and other studies enables us, for example, to see and understand more clearly the macroeconomic implications of some particular act of deregulation that might be taken in response to pressures of competition and innovation.

A final example concerns technology. For it was the emerging possibility of a technological revolution in banking which in practice made us initiate the integrated study which we have presented to this conference. Technology spells the innovation that has typified the industrialised countries since the end of the eighteenth century, with ensuing institutional and cultural transformation. Studying the electronic revolution integrally with monetary economics and banking supervision has not only been important in itself, for assessing the implications of the first for the other two, it has usefully drawn our attention more closely to the entire process of financial innovation in our time and its ultimately compelling force.