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THE FOLLOWING TOPICS WERE COVERED:

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Building society conversions
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The SIB review of the metals markets
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Electronic money: public policy issues
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Rating sovereign risk
The Managing Director of sovereign ratings at IBCA describes the risks in sovereign lending, and how rating agencies try to measure them.

Deposit protection and bank failures in the United Kingdom
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International regulatory co-operation
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How will changes in the regulatory framework affect the US financial scene and what issues need to be addressed?

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FINANCIAL SECTOR ISSUES

This journal, *Financial Stability Review*, was launched 12 months ago — a joint venture between the Bank of England and the Securities and Investments Board. At the time, neither party expected this tentative flirtation to lead to anything more serious. But shortly after our second issue, the new government announced a shotgun wedding. The Bank of England Bill, being introduced in the new session of parliament, will give the Bank operational independence in the field of monetary policy and provide for the transfer to the SIB (which will soon have a new name) of all its supervisory powers — under the Banking Act for deposit-takers, under Section 43 of the Financial Services Act for wholesale market institutions, and under Section 171 of the Companies Act for payment netting schemes.

Howard Davies, until July the Deputy Governor of the Bank (and in that capacity creator of this magazine), has become the chairman of the SIB and prospectively of the super-regulator currently known by the working title "NewRO".

The Bank itself will remain responsible for the stability of the financial system as a whole, through its market operations and through its central role in payment and settlement systems, which give it the ability to monitor systemic threats and a capacity, where necessary, to intervene. The Bank and NewRO will need to work closely together, and have been preparing a memorandum of understanding with HM Treasury which sets out the responsibilities of each and they will co-operate.

The anatomy of a super-regulator

Outline plans for the new regulatory authority were published at the end of July[1], and are summarised in the box overleaf. No fewer than nine regulatory bodies are to be merged into NewRO. The administration of this change, and the task of combining the different statutory objectives and organisational cultures is complicated in that the new legislation will come in two stages.

The Bank of England Act, which will transfer the Bank's supervisory responsibilities to NewRO, is likely to become law in spring 1998; but the main regulatory reform measure, which provides for the incorporation of the SROs and the supervisors of building societies, friendly societies and insurance companies into NewRO, will not be introduced until the next session of Parliament and is unlikely to become law before the end of 1999. Under interim arrangements, the staffs of the SROs will transfer to NewRO, but NewRO staff will continue to operate, formally, under contract to the SRO boards. The staffs of the Building Societies Commission, the Friendly

Societies Commission, the Registry of Friendly Societies and the Insurance Directorate of the Department of Trade and Industry will not transfer until the new law is in force. However, all of the bodies are co-operating closely to ensure a smooth transition.

The institutional arrangements for regulation are thus likely, over the next two years, to absorb significant amounts of management time — even though, as the article, *Reflections on Financial Regulation*, by Charles Goodhart, Philipp Hartmann and David Llewellyn, which is published in this issue argues, institutional structure is not an issue of primary importance to the effectiveness of regulation.

The authors suggest that there is no single "right" structure — what matters most is the way supervision is conducted. The design of regulatory structures, or the internal structure of a mega-regulator, has to be focused on the objectives of regulation.

This is recognised in the SIB's report to the Chancellor: this starts, not with the nuts and bolts of integrating regulators and their different legislative frameworks, but with a statement of the high-level objectives of the new body, and an outline of NewRO's general approach to regulation.

NewRO commits itself to pursue its regulatory objectives in an efficient way and to ensure that the costs of regulation are proportionate to the benefits. It promises to pursue a flexible and differentiated risk-based approach to setting standards and to supervision, making appropriate distinctions between the regulation of wholesale and retail business. It will operate in a way which recognises the benefits of competition and innovation to consumers and to the economy. NewRO recognises that there are risks in competitive markets, including the risk of failure: "Regulation does not absolve consumers of responsibility for their own decisions on their financial affairs. However, the extent to which they can exercise that responsibility and the types of risk that they would reasonably be expected to assume depend on their level of knowledge and expertise."

Getting the incentives right

All regulators recognise that, in rapidly changing financial markets, regulatory objectives of any sort, however carefully defined, are becoming more difficult to deliver. Regulators cannot be everywhere. Goodhart, Hartmann and Llewellyn note that "external regulation, both in its regulatory mode of seeking to lay down, *ex cathedra*, common rules and ratios that all banks should follow, and in a supervisory-monitoring mode of checking whether banks are complying with such rules, is becoming both less effective and less feasible ..."

The lesson from Barings, they suggest, is that "the external regulation required to prevent such cases of fraud (where it had escaped internal management) would have had to be so pervasive, so intrusive and so expensive as to be practically impossible".

So while the imposition of basic minimum standards remains a goal, especially in emerging countries, in more developed markets the emphasis is switching to the identification of regulatory incentives that will reinforce internal management risk control mechanisms, and the development of more sophisticated tools for measuring risk of all types.

There has, therefore, been growing interest in academic and regulatory circles in finding ways to harness market forces in support of regulation, and to identify market or regulatory incentives that go with the grain of what responsible managers of financial institutions ought anyway to want to do. An example, discussed in the article in this issue, *The Pre-commitment Approach to Setting Capital Requirements*, was the decision in 1995 to recognise individual banks' value-at-risk (VaR) models as a basis for setting capital requirements against trading books, rather than persevere with clumsy rule-based capital requirements under which different risks are simply added together with no allowance for the benefits of diversification across

OUTLINE PLANS FOR NEW REGULATORY AUTHORITY

The regulatory functions of nine bodies will come together to form NewRO. They are:

- **The Bank of England**
- **The Building Societies Commission**
- **The Friendly Societies Commission**
- **The Insurance Directorate of the Department of Trade and Industry**
- **The Investment Management Regulatory Organisation**
- **The Personal Investment Authority**
- **The Registry of Friendly Societies**
- **The Securities and Futures Authority**
- **The Securities and Investments Board**

The corporate vehicle for the merger will be the SIB, a company limited by guarantee set up in 1985 to be the designated authority under the Financial Services Act, and shortly to be renamed.

The budgeted staff numbers of these regulators amount to 2,100. As far as practicable, it is intended that they will transfer to NewRO from the combining organisations once the new Bank of England Act is effective — expected to be spring 1998 — so that the process of integration into a single organisation can start. However, until the Regulatory Reform Bill takes effect, probably towards the end of 1999, the legal responsibilities of the current regulatory bodies will remain unchanged. During the transitional period, therefore, existing supervisory relationships will continue. For the longer term, however, significant changes of structure are envisaged. NewRO plans to adopt a functional model of regulation. Five functions are envisaged:

***Authorisation*. This will handle all applications for authorisation and the vetting and registration of individuals.**

***Investigations/Enforcement/Discipline*. A dedicated unit will handle cases across all regulated firms and markets, bringing together the necessary specialist skills and expertise.**

***Relations with consumers*. NewRO plans to establish a single point of entry for all consumer enquiries and complaints. During the transitional period, however, existing arrangements for the resolution of disputes will continue to operate. Existing compensation schemes will also continue to operate on their present basis for the time being, but will be reviewed to assess the potential for harmonisation in the future. The principle that compensation should be paid for by regulated businesses — and thus consumers — will be preserved, and for reasons of cost and moral hazard there is no intention of providing a complete safety net.**

***Supervision*, which will be sub-divided into business areas. This will cover prudential supervision and conduct of business regulation where relevant. In regulating financial conglomerates NewRO will build on the existing "lead supervisor" arrangements to secure more effective co-ordination. The supervision team will cover Recognised Investment Exchanges and Clearing Houses, and will oversee the wider markets including providers of infrastructure support.**

***Policy*, devolved as much as possible to individual regulatory areas but with a central policy "think-tank" supporting senior management.**

It is expected that NewRO will have a board of 10-15, some of them executive. They will be appointed by the Treasury which has overall responsibility for the regulation of the financial system. The Board will oversee NewRO's exercise of its powers, deal with corporate governance issues, exercise quality control over the organisation and handle major issues of policy and standard-setting.

NewRO plans to devise arrangements for securing consumer input into policy formation and decision-making, including a standing consumer panel to advise the NewRO Board. It also intends to devise arrangements for securing practitioner input. Both of these issues will be the subject of consultation later in the year.

markets. VaR models had been developed to give bank managements a consistent view of the overall portfolio risk taken by the bank, and with some additional safeguards regulators have agreed that these can in some cases form the basis of regulatory capital requirements as well.

Federal Reserve Board economists have proposed a more radical approach under which, rather than have the regulators lay down rules regarding the amount of capital a firm should hold against its exposures, or setting parameters determining how the output of a VaR model is converted into a capital requirement, the firm itself specifies in advance the maximum amount that it expects to lose in a given period from trading activities, and is then judged against that promise and required to pay fines or face other penalties if it exceeds the limit it has set for itself.

This approach, known as "pre-commitment", allows the firms to set their own capital requirements.

The pre-commitment approach avoids some of the drawbacks of the regulators themselves setting detailed parameters to calculate capital requirements for trading books on the basis of VaR models. It also avoids the "one-size-fits-all" approach, which ignores the differences between firms in terms of their skills and market positions.

But pre-commitment carries its own risks. One is that the penalty regime, which is essential to the credibility of the scheme, may itself deliver perverse incentives if not very carefully designed. Three possible types of penalty have been advanced: additional capital requirements, fines and public disclosure. However, concern about possible reputational damage if there were a breach could deter large conservative banks from running significant trading book risk, or encourage them to pre-commit excessive amounts of capital. This is because any reputational damage would affect the larger banking book as well as the trading book. A further issue is that the penalties would fall on the shareholders who, for the most part, do not determine the size of the exposure being run; or, at the extreme, on counterparties who may simply find that the bank has defaulted before the regulator gets round to fining it. But the approach is now being tried in New York, and the effect on firms' risk-taking behaviour will be of great interest to regulators.

Securities fraud

Incentive structures can be relevant to other aspects of firms' controls. An article in the April 1997 issue of *Financial Stability Review*[2] showed how the design of traders' remuneration packages had the potential to add to the risks they took on their employers' behalf. In their article in this issue, *Controlling Securities Fraud*, Patricia Jackson, William Perraudin and Norvald Instefjord explore possible incentives for management to maintain an effective control environment.

Regulatory incentives include setting higher capital requirements for firms whose systems are found wanting, an approach hitherto used mainly by bank regulators; increasing the intensity of supervision for perceived higher-risk players; *ex-post* fines, which may be publicised — an approach adopted by many securities supervisors; or requiring, in a more or less public way, the removal of management at various levels.

In New Zealand attempts have been made to pin clear public responsibilities on bank directors to certify the adequacy of control systems, with heavy criminal and civil penalties if they get it wrong. Regulators in the UK have also have been placing greater emphasis on board responsibility.

The ultimate rationale for regulation, as Goodhart *et al* observe, is to correct for various forms of market imperfection or market failure. So it is worth asking, in this case and others, why the market itself cannot provide the necessary incentives.

One reason is the principal/agent problem: managers in a firm, who take all the key operating decisions, do not necessarily have the same risk/reward trade-off as

do the shareholders. Typically management will have a greater tolerance of risk because they bear less of the cost of failure.

Millennium risk: a survival issue

No responsible manager can ignore a risk to the entire operating system of his firm. The Bank for International Settlements has released a report[3], the latest of many, on the risks to banks and their supervisors of the millennium problem. This is the risk that many IT applications will cease to function normally because date fields do not recognise in 2000 the change of century. This is an important issue across the whole economy but for banks and securities firms, dealing and settling in fast-moving markets across the world, the potential costs of a system failure are immense, threatening the entire firm and the financial system as a whole.

While new applications tend to be Year 2000-compliant, many old applications continue to run, and new applications or operating systems often depend on them.

The problem exists because the two-digit identifier of the year used in older programs — 67 for 1967 — breaks down when it is 00, which could be interpreted to mean 1900 rather than 2000. So systems may treat transactions as having been open for 100 years (or terminated before they began).

Howard Davies, until July the Deputy Governor of the Bank (and in that capacity creator of this magazine), has become the chairman of the SIB and prospectively of the super-regulator

New files will be archived or will be erased. These and other logic problems can cause serious problems for debt collection, interest calculation and ageing of information. They could disrupt business significantly.

For many firms, achieving Year 2000 compliance will be complex and resource intensive. The Bank for International Settlements calls for each bank to have an action plan establishing compliance as a strategic objective at the highest level, ensuring recognition throughout the firm that Year 2000 compliance may be a survival issue, quantifying the risks, setting priorities and preparing inventories of corrective measures. On a critical path, all of this should already have happened, leaving time for adjusting systems and testing them before mid-1999. This mirrors very closely the approach taken by the Bank and the Financial Services Act regulators; NewRO has now established a task-force to co-ordinate their action.■

NOTES

1 Report to the Chancellor on the Reform of the Financial Regulatory System, July 1997. Available from the SIB.

2 Financial Stability Review, Issue Two, Spring 1997. *Remuneration and Risk*, by Daniel Davies

3 *The Year 2000: A Challenge for Financial Institutions and Bank Supervisors*: Bank For International Settlements Website http:\\www.bank for international settlement.org

CONTROLLING SECURITIES FRAUD

By Patricia Jackson and William Perraudin, Bank of England, and Norvald Instefjord, Birkbeck College

In recent years, several prominent financial firms have been seriously affected by the fraudulent or irregular activity of single traders or groups of traders. Often, control failures by senior management have paved the way for these problems. Several important cases and their implications for regulatory policy are explored in detail in a forthcoming Bank of England discussion paper, *Securities Fraud* by Norvald Instefjord, Patricia Jackson and William Perraudin. Drawing on that analysis, this article asks why the market may provide inadequate incentives for firms to avoid problems of this kind and how regulators can motivate management within financial firms to exert adequate control over traders and other key employees. This issue is the matter of active debate among regulators and this article should be seen as an analytical contribution to that debate rather than an anticipation of the final outcome.

As banks have become increasingly involved in securities activities, their exposure to sudden damage from illicit or irregular activity by their employees has increased.

Although banks have always been open to fraud by employees, the scope for frauds amounting to hundreds of millions of pounds is limited in traditional lending banks, given the checks and balances in the granting of loans. In securities activities the scope can be much larger. Traders may be in a position to take substantial exposures for the firm in fast moving markets.

The problem can be especially great in markets where highly-geared exposures can be created with little up-front expenditure or where the complexity of some of the transactions increases the potential for illicit or irregular activity. Even if a bank's principal risk activity is credit, not market-risk, activity of this kind could make a sizeable dent in the balance sheet.

The accompanying boxes set out details of cases which resulted in substantial losses for three firms: Barings, Daiwa and Kidder Peabody. These cases have common features: there were weaknesses in control systems which meant that losses were not uncovered and spurious profits were recorded; in two of the cases spurious profits boosted dealers' bonuses; and managements' efforts to monitor the dealers were inadequate.

There are many ways in which those who work for financial firms may attempt to deceive them. For example, in 1996 Morgan Grenfell lost a great deal of money because a fund manager created a network of shell companies to conceal his highly speculative and, ultimately, heavily loss-making investments.

In a second broad category of cases, individuals in financial firms attempt to deceive or manipulate other market participants to gain an advantage. Between 1989 and 1991, traders in Salomon Brothers broke rules limiting the fraction of a US Treasury auction for which a firm could bid to 35 per cent.

In the May 1991 auction of two-year notes, for example, by placing bogus orders on behalf of its clients, Salomons ended up controlling $10.6bn of the $11.3bn issue. The initial cost to Salomons' reputation of these rule breaches was very substantial. For a period,

many counterparties reduced their trading with Salomons which forced it to shrink its balance sheet by a third.

A more extreme example of the vulnerability of firms to outside fraud by their employees is that of Drexel Burnham Lambert. In 1988, Drexels agreed to pay fines of $650m because of frauds carried out by Michael Milken involving activity in the junk bond market.

The fines, although large, were outweighed by the reputational costs. The effect on counterparties' willingness to deal with the firm was one of the contributory factors behind Drexel's later insolvency.

Market incentives

It is not possible for regulators to check and cross-check activities in minute detail in their efforts to ensure firms' controls are sound at every level. Illicit or irregular activities generally constitute a tiny fraction of the huge volume of bona fide transactions carried out by a firm and hence are very difficult to spot from outside the firm.

Furthermore, lax control environments are seldom characterised by the absence of key control systems (easier to observe from outside) but by controls being overridden or set aside (much harder to observe).

The key issue for regulators is, therefore, how to provide incentives to encourage management to put appropriate control systems in place and to ensure they are effective at all times. Before discussing these incentives, it is worth asking why the market alone does not provide sufficient incentives for the manage-

Leeson was conducting an elaborate deception, made possible because he had control of both dealing and back-office operations

BARINGS AND LEESON

Box 1

Barings was declared insolvent on 26 February 1995, due to the activities of one trader — Nick Leeson — in Barings Futures Singapore (BFS), a Barings subsidiary. The Barings business was subsequently taken over by International Nederlanden Group NV (ING).

From late 1992 until early 1995 Leeson had reported increasingly large profits on apparently riskless arbitrage trading, where Nikkei exposures taken on the Singapore Futures Exchange, SIMEX were supposedly being completely hedged by offsetting contracts taken on the Japanese exchanges.

In fact, Leeson was conducting an elaborate deception. From the outset, rather than making profits as reported to the firm, he had incurred losses. To conceal the losses, Leeson had employed a hidden SIMEX account numbered 88888. He had persuaded a back-office programmer to alter Barings' accounting information so that information about the trading on 88888 would not be reported to London. Information on margin requirements for this account were, however, sent to London but were not reviewed. On 27 February the losses on Leeson's dealing positions amounted to £827m.

The fact that Leeson was in charge of both dealing and back-office operations in the Barings Singapore subsidiary was crucial in facilitating the deception. The problem of lack of segregation between the back and front offices in BFS had been spotted in an internal audit of the company in August 1994 but Barings' management had not implemented the internal audit recommendations.

The transfer of huge volumes of funds from Barings to Singapore to cover the margin calls on SIMEX, created by Leeson's illicit trading positions, led to a marked discrepancy between the requests for margin and the margin report. Instead of fully examining this discrepancy at an early stage, assumptions were made about the calls being generated by customer positions. This led to the exposures being uncovered only at a very late stage.

Box 2 **KIDDER PEABODY AND JOSEPH JETT**

The case of Kidder Peabody involved the creation of false profits, allegedly by a single trader, Joseph Jett. Although the trader appeared to be making substantial profits ($32.5m in 1992 and $151m in 1993) he was in fact making losses.

The recorded "profits" enabled Joseph Jett to earn a bonus of $9m. When the action was uncovered there was a balance sheet gap of $350m.

Kidder Peabody claimed that Joseph Jett had exploited a weakness in its accounting system with regard to strips. The New York Fed offers bond dealers a service whereby it exchanges conventional government bonds for a basket of strips, representing claims to the bond's coupon and principal payments. The Fed will also exchange strips for the original bonds — these are called reconstitutions. In the Kidder Peabody system, where a strip was held, the reconstitution could be entered as a forward and generate an immediate apparent profit. As the settlement date approached, the apparent profit would disappear as current and forward prices converged. In order to maintain a given level of profit, it would therefore be necessary to progressively increase the volume of forward reconstitutions.

The management of Kidder Peabody became concerned about the swings in the total balance sheet caused by these positions and the size of the reported profits and carried out an investigation which uncovered the problem.

One of the issues in the case was weakness in the Kidder Peabody control systems. The Securities and Exchange Commission brought cases against Jett's two superiors for failure to supervise, which they settled. A case was also brought against Joseph Jett for securities fraud. Jett is contesting the case and has claimed he was acting under orders.

ment to put in place an effective control environment.

First, it may be true that the private cost of failure to shareholders is lower than the social cost and, therefore, there may be social reasons for tightening controls further than shareholders might think necessary.

This would certainly be the case where the failure of a large firm would disrupt the market and perhaps affect confidence in other institutions within that market. Second, for large banks, the shareholders do not normally take decisions about controls. These decisions are taken by the management of the bank, creating what is known as a principal-agent problem. The shareholders would suffer if lax controls led to substantial losses, but the management might be affected to a much smaller degree.

Indeed, the management may well have reasons not to ask searching questions of star traders. One feature of some of the recent cases is the extent to which the bonuses of senior management depended on the profits, or apparent profits, which were generated by star traders.

Although shareholders have limited scope to influence the detailed control environment, they could, in principle, insist on contracts for senior managers which would provide appropriate incentives by penalising managers after problems have been discovered. Possibilities include withholding bonuses — or even sacking — those who are responsible for monitoring the fraudster.

Change of management may not be a very effective sanction, however, given the likelihood that individuals, particularly if they were not seen as being directly involved in the problem, could be hired by competitors.

Furthermore, the potential disruption which would result from the sacking or penalising management may be quite serious (for example Morgan Grenfell faced problems in the wake of the Peter Young affair). Therefore, it may not be possible for firms *ex-ante* to commit to take such action (*vis-à-vis* key managers) if a fraud is discovered as the result could be further damage to the firm.

Regulatory incentives

Thus, ensuring control systems are effective is an important objective for financial regulators. To pursue this objective, they must first inspect firms to check that key controls are in place.

In the UK, inspections of the banks' systems and controls are organised in two different ways. The banking supervisors set the scope for a report by the firm's reporting accountants which goes to the firm and to the regulators. The supervisors also carry out their own team visits to look at systems and controls. The Securities and Futures Authority (SFA) carries out on-site inspections of securities firms, systems and controls.

Once problems have been identified, regulators have at their disposal various levers to encourage firms to tighten the control environment. In the UK, in the case of banks, an important lever is the risk-asset ratio. If there are concerns about the control environment, and therefore about the risks faced by the firm, the supervisors will request remedial action and, if not satisfied, will increase the bank's capital requirements by raising the risk-asset ratio. This is possible because the UK is one of the few countries where capital requirements met by the banks are varied according to the risks they face and quality of controls rather than being a fixed minimum.

The risk-asset ratio is not made public and therefore does not affect a bank's reputation. However, it is an effective lever — if a bank is close to its target ratio it has to seek more capital from shareholders to maintain the same profile of book, which may well be regarded as costly by the bank's management. Traditionally the securities regulators have not tried to use capital as a lever in this way but have had fixed minimum capital requirements.

Box 3 DAIWA AND IGUCHI

The Daiwa case also involved the disguise of loss-making positions. Iguchi, who had been appointed Head of Daiwa's New York bond trading operations in 1983, used fraudulent activity to disguise trading losses. Over an 11-year period (from 1984 to 1995) the total loss amounted to $1.1bn by way of an estimated 30,000 unauthorised trades — an average loss of $400,000 for every working day.

The losses were hidden by selling securities held on behalf of customers. These sales were concealed by hiding the trade confirmations and forging statements of securities holdings as well as falsifying the statements of securities held for customers. As in the case of Barings, disguising the losses was possible because Iguchi, until 1993, was in charge of both the front and back offices.

Even after separation of the two offices, the discrepancy between actual securities holdings and Iguchi's forged statements was not picked up. When announcing the losses, Daiwa said that the pay of senior management would be temporarily cut to reflect their responsibility.

On 2 October 1995, the Federal Reserve Board and New York State Banking Department issued a cease and desist order against the New York branch. In a joint statement in November 1995, by the Federal Reserve, the FDIC, NYSBD and several other state banking departments, it was announced that a joint order had been made terminating the US banking operations of Daiwa Bank. Orders were also made requiring the termination of the Daiwa Bank Trust Company operation in the US. The actions were taken on the basis that Daiwa Bank and its officials had engaged in unsafe and unsound banking practices and violations of law over an extended period of time that were most serious in nature. Daiwa agreed to terminate or sell its business in the US by 2 February 1996. In addition, the bank was faced with a 24-count indictment claiming criminal fraud.

One issue of concern to the US authorities was that although Daiwa's senior management had learnt of the losses from Iguchi in July 1995, they had concealed those losses from the US authorities for almost two months. Also in 1992 and 1993, the management of the firm had misled the Federal Reserve examiners regarding their trading activities and the separation of trading from the back office function. In February 1996, Daiwa pleaded guilty in a US district court to a conspiracy to conceal the trading losses. It was required to pay a fine of $340m.

However, the UK's SFA has started to move in this direction by introducing variable capital requirements for credit exposures of securities firms, enabling it to increase substantially the requirements for firms perceived as having poor credit control procedures.

Among other levers available to regulators, intensity of supervision can be used both as a response to perceived weaknesses and a way of encouraging management to improve controls. A number of regulators are currently in the process of putting in place systems of this kind. For example,the UK banking supervisors are developing an approach called RATE which will attempt to assess the risk profile of banks and the adequacy of their control environments. This will enable supervision to be tailored towards higher-risk players. The SFA has introduced a similar approach and the fund management and retail conduct of business regulators, IMRO and the PIA have moved in this direction as well.

Even if a firm does possess the key control processes the crucial question remains whether it is operating effectively at all times and whether, for example, in the case of internal audit, its recommendations are faithfully implemented. For outside regulators, or auditors acting on their behalf, these questions may be difficult to answer. This point is particularly important in the case of large diversified institutions. Core activities may be well run, but far flung operations, further from the gaze of the regulators, might be less so. It is noticeable that in both the Barings and Daiwa cases the problem lay in overseas operations, and in the case of Drexel in an operation geographically separated from the main business.

Even if a firm does possess the key control processes the crucial question remains whether it is operating effectively at all times

Ex-post penalties

The design of appropriate ex-post penalties is, therefore, also important. It is noticeable that banking and securities regulators have developed rather different approaches to such penalties. The securities regulators have used a combination of approaches: private remedial action, for example, to deal with inadequate management, and the imposition of public sanctions including fines. Banking supervisors have tended to concentrate on private remedial action.

Several banking supervisors, such as those in the UK, do not have the power to fine banks (see Table 1) and others which do have the power rarely use it. Banking supervisors have focused on the removal of management and, in extreme cases, removal of authorisation. However, if possible the latter is avoided and remedial action is undertaken. Actions taken short of de-authorisation are usually not publicised to prevent loss of confidence. Where managers are no longer regarded as fit and proper they would, in the UK, not be able to take a senior position in another bank or investment firm, although they may still be able to seek a position as a consultant.

Securities regulators' willingness to announce penalties publicly reflects in part the fact that securities firms, because of the liquid nature of their balance sheets, are easier to close, if confidence in them wanes, without substantial losses to creditors. Drexels eventually failed and was liquidated with little loss to creditors. The same would not be true of a bank because the loan book can only be sold quickly at a substantial discount. Recently, securities firms may well have become somewhat less liquid than in the past because of the volume of swaps that they carry, but even these can be sold much more easily than a loan book because counterparties

Table 1 FINES — BANKING SUPERVISORS

Country	Power to Exercise	Frequency	Amount
Germany	Yes	Usually 10 to 20 cases of enforcement fines and about 4 to 10 cases of administrative fines per annum.	Current enforcement fines DM10,000 (£3,500) up to DM50,000[a] (£17,500). Administrative fines not exceeding DM100,000[b] (£35,000) and should reflect benefit gained from infringement. In practice, usually between DM200 (£70) and DM25,000 (£8,500).*
Norway	Yes	Authority not used so far.	No maximum. The amount would depend on the size of the institutions and the severity of the issue.
Austria	Yes	N/A	Enforcement fines up to ASch300,000 (£14,850)
Greece	Yes	N/A	N/A
Iceland	Yes	Seldom used.	N/A
Luxembourg	Yes	Not frequently used.	Luxfr5,000 (£85) to Luxfr 5,000,000 (£85,000) and/or 3-8 days' imprisonment depending on the nature of the infringement.
Liechtenstein	No. Power rests with the Government and the district court	No cases within last few years.	Depending on the specific case up to SFr50,000 (£21,00) or SFr100,000 (£42,000).
Belgium	Yes	Not used so far.	Fines under administrative law are BFr10,000 (£170) to BFr1m (£17,000) per calendar day and a global upper limit BFr50 m (£850,000).
France	Yes	Rare. In most cases fines are imposed for late transmission of financial information to supervisors or failure to comply with money laundering regulations.	Fines may not exceed the minimum amount of capital required for the institutions. They have ranged between FFr10,000 (£1,000) & FFr300,000 (£30,000).
Ireland	No		
Italy	Yes	Some 80-85 cases on average over the three years 1994-96	Breaches of prudential rules, integrity requirements etc. L1m (£360) to L50m (£18,000). Corporate officers who breach the rules regarding disclosure to customers of terms and conditions of contracts L2m (£720) to L25m (£9,000).
UK	No		
Spain	Yes	Authority used frequently but usually for not meeting complex reserve requirements.	Maximum amount for very serious infringements, 1 per cent of own funds or Pta5m (£20,500), for serious infringements 0.5 per cent of own funds or Pta2.5m (£10,250). Maximum fine for a manager Pta 10m (£41,000).
Netherlands	No		
USA	OCC — Yes Federal Reserve — Yes	This type of action usually reserved for individuals except where a bank has filed a false or misleading report. A total of 614 fines has been assessed in the last six years. Powers to fine firms for law violations, eg misreporting. 5-10 cases a year all foreign banks. Individuals can be fined for their actions — perhaps two cases a year.	The amount depends on the seriousness of the case but most fines for individuals are $10,000 (£6,200) to $25,000 (£15,500). Maximum $1m or 1 per cent of assets per day for a firm. Largest fine BCCI $200m (£124m). Fines for individuals usually $10,000 to $100,000 (£6,200 to £62,000).
Japan	Ministry of Finance — Yes Bank of Japan — No	Only one case of a bank being fined. Other penalties are used as well such as restrictions on business activities.	Maximum of Y500,000 (£2,600), likely to be revised upwards.
Denmark	Yes	Used only once for failure to submit annual accounts.	There is no limit on fines.

*** Germany — A new law will take effect on 1 January 1998 increasing (a) to DM500,000 (£175,000) and (b) to DM1m (£350,000)**

Table 2 **ANALYSIS OF SFA FINES, 1991 TO DATE**

	(i) Control Failures	(ii) Fraud or Deception (Theft)	(iii) Breach of Reporting Requirements	(iv) Exceeding Dealing Authority	(v) Misleading Information Advertisements
No Cases	58	95	17	10	6
Max Fine (£)	240,000	200,000	25,000	18,000	200,000
Min Fine (£)	2,000	1,000	1,500	5,000	9,000

Notes: (i) Fines on firms or senior management
(ii) Usually individuals who are also often banned from the industry
(iii) Usually Firms
(iv) Sometimes individuals, sometimes firms
(v) Usually firms

Source: SFA notices

are generally of high quality and hence exposures are more easily priced.

The proposed changes in the regulatory structure in the UK will mean that, in future, policy on penalties and regulatory incentives for the management of financial firms will be developed by a single regulator spanning financial services firms — banks, building societies, friendly societies, credit unions and insurance companies. One of the issues which will be considered is whether the approaches adopted for different types of firms should be consistent or whether there are good reasons for differences.

Analysis of penalties

An analysis of SFA fines from 1991 to date (Table 2) shows that a relatively high proportion (over 30 per cent) have been for control failures.

It is interesting to note that fines are frequently levied on securities firms themselves rather than on the individual within them (see Table 3). Given the potential principal agent problem between the shareholders and the managers, this may not always be appropriate. Where the shareholders are dominant and in a position to influence the way management runs the business, fines on firms may provide appropriate incentives. If shareholding is widely dispersed, penalties for individuals within the firms may have more effect.

Changes in the UK regulatory structure will mean that policy on penalties and regulatory incentives for the management of financial firms will be developed by a single regulator spanning financial services firms

Instefjord, Jackson and Perraudin (1997) provide a theoretical analysis of how fines on individual dealers and on those charged with monitoring them, affect dealers' incentives to report profits accurately. Those acting as monitors may either be management or shareholders depending on whether the interests of these two groups are aligned. The analysis suggests that penalising the manager decreases the prevalence of false reporting as one might expect. Simply raising the level of dealer fines may have the unintended effect of lowering

the amount of monitoring by the firm since managers could rely too much on the deterrent effect of the dealer penalty.

An important supplement for direct pecuniary penalties such as fines is to ban those associated with fraud or who have been negligent regarding the control environment. Bans may be hard to enforce since individuals may resume their activities under other guises. However, it is likely to impair the future earnings of the individual concerned significantly. In the UK, the SFA has designated increasing numbers of individuals "not fit and proper" to work for regulated firms in recent years — the numbers rising from one and six in 1991 and 1992 to 12 and 17 in 1995 and 1996 respectively (see Table 3).

Raising the level of dealer fines may have the unintended effect of lowering the amount of monitoring

An important question facing regulators is: how many levels of management, above an individual committing securities fraud, should be sacked or banned? Instefjord, Jackson and Perraudin (1997) look at this question in a theoretical model of a hierarchy in which individuals decide whether or not to commit fraud and whether to monitor individuals below them in the hierarchy.

The model explores how regulators may influence the agents' incentives to monitor or commit fraud

Table 3 SFA TYPES OF PENALTY — JAN 1991 TO MAR 1997

Individuals:

Year	No of Cases	Fines	Costs Awarded	Not Fit & Proper	Reprimand
1991	11	0	1	1	11
1992	11	4	4	6	3
1993	10	3	3	10	0
1994	34	28	25	12	5
1995	22	10	11	12	8
1996	37	18	34	17	16
1997	5	3	4	1	4
Total	**130**	**66**	**82**	**59**	**47**

Firms:

Year	No of Cases	Fines	Costs Awarded	Expelled	Reprimand	Restrictions Imposed	Not Permitted
1991	19	19	7	0	1	0	0
1992	11	5	1	5	1	1	0
1993	3	1	1	0	1	0	1
1994	4	3	2	2	0	0	0
1995	6	5	7	0	1	0	1
1996	11	11	11	0	4	0	0
1997	1	1	1	0	1	0	0
Total	**55**	**45**	**30**	**7**	**9**	**1**	**2**

by altering penalties imposed on fraudsters and fines levied on managers found not to have monitored those below them in the hierarchy. It also explores the action which could be taken by the firms to encourage greater monitoring.

The model shows that reliance on heavy penalties alone might not have the intended effect. Managers might even monitor staff less because of a belief that subordinates would be deterred from committing fraud due to the heavy external penalties. Although penalties for the managers in the hierarchy above the fraudster might help to reduce fraud, it is possible that they could be made more effective by increasing the number of levels of management that are held responsible.

The most effective way to encourage tighter controls is for firms to reward tight monitoring and the spotting of potential or actual problems. This is all the more the case because these rewards must be large enough to outweigh the costs of monitoring which could be perceived as large. For example, if a senior manager has a particular star trader in his group he might be concerned that tight monitoring might lead to the loss or demotivation of that individual, affecting the returns for the group and the individual bonuses, including his own.

Senior management

It is clear from the cases examined in Instefjord, Jackson and Perraudin (1996) that senior management strongly influences the compliance culture of a firm and can affect the costs for individual managers of monitoring their subordinates.

Senior management strongly influences the compliance culture of a firm and can affect the costs for individual managers of monitoring their subordinates

Recently, regulators in several countries have considered clarifying the responsibilities of senior management as a way of influencing firms' control arrangements.

The example of New Zealand is interesting in this respect. In 1996, the Reserve Bank of New Zealand introduced a new approach to supervision for banks operating in New Zealand, all of which are foreign-owned. Prudential supervision of banks by the authorities was reduced and a new public disclosure regime introduced. A prime objective was to strengthen the incentives for the management of banks to maintain sound banking practices and to facilitate monitoring of bank financial performance and risk management by other participants in the market.

An important element in the New Zealand approach is a strengthening of the role of bank directors. Such directors are required to sign the disclosure statements to certify that "the information contained in the statements is not false or misleading", and to attest to their bank's financial soundness and to adequacy of its risk management systems. Directors must state that the bank has systems in place to monitor and control adequately the group's material risk, including credit risk, concentration of credit risk, interest rate risk, currency risk, liquidity risk, and other business risks and whether those systems are being

properly applied. Where the disclosure statement is found to be false or misleading, banks and their directors face potentially severe penalties, both criminal and civil.

In the UK, the Bank of England is exploring whether an annual statement should be sought from the chief executive and chief financial officer of banks, affirming that effective systems and controls are in place and that Banking Act requirements and policy guidelines have been complied with. Following difficulties winning disciplinary cases against senior managers, the SFA proposed a new rule imposing a direct duty on senior executive officers (SEOs) to take all reasonable steps to ensure that employees of the firm act so as to avoid serious damage to its reputation as a regulated firm. An SEO would be liable to disciplinary proceedings if this duty were not met. This proposal has considerable resistance from the firms because of an implicit reversal of the burden of proof. However, the proposal has now been modified to deal with this concern. The burden of proving failure by an SEO to comply with his duties under the rules will rest with the SFA, as at present.

The SIB has also carried out a review of these issues and released a consultative paper in July, entitled *Responsibilities of Senior Management* proposing a different approach. Every firm would have to prepare a statement setting out the management structure and defining where responsibilities rested. In the aftermath of problems, individuals not meeting these responsibilities could be subject to disciplinary procedures.

Boards should provide a statement that on the basis of enquiry they are satisfied that the institution complies with the Bank's fitness and properness criteria

Another issue for the firms is whether there should be an executive director with sole responsibility for the control function and with no business line responsibilities. In the Barings episode, it was noticeable that the recommendations of internal audit were overridden by the business line management, begging the question whether the control function reported to a high enough level within the company. However, it would be important that the presence of such a director were not used to absolve other executive directors of responsibility for failures of controls and therefore there would have to be a wider board responsibility.

The banking supervisors are of the view that the whole board should accept responsibility. The board should provide a statement that on the basis of enquiry they have satisfied themselves that the authorised institution (or branch) is in compliance with the Bank's fitness and properness criteria. The boards might also be asked to provide a statement as to whether the institution has systems in place to monitor and control adequately the institution's material risks and whether those systems are being properly applied.

The development of a single regulator in the UK will mean that these issues will be carried forward by a body which spans all forms of financial activity.■

THE VALUATION OF OPTIONS

By Howard Walwyn, Bank of England, and
Wayne Byres, Reserve Bank of Australia

Options have become widely traded products in financial markets. By their very nature — an option, rather than an obligation — they have transformed risk-management practices and have allowed the development of new financial products. These are used by a wide range of investors and consumers. This is the Bank of England's second survey of options valuation: the first was conducted in 1995.

The pricing and valuation of options is not straightforward. It involves modelling a complicated interrelationship between a number of market factors which are not always easily measurable. Consequently, the valuation of options has attracted a good deal of attention from market participants and regulators.

Market participants who deal in options need to ensure they have valued these products appropriately to measure and manage their exposure to credit and market risks, and calculate their profits and losses correctly for both internal management reporting and external statutory accounting purposes.

Regulators and supervisors are also interested in the appropriate valuation of option portfolios, not least so they can assess whether adequate amounts of capital are held against the risks involved.

It was against this background that in December 1996 the Bank of England conducted its second options valuation survey. The earlier survey, conducted in February 1995, had yielded a number of interesting results,[1] and the second survey was designed to follow up some of the issues raised — and to explore other issues that were not covered — in this earlier work. More specifically, the objectives of the second survey were:

- to supplement the process of model recognition under the Capital Adequacy Directive (CAD)[2] by ensuring that banks that had received model recognition were valuing their options portfolios appropriately;
- improve further the Bank of England's own knowledge of the complexities of valuing options, particularly in relation to some of the more exotic products that are becoming increasingly common; and
- to assess the range of valuations and risk parameters supplied by participating institutions, and to provide feedback to these institutions.

Methodology

More than 40 institutions with major trading activities in London were asked to participate in the survey. These included all the banks granted model recognition by the Bank of England, and a number of other institutions which are significant participants in the derivatives markets globally.

Eight products were chosen for valuation (see Table 1). Of these, five were options on foreign exchange positions, and the others were interest-rate related. Participants were asked to undertake a number of different valuations of each product, usually

involving variations in the underlying strike price. Valuations were requested as at 4.15pm London time on Wednesday 4 December 1996, using mid-market rates and assuming a counterparty of good standing (AA rated) with adequate credit lines available.

Participants were given the basic economic details of each of the transactions, and were then asked to collect the necessary input data (eg forward points, yield curves, volatilities) and to use their own model to produce a valuation.[3] While this approach makes variations in the results more difficult to explain than if these data are given, there are benefits in being able to identify potential problems with the input data used by the individual institutions.

Survey participants' responses on the models used to value foreign exchange options revealed a similar pattern to the last survey. For example, the vast majority of respondents who valued European vanilla options used the Black-Scholes[4] model. Many respondents also made explicit reference to the Garman-Kohlhagen[5] variation. Several banks' responses suggested the use of proprietary (as opposed to market standard) analytical models, but it was not clear to what extent

Table 1 **PRODUCTS CHOSEN FOR VALUATION**

Product 1	GBP/DEM straddle (ie a GBP/DEM call and a GBP/DEM put with the same strike) a) 10-month option at-the-money-forward b) 10-month option with a strike at GBP/DEM 2.5500
Product 2	JPY/CHF straddle a) 10-month option at-the-money-forward b) 10-month option with a strike at 95.00
Product 3	Reverse knock-in (up-and-in) barrier option on GBP/DEM a) 12-month option, strike at-the-money forward, barrier at 2.6500 b) 12-month option, strike 2.3500, barrier at 2.6500
Product 4	Double barrier (knock-out) option on GBP/DEM a) 12-month option, strike at-the-money forward, barriers at 2.4000 and 2.6500 b) 12-month option, strike 2.3500, barriers at 2.4000 and 2.6500
Product 5	Digital (binary) range option on GBP/DEM a) 12 month option, barriers at 2.4000 and 2.6500, payout if within range at expiry b) 12 month option, barriers at 2.4000 and 2.6500, payout if within barriers for entire life
Product 6	European call option on US Treasury Bonds a) 12-month option on "on the run" 10-year bond, strike at mid-market clean spot price b) 12-month option on "on the run" 10-year bond, strike at clean price of 106.00 per 100.00 c) 12-month option on 9 3/8% Feb 06 bond, strike at mid-market clean spot price d) 12-month option on "on the run" 5-year bond, strike at mid-market clean spot price
Product 7	Collar (Interest Rate Cap and Floor) on GBP LIBOR a) 12-month collar, 3 x 3 monthly resets, collar at 75bp above/ 25 bp below 3 month LIBOR b) as per a), but with floor set to produce zero premium product
Product 8	European swaption on USD LIBOR a) 12-month receiver swaption for 10-year swap paying 6 month USD LIBOR, strike 6.7% b) 3-month receiver swaption for 10-year swap paying 6 month USD LIBOR, strike 6.7% c) 12-month receiver swaption for 5-year swap paying 6 month USD LIBOR, strike 6.25%

these approaches were simply modified versions of the Black-Scholes analysis.

For exotic options, the outcome was more varied. About half the respondents on the single barriers (product 3) used a standard Black-Scholes/Garman-Kohlhagen model. Others were evenly distributed among proprietary analytical models, numerical (Monte Carlo) models and binomial/trinomial tree-type models. The majority of respondents who valued the double barriers (product 4) used exactly the same model as they used for the single barriers. Although a smaller number of respondents valued the digital products (product 5), the pattern for these products was very similar, with around half using Black-Scholes and half using proprietary, numerical and/or tree models in equal proportion.

Participants' responses on the models used to value the interest-rate products also revealed a similar pattern to that observed in the previous survey. Black[6] or Black-Scholes models were universally used to value the interest-rate collar product (product 7), and were also widely used to value the swaption products (product 8). A number of other models were used in addition to Black/Black-Scholes model in the valuation of the swaptions, namely Black-Derman-Toy[7] binomial, trinomial and Hull-White[8] trees, while a range of models was also used for the valuation of the bond option products (product 6): one third of the respondents used

Black/Black-Scholes, one third used Cox-Ross[9] or Cox-Ross-Rubinstein[10] binomial models based on bond forward yields, while the rest of the respondents used a variety of models including finite difference grids and other proprietary numerical models.

Results

A summary of the main results of the survey is set out in Table 2 (see Box 4, Option Products, for definitions). This illustrates the degree of variation of the main results for each product, expressed in the form of a percentage standard deviation[11] from the mean.

Volatility smile

The term "volatility smile" is used to describe a situation in which the implied volatility associated with options away-from-the-money differs from (typically is higher than) that associated with an at-the-money option.

In some survey products, participants were asked to value the same option with different exercise prices. To obtain an accurate valuation in markets where a volatility smile is present, banks should use different volatility inputs to value options.

Taking foreign exchange products 1 and 2 as an example, however, only one third of survey respondents used different volatilities for the away-from-the-money option in comparison to the at-the-money

Table 2 **MAIN RESULTS**

		Std Dev (%)					
Product	**No. of Responses**	**Value**	**Delta**	**Gamma**	**Vega**	**Spot Rate**	**Implied Volatility**
Product 1(a)	35	2.7	5.3	3.5	0.4	0.1	2.5
Product 1(b)	39	2.4	3.9	3.7	0.7	0.1	2.5
Product 2(a)	34	7.3	9.1	8.3	0.9	0.1	7.4
Product 2(b)	35	1.9	4.3	12.1	13.8	0.1	8.1
Product 3(a)	33	5.3	2.3	7.4	2.1	0.1	3.2
Product 3(b)	33	4.6	3.2	10.7	3.8	0.1	3.2
Product 4(a)	30	66.1	19.0	32.1	27.4	0.1	3.9
Product 4(b)	30	48.8	18.1	33.9	31.0	0.1	4.1
Product 5(a)	22	4.6	21.9	16.6	15.3	0.1	1.6
Product 5(b)	26	52.6	19.8	39.1	29.8	0.1	4.2
	No. of Responses	**Value**	**Delta**	**Gamma**	**Vega**	**Forward Bond**	**Implied Yield Volatility**
Product 6(a)	18	3.7	6.9	9.9	33.0	0.3	3.8
Product 6(b)	18	5.3	8.0	8.6	34.7	0.3	4.0
Product 6(c)	18	7.4	10.5	14.1	36.9	0.2	4.1
Product 6(d)	17	7.1	9.2	13.5	48.9	0.2	3.0
	No. of Responses	**Value**	**Floor**			**Implied Volatility**	
Product 7(a)	38	10.8					
Collarlet 1	38	66.1				10.2	
Collarlet 2	38	20.8				6.5	
Collarlet 3	38	22.5				5.7	
Product 7(b)	33		0.7				
	No. of Responses	**Value**	**Delta**	**Gamma**	**Vega**	**Implied Volatility**	
Product 8(a)	33	6.6	10.1	17.1	2.7	1.2	
Product 8(b)	33	11.4	11.0	11.5	5.9	1.9	
Product 8(c)	33	10.8	26.4	29.9	0.9	1.5	

Box 1 BASIC DEFINITIONS

A *call (put)* option is an option that gives the buyer the right but not the obligation to buy (sell) an underlying asset on, or sometimes before, an agreed date at an agreed price, known as the *strike* or *exercise* price.

An option is *at-the-money* if its strike is equal to the spot market price of the underlying asset. *At-the- money-forward* means the strike is equal to the current forward market price of the underlying asset for the maturity date of the option.

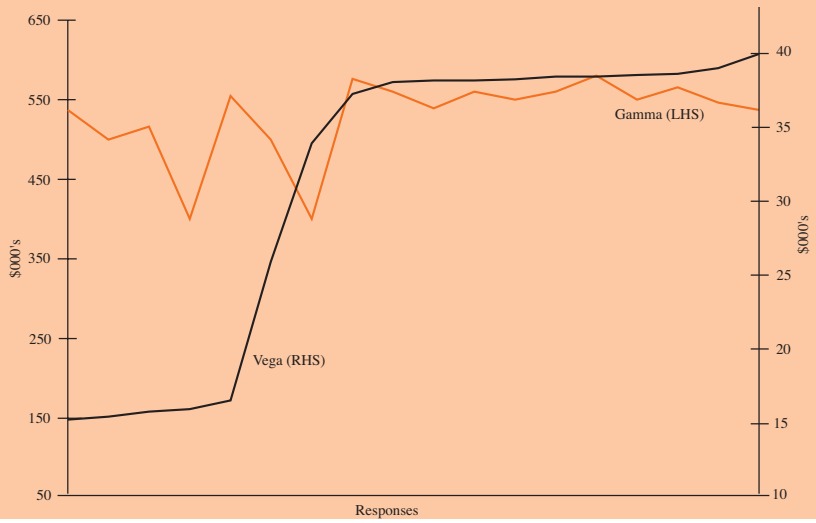
An option is *in-the-money (out-of-the-money)* if, from the buyer's perspective, its strike is more (less) favourable than the current spot or forward market price of the underlying asset.

Box 2 RISK AND RISK PARAMETERS

The *sensitivity* of an option is the measurement of the change in its value which results from a change in the price of the underlying asset, in the volatility of the underlying asset, or in any other factor determining the value of the option. Option sensitivities are also sometimes described as *risk parameters* or — because they are named after Greek letters — *Greeks*.

Delta is the sensitivity which describes the rate of change of an option's value with respect to a change in the price of the underlying. *Gamma* describes the rate of change of an option's delta with respect to a change in the price of the underlying asset. *Vega* gives the rate of change of an option's value with respect to a change in the volatility of the underlying asset.

Chart 1 US TREASURY BOND OPTION GAMMA AND VEGA



option. Part of the reason for this is that volatilities for away-from-the-money positions, or less commonly traded products, may not be readily available, and consequently many banks may have had little choice but to use at-the-money volatilities for revaluing their positions on a daily basis, regardless of whether the option is in or out-of-the-money.

However, it is important in these circumstances that such institutions regularly (say, on a monthly basis) attempt a fully independent and accurate valuation, which reflects the fact that volatilities away-from-the-money are not necessarily identical to those at-the-money, and ensures any valuation errors are not excessive.

Consistent with the view that volatility smiles are less prevalent in interest-rate markets, there was less evidence of different volatilities being used for away-from-the-money options in the interest-rate products. In bond options (product 6) there was no clear consensus on the existence or shape of a volatility smile.

In the swaptions (product 8), the product specifications were not set up to enable analysis of the volatility smile. The survey results did, however, show reasonably systematic evidence of a term structure of volatilities being used, as all 33 respondents to these products used a higher volatility for the one-year option on a 10-year swap (product 8(a)) than for the three-month option on a 10-year swap (product 8(b)).

"The Greeks"

The key means of managing option portfolios is by way of sensitivities (eg delta, gamma and vega; see Box 2). By using these measures to guide hedging strategies, banks attempt to limit their risks to acceptable levels. However, the survey highlighted quite stark differences in estimated *Greek* sensitivities between respondents.

In the foreign exchange products, further discussion with some of the participants revealed that these differences reflected the methods used to calculate the sensitivities. Some participants had calculated their sensitivities using the partial derivatives of the option pricing equation. Others, however, calculated their sensitivity measures by revaluing the option fully for a given shift in the relevant parameter, eg valuing an option using a volatility of 7 per cent, and then valuing the same option again using a volatility of 8 per cent, with the change in value taken to be the vega sensitivity. Particularly for the more exotic products, these two methods produced outcomes which diverged significantly.

In product 4, for example, a number of banks used the "revaluation" method to calculate their vega exposures, while another group of banks used partial derivatives. Within each group the results were broadly consistent, but the group using partial derivatives tended to report a figure about one third higher than the banks using the revaluation method. The size of this difference appears to stem from the complexities of the particular product involved: the pay-off function contains discontinuities which can cause sensitivity measures to change rapidly over a small range of inputs.

Turning to the interest-rate products, the measurement of sensitivities in the sterling interest rate collar (product 7) was based on a wide range of methodologies. This made analysis difficult, because it did not prove possible to convert them into standard form.

Approaches to the measurement of sensitivities in the swaption product (product 8) were more standardised, although for some banks — which quoted delta as a percentage of the hedging swap — it was necessary to translate their reported delta and gamma into "sensitivity equivalents" to enable comparison with the majority of respondents. This translation did introduce some estimation error into the summary statistics for delta and gamma on all the swaption products.

An interesting result emerged in the calculation of vega numbers in the bond option products (product 6) where in all four products a bimodal distribution was apparent (see Chart 1). It is likely that this pattern resulted from some respondents' definition of vega as the change in option value arising from a change in the bond yield volatility rather than from a change in bond price volatility as requested in the product specification. It is also possible, however, that the pattern was related to the model being used. Either way it is worth noting that the high degree of variation in vega exposures, represented by a reported standard deviation in excess of 30 per cent for all four bond option products, is probably excessive.

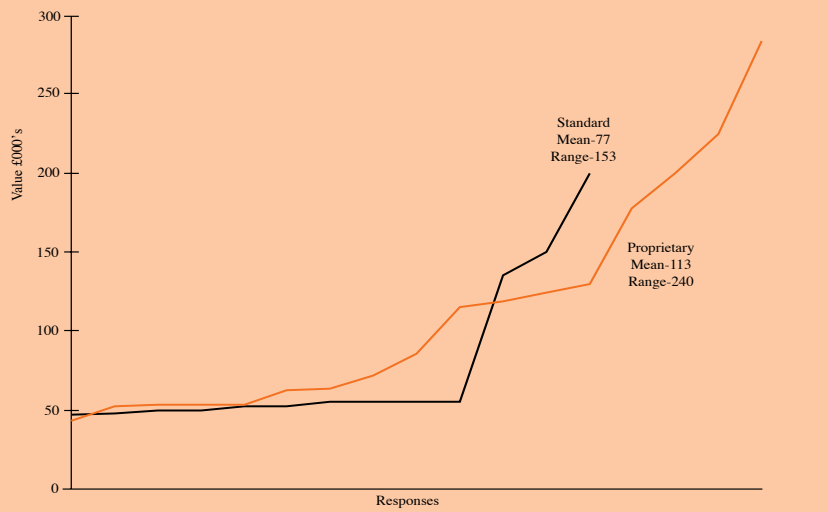
All these findings reaffirm the need for precision and care in the definition of *Greek* sensitivities, because although the *Greeks* are often assumed to have universal definitions there can be legitimate alternative definitions which do not necessarily accord with common market practice. This requires that banks take great care with their measurement systems, understand each method clearly, and analyse carefully the extent to which hedging positions will protect against both small and large movements in the underlying instrument.

Table 3 LIQUID AND ILLIQUID VARIANTS

Std Deviation	Value	Delta	Gamma	Vega
Product 1(a)	2.7%	5.3%	3.5%	0.4%
Product 2(a)	7.3%	9.1%	8.3%	0.9%
Product 6(a)	3.7%	6.9%	9.9%	33.0%
Product 6(c)	7.4%	10.5%	14.1%	36.9%

Chart 2 **FX DOUBLE BARRIER OPTION: STANDARD v PROPRIETARY MODELS**

Chart 3 **FX NO-TOUCH DIGITAL OPTION: STANDARD v PROPRIETARY MODELS**



Box 3 **VOLATILITY DEFINITIONS**

Volatility measures variability in price of an underlying asset, represented by the annualised standard deviation of the natural log of the ratio of two successive prices. *Implied volatility* is the value of volatility which is implied by a given option price. The *volatility smile* depicts the graph of the implied volatility of an option against different strike prices for a given maturity, often giving rise to a smile-shaped curve. The *term structure of volatility* is the curve describing the implied volatility of at-the-money options with different maturities.

It is also important, especially where models are being used to generate capital requirements, that supervisors understand the implications of each particular method and ensure that each bank is using a single method consistently over time.

Appropriateness of models

One interesting feature of the latest survey was a much higher response rate than in the first survey on the more exotic products (in particular products 3, 4 and 5). This reflects the rapid growth in these products in the past year or so, when relatively low volatility in foreign exchange markets has led market participants to seek new and innovative structures appropriate to such an environment.

As a result, barrier and digital option structures have become increasingly commonplace. Less than 20 respondents to the 1995 survey valued the barrier option, while 33 participants attempted in 1996. Similarly, the double barrier and digital options included in the latest survey were valued by 30 and 22 institutions, respectively, suggesting these markets are becoming increasingly competitive.

One distinction to emerge in the survey results for these exotic products was between those banks that used standard industry software, and those that had developed their own proprietary valuation models.

Charts 2 & 3 highlight this issue. A large number of partici-

Box 4 OPTION PRODUCTS

Whereas a *vanilla* option is the broad term used to describe a standard option, an *exotic* option is an option that is non-standard in terms of its pay-off, its underlying asset, exercise price or expiry conditions. Some types of "exotic" — for example some foreign exchange barrier options — are now so widely traded that they are regarded by the market as "vanilla" options, but for the purposes of this article any option with a non-standard pay-off function, eg a barrier option, is defined as "exotic".

Buying (selling) a *straddle* involves the simultaneous purchase (sale) of a put and a call with the same strike and same maturity.

A *barrier* option describes the broad class of option which is activated (*knocked in*) or terminated (*knocked out*) only when the relevant spot price reaches an agreed trigger level or "barrier" between inception of the option and maturity. A *reverse barrier* describes a barrier option whose intrinsic value increases as the spot price moves towards the barrier level. A *double barrier* option is a barrier option with two barriers, one either side of the current spot rate.

A *digital* or *binary* option describes the broad class of option which has either a fixed pay-off or a zero pay-off depending on particular pre-agreed conditions. The basic *at-maturity* digital has a fixed or zero pay-off depending on the position of spot *vis-à-vis* a pre-specified trigger at maturity. Common variants are the one-touch, in which pay-off occurs if spot reaches the trigger at any time between inception and maturity, and the *no-touch*, in which pay-off occurs only if spot does not reach the trigger between inception and maturity.

A *cap* guarantees that the interest rate on a particular investment at any given time will be the lesser of the prevailing interest rate and the cap rate. A *floor* places a lower limit on the interest rate that will be applied. A *collar* is a combination of a *cap* and a *floor*, and specifies both an upper and lower limit for the rates that will be applied. Collars may be applied for a number of interest periods: a collar for a single period is called a collarlet.

A *swaption* is an option on an interest rate swap, which gives the buyer the right to enter into a pre-specified interest rate swap at a pre-specified time and according to given terms and conditions.

pants used standard software packages for these products, and produced a broadly similar group of results. However, institutions using their own internally-developed models produced a more disparate range of responses.

Which values are "correct" is, of course, a matter of opinion.[12] It is widely known that the values produced by some standard packages, in their current form, can differ considerably from the prices at which deals are conducted in the market.[13]

But, it also appears from the disparate nature of some of the survey results that a large number of models — including some proprietary models — are not producing "correct" values against the criterion that model values should be reasonably representative of actual prices in the market. This may be because the models in question do not take sufficient account of the (two-dimensional) volatility smile, or the (three dimensional) volatility surface.[14]

One related concern for the Bank which emerged from the survey was the apparent "black box" mentality that seemed to exist in some institutions, ie the acceptance of the output of option pricing models without any intuitive feel for its reasonableness.

One example of this mentality was the reluctance by a number of banks to respond to product 5(a), on the basis that this product was not handled by standard pricing software. However, the product was one that could be constructed using a combination of other options which the software could handle. This suggested a reluctance to rely on knowledge and understanding of the products involved, and an undue reliance on computer models to provide the answers.

This analysis raises a number of important issues for institutions trading more exotic products. These include the need to ensure that staff in the back office and other support functions have the ability to use and understand more sophisticated

models (which are often developed and located in the front office) as well as the "standard" models with which they are likely to be more familiar; and the need to ensure that valuations which are used for risk control, management reporting and statutory accounting purposes are both accurate and consistent with the front office valuations of these products.

Liquidity

Among foreign exchange options, product 2 was chosen to enable analysis of the impact, if any, the liquidity of the underlying instrument had on valuation (one possible implication of lower liquidity being an increased difficulty in collecting accurate inputs for option models). The Swiss franc/Japanese yen was chosen as being significantly less traded than sterling/D-mark, even though both the yen and the Swiss franc are well traded currencies in their own right.

Among the interest-rate products side, the specification of the bond option products (product 6) also enabled some analysis of the impact of the liquidity of the underlying instrument on the option price. The underlying bond selected for product 6(a) was the current "on the run" 10-year bond issued by the US Treasury, whereas product 6(c) was a much more illiquid 10-year bond.

Consistent with the *a priori* assumption in both cases, banks appear to have had more difficulty valuing the options with less liquidity in the underlying asset. Table 3 summarises the variation between liquid and illiquid variants of the two products. In both cases this appeared to be the result of a much reduced consensus on the appropriate volatility input for the particular option.

As a general observation it is worth noting that the option on the illiquid bond (product 6(c)) displayed higher variation in value, delta and gamma than any of the other three bond options in the survey.

> The survey has improved supervisors' awareness of some of the more complex option products

Supervisory lessons

The findings of the survey are expected to be of relevance both to the day-to-day supervision of individual banks and to broader policy.

Individual banks

The Bank of England has already questioned directly those banks whose responses were identifiably "outliers" compared with other respondents to the survey. These banks fell into a number of categories:

- A few banks were infrequent participants in the markets in which some of the products were traded, were not closely in touch with those markets, and consequently had used volatilities which were out of line with those used by the majority of respondents.
  This raises issues about the extent of coverage of CAD model recognition for the banks in question (ie whether the coverage of model recognition should be redefined to include only a selected number of liquid currency pairs).
- One bank, throughout the range of survey products, calculated its vega exposure using a different method to other survey participants (and different to that requested in the survey specifications). As a consequence, the bank's reported vega exposures were different to those of all other participants by an order of magnitude.
  The Bank of England's follow-up raised questions over the bank's CAD capital calculations for vega risk. Discussions on this subject with the bank in question are continuing.
- In another case, one bank's approach to the valuation of the bond option product (product 6) was flawed in two respects: the approach was excessively

simplistic (in that the bank had used the same price volatility for all four variants of the product); and the volatility used was not consistent with those used by other respondents. Again in this case the terms of model recognition for the bank in question are being reviewed.

- One bank's initial valuation of the sterling collar (product 7) was clearly out of line with those provided by the other survey participants, although neither the input data used, nor the risk parameters resulting from the valuation, were similarly out of line. The bank was not able to identify the reasons for the apparent mis-valuation, and hence the result was allowed to stand.

  The Bank of England questioned the risk-management staff involved, and the reasons for the problem have been identified. Again, the implications for the bank's model recognition are being assessed.

For every product there were a large number of consistent results which fell within a relatively narrow range. In some individual cases, however, the Bank of England had prior information (for example, arising from Section 39 reports, from Traded Markets Team visits, or from specific losses in particular option portfolios) which suggested *a priori* that these banks had problems with their pricing or risk management models and consequently their results might not be close to the average. For these banks, the Bank of England drew some comfort in cases where the results turned out to be more consistent than expected, although clearly the results of the survey are not conclusive evidence of prior problems having been fully corrected. Consequently the Bank of England has continued to keep a close watching brief on all banks which fall into this category.

Technical and practical issues emerged from the results ... particularly with respect to model recognition

Unfortunately, a few respondents took a less professional and thorough approach to the completion of the survey than the Bank of England expected. This manifested itself in a number of ways:

- allocation of the survey response to staff who had insufficient knowledge of the products, the valuation methods, and/or the risk parameters associated with those products.
- an inability to answer follow-up questions, usually due to a lack of documentation, often compounded by staff turnover.
- an inability to replicate initial submissions, or to find details of the input data used.

These problems resulted in many of the respondents' values and risk parameters having to be re-estimated, or where follow-up revaluations proved impossible, excluded completely from the survey output. The Bank is in the process of reviewing the appropriateness of model recognition for banks where problems of this kind became apparent.

Broader implications

A number of the technical and practical issues which emerged from the results may have broader implications for future policy, particularly with respect to model recognition.

One point which was reinforced by the survey results is the need for banks' procedures to make allowance for uncertainties in the valuation of option products — for example, arising from the use (or non-use) of volatility smiles and surfaces — in the same way as allowance is made for the spread between bid and offer rates, or the potential difficulty in closing out positions in illiquid markets.

Good practice would be to set aside reserves explicitly to cover such uncertainties, and the Bank is taking the opportunity to discuss with banks both their reserving policies and the level of their reserves

against model-related uncertainties of this kind. Another broad policy issue which might be influenced by the findings of the Bank's survey is the framework for including options risk within a Value at Risk-type approach for the purposes of calculating market-risk capital requirements under the forthcoming Basle and CAD II market-risk regimes. An issue for banks building VaR models is their ability to capture the non-linearities and discontinuities associated with the more common option products.

A final example is the issue concerning the measurement of vega exposure. The findings of the survey reinforce the suggestion that where a bank's capital requirement for gamma and vega exposure on exotic products is based on its models output, that capital requirement might be more appropriately calculated using full revaluation rather than using the instantaneous *Greek* sensitivities derived using a partial differential equation. Again the Bank is considering the policy implications of these findings

Conclusions

The Bank received mixed feedback from survey participants as to the costs and benefits of their participation in it. Some banks — notably smaller banks and those with less resources devoted to their risk management and risk control functions — found it time-consuming and burdensome. Others — particularly the highly professional market participants and those with better-resourced risk management teams — said they found the results of the survey extremely interesting and beneficial, and were very constructive in both their approach to the completion of the survey responses and their comments on the results.

From the Bank's perspective, the three specific objectives of the survey were clearly achieved. A number of issues arising from the survey are of direct relevance either to particular institutions or to the development of future policy, and a number of these are already being incorporated into the Bank's supervisory work. Furthermore the survey has made the Bank's supervisory staff more aware of some of the practical issues associated with the valuation and risk management of the more complex option products traded in the market.

A number of technical areas worthy of further research have been identified.

The Bank of England also hopes that the results of the survey will be of broad interest to the market as a whole, and in particular that the institutions which participated obtained useful information from the feedback they received on their individual positions compared with other responses gained in the survey.■

NOTES

1 See Bank of England Quarterly Bulletin, November 1995, "The pricing of over-the-counter options", pp 375-381.
2 Model recognition under the CAD allows banks to determine their capital requirements for market risk using their own internal models, rather than a more conservative, standard methodology.
3 This differs from the previous survey, where these data were also given for some products.
4 Black, F. and M. Scholes (1973), "The Pricing of Options and Corporate Liabilities", Journal of Political Economy, 81, May/June, pp 637-654.
5 Garman, M. and S Kohlhagen (1983), "Foreign Currency Option Values", Journal of International Money and Finance, 2, December, pp 231-237.
6 Black, F. (1976), "The Pricing of Commodity Contracts", Journal of Financial Economics, 3, March, pp 167-179.
7 Black, F., Derman, E. and W. Toy (1990), "A One Factor Model of Interest Rates and its Application to Treasury Bond Options", Financial Analysts Journal, January-February, pp 33-39.
8 Hull, J. and A. White (1987), "The Pricing of Options on Assets with Stochastic Volatilities", Journal of Finance, 42, June, pp 281-300.
9 Cox, J. and S. Ross (1976), "The Valuation of Options for Alternative Stochastic Processes", Journal of Financial Economics, 3, pp 3-54.
10 Cox, J., Ross, S. and M.Rubinstein (1979), "Option Pricing: A Simplified Approach", Journal of Financial Economics, 7, October, pp 229-263.
11 Standard deviation is a statistical measure of the extent to which a set of numbers varies from its mean, expressed in a standardised form. It is defined as the square root of variance. As an example, the population of responses for product 1(a) value showed a mean $1.34m, variance $1.32bn and standard deviation $36,000 (2.7% of mean).
12 It is also worth noting that a failure to value a product accurately can also distort the sensitivity measures for that product and hence make it difficult to hedge a position accurately.
13 So far as industry standard software is concerned, these problems are now being addressed by the software suppliers, who are now developing improved valuation models for products of this kind. Whether this will reduce the variability in values observed in this survey remains to be seen.
14 The volatility surface usually refers to a three dimensional graph of the implied volatility of an option: in foreign exchange options the three-dimensions are usually volatility, time to option maturity and strike; in interest rate options the three dimensions are usually volatility, time to option maturity and time to maturity of the underlying instrument.

THE GENESIS OF REGULATION

By Victoria Robb, Bank of England

On 20 May 1997 the Chancellor announced proposals for a fundamental change in the structure of financial services regulation in the UK, with the creation of one large regulator spanning most (if not the whole) of the industry. In essence, the regulatory map is to be completely re-written. This article looks at the key changes over the past which have formed the map as it now stands and at the proposals for the new arrangements.

As in other areas of the financial services, a number of factors have influenced the evolution of banking supervision in the UK. These factors have been both industry-specific and general and have included economic developments, advances in technology and communications, and globalisation. There have also been moves to increase the protection of depositors and investors.

The supervisory regime has also been altered after collapses of, and problems with, major and minor institutions. These developments have been followed by increased formalisation of the Bank of England's supervisory role.

International developments have also played an important part in shaping the regulatory regime for banking, in particular the UK's membership of the European Community and the harmonisation of the regulatory approach that accompanied this. (The First Banking Co-ordination Directive was introduced in 1977.)

Before the introduction of the first Banking Act in 1979 there was no statutory requirement that a bank or similar deposit-taking institution be authorised to accept deposits or undertake banking business in the UK. There were disclosure requirements (Protection of Depositors Act 1963) on those institutions that advertised for deposits, including the obligation to include in their accounts prescribed information, which were examined by the Board of Trade. However, banks and discount houses were exempt from these requirements.

The Bank of England Act 1946 gave the Bank powers to "request information from and make recommendations to bankers" and, if authorised by the Treasury, to "issue directions to any banker for the purpose of securing that effect is given to any such request or recommendation". No such directions were ever issued.

The Bank's main concern was with those institutions with which it had a counterparty relationship in its dealings in the bill market — ie the accepting houses (the merchant banks whose acceptances the Bank was prepared to discount) and the discount houses (through which the Bank provided liquidity to the UK banking system as a whole). These institutions were required to attend regular meetings with the Bank: supervision was undertaken by a small number of staff in the Bank's discount office.

The 1960s was a period of major structural change in the UK banking system. The favourable economic conditions of the 1950s and early 1960s, together with the expansion of the consumer credit

industry, encouraged the emergence of a secondary banking sector. Until Competition and Credit Control was introduced in 1971, these institutions were outside the credit control regime which was applied to the banking system.

A significant development at this time was the rapid growth of new and important markets — in particular the wholesale money market, the inter-bank market and the CD (certificates of deposit) markets in sterling and dollars.

Fringe financial institutions were increasingly able to attract large amounts of wholesale deposits (mainly at short maturities) and expand their balance sheets, without having established customer relationships. Risks arose, both interest rate and funding, where these banks had mismatched the maturities of their assets and liabilities.

The first signs of problems in the financial system emerged in November 1973 when London and County Securities found itself in liquidity difficulties, being unable to renew deposits taken through the money markets. Interest rates had reached double figures to combat the rapid growth in the money supply between 1971 and 1973, which put pressure on the fringe banks' profit margins.

Soon a number of these banks were in difficulties. The Bank judged that, for the maintenance of systemic stability, a group of fringe (secondary) banks that had liquidity (as opposed to solvency) difficulties should be rescued. Hence the launch of the "Lifeboat" using the Bank's own funds and funds from the clearing banks.

Lessons drawn from the crisis included the need for greater supervision, particularly of the secondary banks; a tighter definition of what constituted a "bank"; and greater deposit protection. It was also recognised that the system of multiple bank recognitions was a source of confusion in the marketplace and led to gaps in supervision.

During 1974, the Bank identified most of the large companies registered in the UK which held sizeable deposits from the public. These companies were invited to submit themselves to voluntary supervision by the Bank. By 1975 all banks and other deposit-taking companies of significance had agreed to be subject to prudential supervision by the Bank.

A new department in the Bank was set up in 1974 with more staff. In 1975, the government announced that the enhanced system of supervision that the Bank of England had put in place would be confirmed in statute. A White Paper was published in 1976. It acknowledged the need to preserve the Bank's existing approach to supervising the primary banks — an approach which could be adapted to the changing circumstances of the banks and the markets.

Several other factors also led to a review of the scope of banking supervision. The UK entered then European Economic Community in 1973, and played a leading role in the discussions on harmonising banking regulation. These resulted

Box 1 STATUS OF A BANKING INSTITUTION (PRE-1979)

The status of a banking institution was based in practice on what became known as "ladder of recognitions", depending on its position under various statutes.

1 Authorised status under the Exchange Control Act 1947 — the Bank and the Treasury were responsible for establishing a list of banks authorised to deal in foreign exchange. This was regarded as the highest accolade a bank could attain.
2 Companies Act 1948 exemption from disclosure of certain information in company accounts.
3 Exemptions from the Protection of Depositors Act 1963 restrictions on advertising for deposits.
4 Companies Act 1967, section 123 certificate — issued by the Board of Trade to institutions it considered to be *bona fide* carrying on the business of banking. This certificate secured exemption from the Moneylenders Acts.
5 Recognition under Income and Corporation Taxes Act 1970 — granted by the Inland Revenue to bona fide banking businesses allowing them to pay and receive interest gross of tax.

Some of the "lesser" recognitions only required decisions about the type of business carried on (eg section 123 certificates) rather than fitness and properness and soundness of the institution.

in the First Banking Co-ordination Directive (1977) which introduced the requirement that there should be a prior authorisation procedure for credit institutions, along with minimum criteria for the authorisation of a credit institution.

The number of overseas banks that opened subsidiaries or branches in the UK rose sharply during the 1970s; and with the development of the wholesale market, banks had become far more interdependent. In response to these changes and the need to implement the EC First Banking Co-ordination Directive, the UK introduced the first Banking Act.

The 1979 Banking Act did not alter fundamentally the previous supervisory arrangements, but it did introduce a system of legal powers and sanctions available to the Bank to underpin its supervision of the banking sector. It also introduced a two-tier system of authorisation which distinguished recognised banks from licensed institutions: this was based on track-record, standing and range of activities. Recognised banks were not subject to such a wide range of statutory requirements as licensed deposit-takers. The first depositors' protection scheme was also introduced.

By the early 1980s banking business was no longer just about accepting deposits and making loan advances. Market and technical innovations were leading banks to use more complex instruments to manage their balance sheets. These developments, and the collapse of Johnson Matthey Bankers (JMB) in 1984 — precipitated by two large exposures that went bad, although the underlying problem was one of poor systems and controls — led to another review of the regulatory regime for banks.

Robin Leigh-Pemberton (now Lord Kingsdown). Recommended that the two-tier system of authorisation be replaced

Johnson Matthey Bankers was authorised under the 1979 Banking Act as a "recognised bank". Its collapse highlighted the problems of making a distinction between recognised banks and licensed deposit-takers. In December 1984, the Chancellor of the Exchequer and the Governor of the Bank of England agreed that a committee should be established, the Leigh-Pemberton Committee, to consider the system for supervising banks.

This found that JMB's status as a "recognised bank" had been a factor in the supervisors' delay in becoming aware of, and reacting to, its growing problems. It recommended that the two-tier system of authorisation be replaced by a single authorisation to take deposits, and that all the powers given to the Bank should apply to every authorised institutions.

A White Paper on Banking Supervision, released in December 1985, proposed new legislation which would provide a Board of Banking Supervision to assist the Governor in his banking supervision responsibilities. It would replace the two-tier system of regulation and encourage increased co-operation between supervisors and auditors.

It is worth noting that the paper reported the government had considered establishing a specialist banking inspectorate, but concluded that it would be more effective to strengthen the Bank's existing statutory powers and resources.

The paper also set out thoughts on the role and aims of the banking supervisor. The supervisor was "to ensure that the bank is managed in such a way as not to put at undue risk the interest of depositors, with that institution or more generally".

The result was a new Banking Act. The 1987 Banking Act did not alter the general approach to regulation which had been set out in the 1979 Act (apart from removing the two tiers of authorisation). The criteria for authorisation were set out in general terms. These allowed

the Bank flexibility in determining what was appropriate for each institution. The Bank's powers to investigate and to seek information were enhanced substantially, as were the notification requirements applicable to authorised institutions.

The Bank's supervision was intensified. It continued to be based on regular discussions with management on the information contained in the prudential forms, but the Bank also sent out teams to review authorised institutions' systems and controls and obtain more detailed information on their business.

The Bank could, under section 39 of the Act, require an institution to commission a report by accountants on its systems and controls and on areas of business of particular concern to the Bank. The 1987 Act was, in fact, a watershed, with a move towards a much a sharper focus on the adequacy of banks' systems and controls.

One of the main purposes of establishing a Board of Banking Supervision was to bring outside expertise to bear on the Bank's supervisory decisions. The independent members of the Board (a majority) had a duty to give advice to the *ex-officio* members on supervisory matters arising out of the exercise by the Bank of its functions under the Banking Act. The Board was required to prepare an annual report, to be included in the report made by the Bank to the Chancellor on its activities under the Banking Act each financial year. The Chancellor also had to be informed of circumstances in which the *ex-officio* members chose not to follow the advice of the independent members.

Since the 1987 Act, the Bank's approach to supervision has been further refined as a result of the high-profile closure of the Bank of Credit and Commerce International (BCCI) in 1991, and more recently, the problems at Barings in 1995. These cases reflected further changes taking place to the form and structure of banking business.

Following the "Big Bang" in 1986, most of the leading Stock Exchange member firms were bought by UK merchant or clearing banks, or by overseas commercial or investment banks. This started the trend towards the formation of financial conglomerates. Increasingly UK banks sought to have an international presence to compete

Box 2 **KEY DEVELOPMENTS IN BANKING SUPERVISION**

	Pre-1979 Banking Act:	1979 Banking Act:	1987 Banking Act:
Legislative Framework	Informal regime. Bank had some powers under the Bank of England Act 1946 to request information and make recommendations to bankers.	Introduced prior authorisation procedure and minimum criteria for authorisation. Also two-tier system of authorisation; recognised banks and licensed institutions.	A Board of Banking Supervision was established and the two-tier system of authorisation abolished. Bank's information and investigation powers were strengthened.
Key Industry Developments	Emergence of a secondary banking sector and the fringe banks crisis of 1973/4. Those banks holding sizeable deposits from the public invited to submit themselves to voluntary supervision by the Bank.	Banking business becoming more complex as a result of market and technical innovation. Collapse of JMB in 1984 led to review of supervisory regime. Government White Paper published in 1985.	Increasing globalisation of financial institutions and the formation of financial conglomerates. Closure of BCCI (international bank with complex structure) in 1991 and collapse of Barings in 1995 triggered further reviews of supervision.

with US and Japanese banking firms. The development of the derivatives markets provided the banks with new ways to manage their risks.

BCCI and new challenges

The international nature of BCCI's business, the opacity of its group structure and the history of fraud and false accounting that was uncovered, raised new supervisory challenges both domestically and internationally.

After BCCI had been closed in 1991, Sir Thomas Bingham was appointed by the Chancellor of the Exchequer and the Governor of the Bank of England to inquire into the supervision of BCCI under the Banking Act. He concluded that whilst there was no need for a radical change in the basic system of supervision, the Bank should be more alert to suspect banks and evidence of fraud, and that banking structures which could potentially stop supervisors from having a clear understanding of an institution's business should not be permitted.

In response, the Bank set up a new Special Investigations Unit to pursue any indications it received of fraud or criminal activity. In the EU the problems raised by BCCI were addressed by the Post-BCCI Directive (1995). This required supervisors to refuse applications from, or to revoke authorisations of, those institutions whose structures or close links with others prevented effective supervision. The directive widened the gateways for sharing confidential supervisory information and required auditors to disclose to supervisors any material concerns about a bank that affected its continuing authorisation.

The collapse of Barings, followed large losses on futures and options trading by its Singapore subsidiary. This led to a review by the Board of Banking Supervision, at the instigation of the Chancellor of the Exchequer in March 1995, into the way in which the Bank supervised banking groups, particularly those which contained significant non-banking businesses.

The Board recommended that the Bank should seek a better understanding of the risks, and their management and control, in any group which contained an authorised bank. It also recommended that there should be an independent quality assurance review of the Bank's supervision of banks.

In October 1995, the Bank appointed Arthur Andersen and Co to look at the effectiveness of its supervision activities within the current legislative framework. Arthur Andersen reported in July 1996 and the Bank decided to implement all the proposals in its report. A key proposal was the adoption of a risk-assessment process (RATE) which would focus supervisory effort on higher-risk firms.

From its inception, banking supervision focused on the prudential supervision of banks and did not encompass the conduct of banking business. The regulation of financial

Big Bang started the trend towards the formation of financial conglomerates: in the UK these were dominated by banking institutions

Share pushing and share hawking — advertising investments for sale using unrealistic claims, trying to sell investments to individuals using false representations and improper sales techniques, or exploiting positions of trust — were prevalent

services, on the other hand, is more complex in nature, as it encompasses prudential requirements for non-bank and non-insurance investment businesses, and supervisors typically focused more on business conduct.

Before the Financial Services Act was introduced in 1986 there was no legislation in the UK which regulated comprehensively all areas of investment business. The legislation that did exist had been enacted piecemeal to deal with particular investment activities, or types of firm that were seen to warrant regulation.

Financial services developed in the UK in parallel with the City of London. Those engaged in the financial services business made up a small homogeneous community until the Big Bang occurred in 1986 (although the Eurobond market was by then an internationally important market for London and based in the the banks). Regulation was largely in response to a number of scandals and abuses.

The first major piece of legislation to try to regulate investment activity was the Prevention of Fraud (Investments) Act 1939. It was enacted as a result of the reports of two government-appointed committees.

The first committee, headed by Sir Archibald Bodwin, looked at "operations known as share pushing and share hawking". These practices — advertising investments for sale or subscription using unrealistic claims, trying to sell investments to individuals using false representations and improper sales techniques, or exploiting positions of trust — were prevalent at the time. The second committee, headed by Sir Alan Anderson, examined fixed trusts (unit trusts as they are known today).

The key provision in the 1939 Act was the introduction of licensing requirements, which covered individuals and firms that dealt in securities. Securities included shares, debentures and units in a unit trust scheme. However, large parts of the industry which were members of bodies such as the Stock Exchange, were exempt, which created a largely self-regulatory regime.

The Board of Trade (which issued licences) was also able to declare persons and firms exempt from the requirement to hold a licence, so long as securities dealing did not form the main business activity of that institution and a greater part of their securities activities were conducted through the agency of members of the Stock Exchange.

The Board of Trade would grant exemptions only to those institutions that were deemed to be of sound financial and business reputation. Thus merchant and clearing banks, insurance companies and investment trusts were the main institutions to gain exempt status. The 1939 Act also gave the Board of Trade powers to issue conduct of business rules. The Prevention of Fraud (Investments) Act 1958 was virtually a re-enactment of the 1939 Act — the only addition was the

Box 3

THE EVOLUTION OF THE INSTITUTIONAL STRUCTURE FOR FINANCIAL SERVICES REGULATION — GOWER PROPOSALS AND BEYOND

	Government/self-standing body	Self-regulating organisations
Gower Discussion Document 1982	Department of Trade responsible for policy and overall supervision under a new Securities Act. Also responsible for the recognition and supervision of self-regulatory agencies.	Four recognised self-regulatory agencies: The Public Issues and Take-over Agency responsible for the scrutiny of all prospectuses, including primary and secondary issues and takeovers. The Stock Exchange which would continue to be the recognised manager of the activities of member firms, except insurance broking and unit trust and investment management. An agency/association with responsibility for over-the-counter markets, dealings off The Stock Exchange and investment management and advice. Unit Trust Agency responsible for all unit trusts and mutual funds.
Gower Report Part I 1984	The governmental role could be left to the DTI. If this would involve a substantial volume of day-to-day supervision, a self-standing Commission answerable to the Secretary of State should be established.	Based as far as possible on existing associations. Those which might be expected to qualify for recognition included The Stock Exchange, National Association of Security Dealers and Investment Managers, a Unit Trust Agency, the Association of Futures Dealers and Brokers, Lloyds and the certifying body for life assurance intermediaries (being explored by the Institute of Insurance Consultants and the Life Insurance Association). A number of other professional associations (lawyers, investment analysts, pension fund consultants, accountants, actuaries) would prefer members to register through their membership.
Government White Paper 1985	Legislation to confer regulatory powers on the Secretary of State which he could delegate to a Body(ies) that recognise SROs and have authority over their rules and practices. Proposed two bodies: the Securities and Investments Board, (regulation of securities and investments), and the Marketing of Investments Board, (marketing of pre-packaged investments).	Creation of self-regulating organisations which were primarily function-based.
Financial Services Act 1986	One statutory Body, (Securities and Investments Board) to which the Secretary of State for Trade could delegate powers under the Act. Responsible for oversight of the Recognised Bodies and the FSA regime more generally.	Self-Regulating Organisations recognised by the SIB (five initially). Also Recognised Professional Bodies (such as accountants and lawyers) Recognised Investment Exchanges (such as the Stock Exchange) and Recognised Clearing Houses.

power given to the Board of Trade to appoint an inspector to examine the administration of a unit trust scheme.

In the 1960s and 1970s there was a large expansion in the number of participants in the financial services market, of which only a small number were subject to the Prevention of Fraud (Investments) Act 1958.

In 1974 the Department of Trade and Industry (DTI) conducted a review of the adequacy of regulation of the securities market. After this review the government proposed to amend the Act to tighten up the system for granting licences, to reduce the number of exemptions and to confine them to banks and insurance companies. In the event, the proposed changes were delayed because of a change in government.

In the 1970s, two new supervisory-type bodies were established: the Joint Review Body (in 1977), which was responsible for the general oversight of all aspects of securities market supervision and was made up from senior officials of the Bank of England and the Board of Trade; and the Council for the Securities Industry which was responsible for the non-statutory aspects of supervision of the securities markets not covered by the Stock Exchange. (Its chairman and deputy chairman were appointed by the Bank of England.)

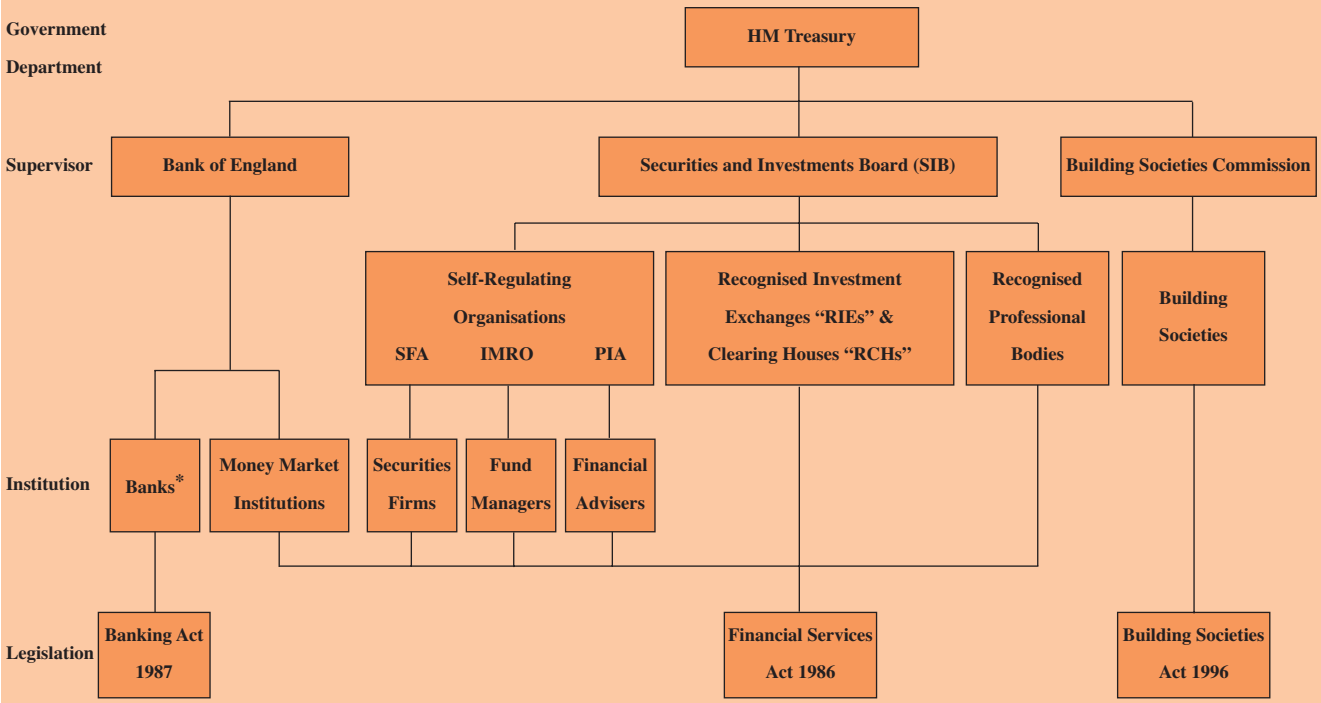
In 1977 a committee headed by Harold Wilson (later Sir Harold) was appointed to enquire into the role and functioning of financial institutions and consider what , if any, changes were required in the arrangements to supervise these institutions.

The committee's report, published in 1981, observed that at that time there was no single authority with clearly defined responsibility for the overall regulation of the financial system, statutory and non-statutory.

It proposed that a single review body should keep the regulation of all parts of the financial system under regular review. This body would not be involved in day-to-day

Box 4

THE UK REGULATORY STRUCTURE

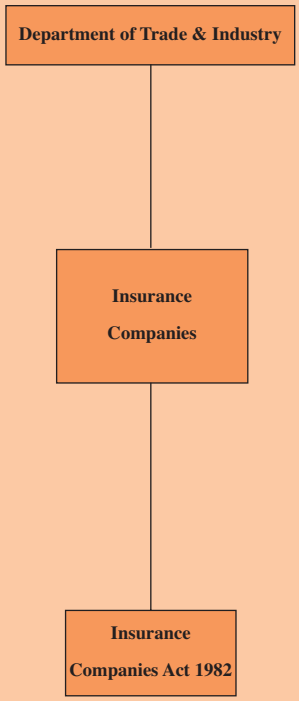


* Also regulated under the Financial Services Act for their investment business activities.

regulation (this responsibility would remain with existing bodies) nor in the formation of legislation, which would remain the responsibility of government departments and Parliament.

During the late 1970s and early 1980s pressure for change in the regulatory system grew. There were several reasons:

- The securities industry had become international and the lifting of exchange control in 1979 had made it easier for UK securities to be traded abroad and for foreign shares and funds to be traded in London.
- In response to competition from overseas counterparts, traditional City specialist firms began to merge forming integrated financial services businesses. The anticipation that the Stock Exchange would eventually allow dual capacity trading accelerated this process.
- Technology was transforming the way business was conducted: market information could be transmitted world-wide round the clock.
- The number of people directly investing in shares fell substantially, in favour of investments such as unit and investment trusts. The business of managing and advising on investments grew in importance.
- The development of new products such as commodity futures funds led to gaps in coverage, as such funds were not classed as securities under the Prevention of Fraud (Investments) Act.



Early resistance by the industry to a move away from the largely self-regulatory system was diluted by several scandals. Two of the more prominent were the collapse of Norton Warburg in February 1981 and the investigation into the behaviour of senior executives at Halliday Simpson between 1978 and 1983.

Norton Warburg, an investment management firm, misused clients' money and its failure led to losses of large sums by individual investors. Halliday Simpson, a regional stockbroker, abused its position as broker by buying shares for resale to clients for its own profit.

Self-regulation ... involves something more than trusting people to behave themselves. Professor Jim Gower. *Review of Investor Protection, A Discussion Document* (HMSO January 1982)

Early resistance by the industry to a move away from the largely self-regulatory system was diluted by several scandals

Regulation must stimulate competition and innovation ... the system must inspire confidence in issuers and investors ... and have the resilience not to be over-run by events

These cases reinforced concern that the current regime for investor protection was inadequate.

The government realised that to achieve its goal of increased public participation in the market, public confidence in the security of investments was vital, and this could be achieved only by a visible improvement in the regulatory system.

In July 1981 Professor L C B (Jim) Gower was commissioned by the Secretary of State for Trade to review investor protection. His review was to consider the statutory protection now required by private and business investors in securities and other property, including investors in unit trusts and investment trusts; the need for statutory control of dealers in securities, investment consultants and investment managers; and to advise on the need for new legislation.

His initial output was a discussion document which considered the shortcomings of the existing system and put forward proposals for comment on a possible new regime (see Box 4 The UK Regulatory Structure). He believed that regulation would operate best within a statutory framework, with day-to-day regulation undertaken by self-regulatory agencies and the government exercising a residual, supervisory role.

This was followed in January 1984 by first part of his report, "*Review of Investor Protection*". This set out recommendations for a comprehensive regulatory regime for the securities and investment industry.

Of specific concern were the marketing methods (in particular "cold-calling") used to sell insurance products that were, to all intents and purposes, investments.

The report proposed that "Investments" and "Investment Business" should be defined widely, and should include contracts for commodity, financial futures and options and life policies, that had not fallen under the scope of the Private Finance Initiative Act. It also suggested that a system be put in place for "recognising" investment exchanges (in addition to self-regulating organisations).

The main force of the report was directed at improving protection for the retail investor, with a carve-out for professional investors proposed for some of the provisions of a new regulatory regime.

The government then consulted interested parties. In May 1984, the Governor of the Bank of England appointed an advisory group of senior City figures under Sir Martin Jacomb to advise on a structure of self-regulatory groupings that would most appropriately cover all types of securities activity and would gain sufficient support from practitioners to be capable of implementation as early as possible.

Sir Martin Jacomb's advisory group recommended concentrating on an institutional structure of regulation, under a practitioner-based system.

Shortly after the appointment of Sir Martin's group, the Parliamentary

Under Secretary of State for Corporate and Consumer Affairs invited a group, chaired by Marshall Field (the chairman of the Life Offices Association) to advise on the prospects for practitioner-based regulation of the marketing of life assurance and unit trusts.

The recommendations of these advisory groups were important in shaping the government's proposals for legislation detailed in its White Paper published in January 1985. It stated the government's objectives as being: efficiency, competitiveness, confidence and flexibility. "Regulation must stimulate competition and innovation ... the system must inspire confidence in issuers and investors ... must be clear enough to guide but not cramp structural and other change ... and have the resilience not to be overrun by events."

Market forces, facilitated by adequate disclosure of information to customers and a competitive industry, were seen as providing the best means for the industry to meet the needs of its customers.

The Financial Services Bill was published in December 1985 and it concluded its progress through Parliament in 1986. It provided, for the first time, a comprehensive regulatory framework for investment business carried out in the UK. It retained practitioner involvement using self-regulating organisations (SROs), but with oversight by a statutory body, the Securities and Investments Board (SIB) giving a two-tier structure.

Nearly all firms carrying out investment business in the UK had to seek membership of an SRO and abide by its rules, or be directly regulated by the SIB. An exception was professional firms such as solicitors where investment business was ancillary to their main activities: they could be supervised by their professional association.

Criticism

The Financial Services Act regime has always been the subject of debate and criticism. In the early years criticism concentrated on the legalistic nature of the regime and the plethora of rules that firms had to follow. The second chairman of the SIB rationalised the rules by issuing 10 statements of principle backed up by a set of "core rules" established by the SIB, leaving the SROs to produce their own tailored set of detailed requirements suited to their particular membership.

More recently, the Maxwell affair and the mis-selling of home income plans and personal pensions, led to a fundamental rethink of the self-regulatory system under the Act.

Following the Maxwell affair, the new chairman of the SIB, Sir Andrew Large, was asked by the Chancellor of the Exchequer to review the way the SIB carried out its regulatory responsibilities under the Act, with particular reference to its oversight of the recognised bodies (the recognised self-regulating organisations, professional bodies and investment exchanges) for which it was responsible.

The Bank of England Bill provided a window of opportunity to transfer banking supervision to a new and strengthened Securities and Investments Board

His report, "Financial Services Regulation: Making the Two-Tier System Work", was published in May 1993. He concluded that "SIB and the regulators need to improve the system's effectiveness and confidence in it, by a more active and formal exercise of SIB's leadership and by achieving greater transparency for the system".

However, he warned "without the changes in attitude and approach ... recommended in this report [I] do not feel confident that the two-tier system will, in fact, deliver the necessary results ... This could lead to a cry for even more radical change, including perhaps for a fully statutory unitary system".

Insurance companies

The first key legislation affecting insurance companies was the Life Assurance Companies Act 1870 which was introduced in response to a number of insurance companies defaulting, culminating in the collapse of the Albert Life Assurance Company. It imposed a deposit requirement of £20,000 for insurers engaged in life business. The collapse of Fire Auto and Marine in 1966 left many policyholders unprotected. To rectify this sort of problem, the Companies Act 1967 introduced a system of prior authorisation of insurance companies: this included assessing whether the companies' officers and controllers were fit and proper and it gave the DTI intervention powers.

The collapse of the Vehicle and General in 1971, which left nearly one million policyholders uninsured, prompted a reorganisation at the DTI and an increase in the number of staff directly involved in supervision. Further powers were also given to the DTI in the Insurance Companies Amendment Act 1973. In 1974 a new Insurance Companies Act came into force which set down a stricter set of criteria for insurers to satisfy before they were granted authorisation by the Department of Trade and also consolidated previous legislation.

Sir Andrew Large: "Without the changes in attitude and approach ... recommended in this report [I] do not feel confident that the two-tier system will, in fact, deliver the necessary results ..."

Pressure increased to introduce new legislation to protect policyholders following the failure of Nation Life in 1974. The government responded by introducing a compensation scheme for policyholders through the Policyholders Protection Act 1975. The legislation currently governing insurance companies is the Insurance Companies Act 1982.

While the DTI is responsible for supervising UK insurance companies, it relies on the Government Actuary's Department for the technical, actuarial review of the annual returns of long-term companies.

Like banking supervision, insurance supervision is focused on the prudential supervision of companies, not business conduct. Sales practices for life assurance products were eventually covered by the Financial Services Act.

Building societies

In contrast to the history of regulation of banking, financial services and insurance, successive changes to the regulatory regime for building

societies have been aimed at progressively relaxing what was a relatively prescriptive regime which governed societies since the first significant building societies legislation of 1874 (in effect building societies were limited to offering mortgages funded by savings accounts).

The 1986 Building Societies Act and subsequent amendments in 1988, enabled building societies, for the first time, to offer such products as current accounts and life assurance in competition with the banks. The most recent legislation, the Building Societies Act 1996, removed most of the remaining restrictions on building societies' activities.

The future

The Labour Party made clear before the general election that it intended to reform City regulation. The current structure, it said, was both costly and bureaucratic, with too many layers.

It proposed a move from self-regulation to direct regulation by merging the self-regulating organisations under the Financial Services Act — the PIA, SFA and IMRO with the SIB. The aim would be to reduce the layers of regulation, clarify responsibility, end tensions between regulators and enable savings by reducing duplication and overheads.

On 20 May the Chancellor of the Exchequer announced reforms that were more radical than had been expected. He argued that as distinctions between financial institutions were becoming increasingly blurred, so there was a strong case in principle for bringing the regulation of banking, insurance and securities under one roof.

The regulators have embarked on an intensive work programme to ensure that the new arrangements will operate as smoothly and effectively as possible

The Bank of England Bill, which gives the Bank operational independence for monetary policy, provided the opportunity to transfer banking supervision to a new and strengthened SIB. The changes to the Financial Services Act that are necessary to give the SIB direct responsibility for the regulatory regime under the Act (by merging all of the recognised bodies with the SIB) would come into force in the next session of Parliament. The Bank will remain responsible for the overall stability of the financial system.

The DTI subsequently announced (on 23 July) that responsibility for the regulation and supervision of insurance companies would transfer to the Treasury. The final changes necessary to create a single, enhanced financial services regulatory body were announced on the same day by the Treasury: insurance supervision, together with all the functions currently carried out by the Building Societies Commission, the Friendly Societies Commission and the Central Office of the Registry of Friendly Societies, would be brought under the remit of the new regulatory body. The provisions would be included in the Financial Regulatory Reform Bill, to be published for consultation in summer 1998.

The regulators have embarked on an intensive work programme to ensure that the new arrangements will operate as smoothly and effectively as possible.■

THE PRE-COMMITMENT APPROACH TO SETTING CAPITAL REQUIREMENTS

By Patricia Jackson and Simone Varotto, Bank of England
Arupratan Daripa, Birkbeck College

This article looks at the Pre-Commitment Approach (PCA) to setting capital requirements for the securities, foreign exchange and commodities trading books of banks, which has been developed by economists in the US Federal Reserve Board (Kupiec and O'Brien[1]) and put forward as a possible alternative to the Basle Standard and Value at Risk (VaR) methodologies. Under the PCA, banks themselves would determine how much capital they needed to back their trading book and would be penalised if losses exceeded this level.

We look at how the approach would work, the reasons for its development and compare the approach to the Value at Risk methodology under which the banks' VaR models are used to set capital requirements, subject to parameters set by the regulator. Drawing on the analysis in a Bank of England discussion paper by Daripa and Varotto,[2] this work focuses, in particular, on whether the incentive effects regarding risk-taking would be different under the pre-commitment as opposed to the Value at Risk methodology for setting capital requirements.

VaR and Basle Standard

In January 1996, the European Union Capital Adequacy Directive (CAD1) laid down rules setting risk-based capital requirements for the trading books of banks and securities houses. The trading book consists of securities, foreign exchange, commodities positions and derivatives that are held for short-term trading purposes. In 1993, the Basle Supervisory Committee[3] (Basle) had proposed a similar method to setting risk-based requirements for trading books, known as the Standardised Approach. However, Basle has now agreed to offer an alternative regime with capital requirements based on the internal VaR models of the firms.

The Basle VaR method for setting capital requirements for trading books was developed largely in response to a concern on the part of large diversified players that they would, under the Standardised Approach, be carrying disproportionally more capital than specialist players in relation to the actual risk of loss. The Basle Standard Approach (and CAD1) delivers capital which covers about 99 per cent of price moves over a two week period for each market (eg UK interest rate risk). But if a firm has risks in a number of markets (say US interest rate risk, UK equity risk, US equity risk) all the separate capital figures for each type of risk are simply added together to give the overall requirement, delivering what can be an excessively large cushion of capital relative to the risks being run because the benefits of diversification across markets are not taken into account.

It is almost impossible to take diversification across different types of risk properly into account using rule-based capital requirements as this would necessitate taking into account all of the cross correlations

in returns on the different exposures. The VaR models, which some banks had developed to give senior management a consistent measure of overall portfolio risk, provided a means of achieving this. The models calculate the capital necessary to cover losses that, given the actual portfolio composition, could occur with a pre-determined frequency over a set time horizon. They take into account past correlation between the returns on the various assets in the portfolio as well as the volatility of the individual returns. Each day the firms would run their VaR model and compute the expected loss on their current portfolio. This, with additional safeguards set by the regulators, would form the basis for the capital requirement over the following 24 hours[4].

Basle proposes that the confidence interval for the model should be set at 99 per cent (ie it would calculate the loss which would not be exceeded on more than 1 per cent of occasions) and that an ex-post model validation — backtesting — should be carried out to try to check whether the models do in fact deliver this.

Basle lays down a number of other elements which help to make the result conservative. Losses are estimated for a 10 day holding period and an overriding multiplier of 3 is used to convert the VaR amount into a capital requirement, which in effect delivers a confidence interval far in excess of 99 per cent. Too many exceptions (ie dates on which the model under-forecast losses) would lead to an increase in the capital requirement based on the output of the model. This would be achieved by increasing the overriding multiplier which is used to convert the output from the models into a capital requirement.

Possible drawbacks

Although the adoption of VaR, as a methodology for setting capital requirements for trading books, enables the diversification element to be captured in a flexible and rational way, some concerns have been expressed about the approach. One of these concerns is that the setting of the parameters in the models by the regulators is too intrusive — it would be better for the firms to be permitted to decide on an appropriate model given their activities.

For example, the fixed parameters set by the requirements, such as the 10 day holding period, make no allowance for the relative sophistication and placing power of the firms which would affect the likelihood of losses. One firm might reasonably expect to trade out of a position in a few hours: for another it might be a matter of days. Whether such differences would also apply in stress conditions is, however, more open to debate.

The accuracy of VaR models depends on the correct estimation of the expected frequency of rare events, that is, losses in the portfolio exceeding a given value. The problem is that, even though the observation period might be very long, there would not be a sufficient number of such rare occurrences to allow for sensible forecasts.

By using Monte Carlo simulations, Kupiec (1995)[5] shows that in some cases, backtesting would be subject to substantial errors even in samples as large as 10 years' of daily data. Although, Jackson et al (1997)[6], in an empirical analysis based on real trading book data, show that backtesting might actually be effective in identifying inaccurate models.

The Bank for International Settlements, Basle, Switzerland. In 1993, the Basle Supervisory Committee had proposed a similar approach to setting risk-based requirements for trading books, known as the Standardised Approach. However, Basle has now agreed to offer an alternative regime with capital requirements based on the internal VaR models of the firms.

Box 1 PCA AND VAR WITHOUT AGENCY PROBLEMS

Obviously, even under PCA, banks should run a VaR-like model to forecast the future behaviour of their portfolio returns. This would help in estimating the probability of breaching the pre-committed capital and ultimately incurring a penalty.

So, even though the regulator exercised ex-post control, the problem that the bank would face, when optimising its portfolio choice, reduces to an ex-ante forecast of the pattern of future trading book yield.

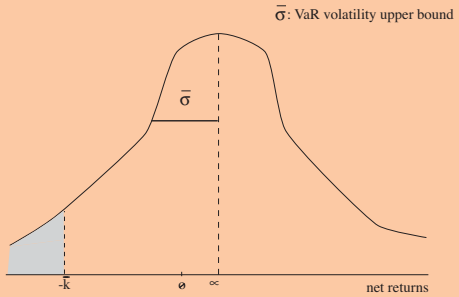
Intuitively, under PCA and in the absence of agency problems, supervisors would only need to set an appropriate penalty schedule in order to obtain the same outcome as would be produced by a VaR regulatory framework.

To describe this point, let us introduce some simplifying hypotheses. Suppose that, by using historical data, it is possible to forecast the future distribution of portfolio returns correctly. This means that, even though uncertainty still remains, a portfolio's risk and expected yield can be correctly measured in advance. It is further assumed, for illustrative purposes only, that the distribution function is normal with mean μ and standard deviation[9] σ.

In what follows, we compare VaR and PCA over a given time horizon, say a quarter, in which the trading book capital k is assumed to be constant ($k = \overline{k}$).

As a consequence, under PCA, if actual cumulative losses, at any given time in the observation period, go beyond $\overline{k}$, a penalty f will be charged. Instead, under VaR, the portfolio volatility will be upper bounded or equivalently the probability of an overall increase of future losses above $\overline{k}$ will not be allowed to top p (p is set by the regulator).

Indeed, it is indifferent if the regulator sets p or σ because, given μ, there is a one-to-one relationship between the two.

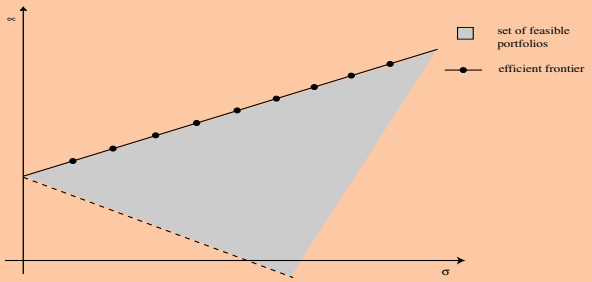


When a bank selects its trading book it can choose among a number of combinations of expected return μ and volatility σ. In a world where investors choose portfolios only according to the mean and variance of the returns, there exists a feasible set of portfolios which remunerates higher risk with higher returns[10]. The set is defined *efficient frontier*.

Pre-commitment

To address these concerns the pre-commitment approach has been suggested as an alternative to VaR. Under the PCA, a bank would specify how much capital it needed to back its trading book over a period, say the next quarter, and would be penalised, for example by a fine, if cumulative losses exceeded this figure at any time in the quarter. In other words, rather than meeting the capital requirements set by the regulator, the firm would itself decide on the amount of capital it needed to back the trading book and would be penalised if it under-estimated.

The firm would almost certainly need to have a VaR model to assess how large a portfolio it could run day-by-day given the capital amount to which it was committed. But the supervisors would not have to recognise or attempt to check the accuracy of the model, nor would they have to lay down parameters in advance for the model such as the 99 per cent confidence interval. This would constitute an enhancement in the sense that banks, by a self-assessment of the efficacy of the internal risk management system, would decide whether to be more or less conservative with respect to the output of their internal models. As a consequence, Kupiec and O'Brien (1995) believe that the threat of penalties would encourage the adoption of more comprehensive risk management procedures to take account of risk sources such as operational and legal risk. These risks could not be explicitly incorporated in ex-ante risk-based capital

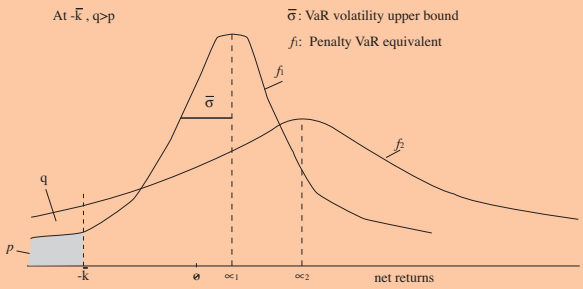


The combined effect of regulation and the cost of capital make banks' owners risk averse. In fact, regulation establishes a link between level of capital and portfolio riskiness via a priori limits to the variance (VaR) or ex-post fines (PCA).

It can reasonably be assumed that banks also select trading portfolios lying within the efficient frontier. In fact, regulation places a link between risk and capital level. It turns out that bank owners accept higher risk only if they can earn higher returns as a compensation for the cost of injecting more capital (VaR) or the potential cost due to the higher likelihood of being penalised (PCA). The following picture can help summarise this point.

Interestingly, it can be proved that if the bank owner can fully control the manager — that is there are no agency problems in the bank — there exists a penalty schedule (f_1) that permits the regulator to achieve a pre-committed level of capital consistent with that produced by a VaR framework[11].

It follows that shareholders will accept more risk only for higher yields. Banks will then allocate their resources by selecting portfolios lying in the efficient frontier. Under VaR, as capital is fixed, the level of volatility and expected return are upper bounded. Under PCA, σ can be increased without limit allowing higher returns while not changing the cost of capital. Penalties establish a link between the capital and risk. The link consists of an economic cost which increases as the capital declines and decreases as the trading book risk goes up. By using an appropriate fine schedule, it would be possible to force in a PCA world the same ex-ante level of σ as in VaR.



approaches (VaR and Standard Approach) as it would be difficult to implement a general rule for their identification and measurement.

However, the PCA has only been proposed for those banks for which trading risk is not the dominant risk. They would therefore have a large cushion of regulatory capital generated by the banking book, with the trading book requirements very much a subsidiary element. For other banks for which trading was the determinant risk, penalties would not represent a threat because losses could be close to or above the level of proprietary funds. Having nothing to lose, shareholders might be tempted to gamble for resurrection by taking huge risks.

Penalty structure

Finding an appropriate penalty mechanism is not a straightforward task. Kupiec and O'Brien (1995) suggest either capital charge penalties or monetary penalties.[7]

The application of increased future capital requirements as a penalty could be implemented either via the imposition of a compulsory capital level unrelated to the next period of pre-commitment, or through an "add-on" to future pre-commitments. The former alternative could simply mean a reversion to the standard rule-based approach — in effect, a temporary abandonment of pre-commitment for the particular firm. If the penalty was simply an add-on to the pre-committed amount, the bank could nullify the penalty either by reducing each period's pre-commitment to main-

When the breach of pre-committed capital is publicly announced, it could have a serious impact on the reputation of the bank

tain the same relationship between pre-committed capital (after the penalty) and risk, or by increasing the amount of risk taken in the trading book for a given pre-committed capital.

Therefore, although additional capital charges intuitively appeal because, on the face of it, they would require those banks that have had a breach to restore an adequate capital cushion, in practice the banks may be able to negate the effect.

Fines would be even more problematic as they would weaken an already compromised financial situation (with further complications potentially arising from adverse public reaction) without providing debt holders with any additional guarantees.

Another issue, common to both penalty structures, is that in the case of a breach, penalties should not be applied if the bank had in fact estimated capital conservatively but had been subject to extreme market conditions that could not have been anticipated.

However, to make the policy credible, supervisors would have to state clearly that the penalties would be waived only when a violation of the commitment was caused by truly extraordinary market events, resulting in widespread disruption.

Nonetheless, drawing a distinction between periods of this extreme kind and others for which a relaxation of the rule should not have been allowed, would not be straightforward.

Disclosing a breach

It is proposed that, under PCA, any breaches and penalties would be disclosed to increase market discipline. The paper by Daripa and Varotto explores the effect of public penalties for breaches on conservative banks. When the breach of pre-committed capital is publicly announced, it could have a serious impact on the reputation of the bank, which might lead to a lower future profitability. Clearly reputational effects would affect the whole bank and not simply the trading arm. This could well (where there is less than full deposit insurance) increase the cost of funding across the whole bank, which would reduce the return on the trading portfolio, and also on the banking book. This is because a PCA breach could be taken as an indication of generally poor systems and controls. Concern about reputational damage reflects the fact that:

- the extent cannot be predicted.
- it is likely to depend on the contingent economic situation, with most severe consequences in periods of market instability — ie the periods when such effects are least welcomed by regulator and regulatees.

An important point to note is that there could be asymmetry between gains and losses. Under the PCA, the bank would have a large banking book relative to the trading book. While a profit on the trading book would not be very important for the overall return of the bank, a loss on the trading book, in excess

of the pre-committed capital, could have a significant effect on the entire bank through the funding costs. This could lead banks to marginalise their trading books even further, and also to over-commit trading book capital.

The US Federal Reserve Board set in train a pilot project in October 1996, to look at the effect of using pre-commitment. Ten banks — a mixture of US and foreign banks — agreed to pre-commit to the capital they would need to back their trading book for four measurement periods.

The reports of the results for the first period highlight the problem of excessive capital commitment for high franchise value firms. The president of the New York Clearing House Association said at the end of the first period[8] that none of the banks tested had needed more capital than they had set aside, but they had taken "a very conservative approach ... They did not want their peer group or their primary regulator to know that they went through the capital ... They took it very seriously ... They saw it as a threat to their reputation".

In sum, banks with large banking books are the best candidates (from the point of view of social optimality) to bear greater trading book risks. Yet these are precisely the banks that might reduce their trading books and commit to excessive trading book capital, if the violation of pre-committed capital was publicly disclosed.

PCA compared with VaR

A key difference between VaR and pre-commitment is that the former provides a relatively hard link between the exposures which a firm is running and the capital it must hold. A firm cannot take an exposure in excess of the capital set aside, because this can be audited and the requirements must be met at all times. In contrast, with pre-commitment, the firm must take a judgement about how much capital it needs, reflecting expectations about the kind of positions it intends to undertake in view of predicted market changes and the speed with which positions can be sold.

For example, it could choose to run a very large exposure relative to the capital set aside, far in excess of the amount which would be possible under the VaR approach, on the expectation that it would be sold very quickly.

Another difference between the two approaches is that, under VaR the capital requirements can be set by the regulator at a level which would reflect the social cost of failure. In the case of default of a sizeable firm, the social costs could be higher than the private costs of failure to the shareholders, because of the magnitude of the domino effect that the failure of a big player can trigger. Under PCA, as the firm itself decides on the amount of capital to set aside, the consideration of only private costs may lead to under-capitalisation.

An interesting question is whether pre-commitment would

Shareholders may find it difficult to influence decisions other than by voting with their feet and selling their shares if they are dissatisfied with the returns

Box 2 PCA AND VAR WITH AGENCY PROBLEMS

Let us consider the following example: the bank owner and manager are risk neutral. However, the bank owner offers a risk-sensitive compensation scheme which induces the manager to behave according to any desired degree of risk aversion. The level of induced risk sensitivity is measured by the parameter *r*. According to the penalty structure set by the regulator, the principal's optimum choice of σ turns out to be, say, $\sigma_p^*=1$. In the market, there are two types of managers. This differentiation comes from the consideration that managers can be differently concerned about their reputation. Daripa and Varotto 1997 show that if the manager were interested only in remuneration the owner could write a contract that, under PCA, would reduce the risk of overtrading to VaR levels. However, the manager might well be attracted by non-pecuniary benefits such as maintaining star performer status. The importance of these benefits varies among managers, thus producing different receptiveness to contractual agreements. Then,

- type 1 is more receptive to the risk limiting incentives incorporated in the contract. Her optimum choice of portfolio volatility will be equal to:

$$\sigma_1^*(r)=\frac{1}{r}$$

- type 2 is less receptive. By maximising her pay-off function subject to the same contractual constraint, the optimum trading book volatility is given by:

$$\sigma_2^*(r)=\frac{9}{r}$$

As the bank owner has not *a priori* information he will choose an *r* such that the expected portfolio volatility ($E\sigma_p$) is exactly 1. In the optimum contract r will then be equal to 5.

Ex post, if the manager type is 1 then $\sigma_1^*(r)<\sigma_p^*$, while if it is 2, $\sigma_2^*(r)>\sigma_p^*$. So, if the principal maximises his pay-off function there will be a fair probability that the risk taken on will be very high and, probably, unsuitable for the level of trading book capital set aside. To overcome the problem, the principal might decide to be more conservative and increase the level of induced risk aversion *r*. In a mean-variance world, if an investor is willing to accept higher risk, there are opportunities of getting higher expected returns. So increasing *r* has the effect of reducing σ and, at the same time, the expected yield of the bank's trading book.

Suppose[12] $\mu=0.5\sigma$, then, in the event of a full protection strategy, the type 2 manager should produce a variance equal to 1, hence *r* would have to be set equal to 9. Full protection will then give an expected return of 0.28, while in the normal case, for expected σ equal to 1, μ would be 0.5.

PCA
OWNER'S EXPECTED AND ACTUAL PAY-OFF

	Expected pay-off		**Actual pay-off**			
			type 1 manager		*type 2 manager*	
	μ	$E\sigma_p$	μ	$\sigma_p=\sigma_1$	μ	$\sigma_p=\sigma_2$
Owner maximises pay-off r=5 ($E\sigma_p=1$)	0.5	1	0.1	0.2	0.9	1.8
Owner takes full risk protection r=9 ($\sigma_p^*\leq 1$)	0.28	0.56	0.06	0.11	0.5	1

The efficient frontier is assumed to be $\mu=0.5\sigma$

In sum, VaR guarantees full protection because the level of σ is directly constrained by the capital in place. So under VaR it is possible to achieve an *ex-ante* volatility equal to the bank owner's optimum choice $\sigma_p=1$ and a return of 0.5.

Under PCA the same constraint on the volatility level can only be obtained at the cost of a lower return: 0.28. In this circumstance, bank owners could choose to give priority to the portfolio returns and relax the initial risk limit.

It turns out that under PCA the extent of the agency problem may be a determinant of the risk-taking policy in the bank.

create the same incentives for firms in terms of risk taking as VaR. Most of the analysis of this question has assumed that the shareholders (who would bear the effect of any penalties) take the decisions about the exposures being run. In fact, for large banks with diffuse shareholding, this is not the case. The managers take the decisions about the exposures and the shareholders may find it difficult to influence these decisions other than by voting with their feet and selling their shares, after the event, if they are dissatisfied with the returns. This creates what is known in the finance literature as a principal/agent problem. The shareholders, as principal, bear the risk of the penalties whereas the managers — the agents — who may well bear much less risk, set the trading book exposures.

The paper by Daripa and Varotto explores the effect of this principal-agent problem on the incentives for the firms posed by the pre-commitment approach. The analysis shows that if the shareholders were able to determine the exposures and therefore there was no agency problem, the incentive effects of VaR and PCA would probably not differ substantially. In fact, if this were the case, in either approach the regulator could successfully bind banks to implement portfolio strategies consistent with their capital cushion (see Portfolio Strategies, Box 1). Indeed, the PCA could be more efficient. This might be the case if, for instance, under VaR supervisory agencies, in the attempt to overcome the difficulties in validating internal models and detecting banks' risk-management efficacy, set a high multiplying factor.

However, for most large banks a potential agency problem does exist. The paper by Daripa and Varotto shows that the shareholders cannot design contracts for the managers which will align the objectives of both parties. This is because the managers cannot usually be fined (ie paid negative salaries) in the event of losses. Thus decisions about trading book risk are taken by managers with limited liability while, under PCA, the owner would have to suffer the losses and pay the penalty in the case of a breach. Indeed, market pressure provides constraints in the design of a pay structure for top management or "high-flying" traders. At that level, the possibility of being sacked may not represent a real penalty as individuals may well be re-hired by another firm.

> It seems that there is not yet a completely fault-free solution as to how to impose minimum trading book capital requirements

In theory, if the principal knew his agent's preferences, the risk constraint that the imposition of PCA fines generates could simply be transferred to the manager — for instance by a risk-sensitive compensation scheme. Under these circumstances, the PCA rule would pervade the bank decision-making process and achieve the target regulatory risk limit. But this may not be the result if there is an information gap (asymmetric information) between principal and agent. Where there is asymmetric information shareholders could tailor a compensation scheme, which on average delivered the desired level of risk-taking but which would leave scope for some PCA breaches. Alternatively, they may be more conservative and penalise risky trading strategies to an extent that in no circumstance would risk be high enough to generate a significant probability of breach.

Even if the last option could guarantee full protection against regulatory penalties (breaches occur with negligible probability) its implementation would compromise

the profitability of the firm. There would effectively be no way in which the shareholders could ensure that the managers would not take excessive risk while maintaining profitability (see Box 2).

Hence, it is likely that shareholders would opt for a form of compensation that would not guarantee full protection against breaches or losses, leaving the firm open to excessive risk-taking relative to capital. For example, if the manager is more concerned with maintaining his/her star performer status than his/her monetary compensation, then PCA will fail to guarantee adequate protection against high-risk trading strategies.

In conclusion, as PCA hinges upon the way in which the owner can influence managerial choices, if there is asymmetric information about trader/management preferences, it may not be possible for the shareholders to effect a transfer of regulatory constraints to the decision makers in the firm. PCA would then fail to guarantee that a volatility upper bound, relative to capital' is actually in place.

In contrast, as VaR sets rules for generating the capital requirements it would provide the same risk limitations in all circumstances and would therefore not be affected by any agency problems within the bank.

The only other option would be for PCA to set penalties — not for the firm (and therefore for the shareholders) but for the managers. It is not clear, however, that it would be possible to do this. Managers are penalised in various regimes for failure to supervise subordinates or a lax control environment but to exact penalties from individuals for underestimating capital might exceed the bounds of natural justice.

NOTES

1 Kupiec and O'Brien (1995) "A Pre-Commitment Approach to Capital Requirements for the Market Risk". Federal Reserve Board.
2 Daripa A and Varotto S. (1997) "Agency Incentives and Reputational Distortions, a Comparison of the Effectiveness of Value-at-Risk and Pre-Commitment in Regulating Market Risk". Bank of England Divisional Paper Series.
3 Basle Committee on Banking Supervision (1993) "The Supervisory Treatment of Market Risks", April, Bank for International Settlements, Basle, Switzerland.
4 See Jackson (1995) "Risk measurement and capital requirement for banks", Bank of England Quarterly Bulletin, May.
5 See Kupiec (1995) "Techniques for verifying the accuracy of risk measurement models". The Journal of Derivatives.
6 See Jackson, Perraudin, Maude (1997) "Bank Capital and Value at Risk", Journal of Derivatives, Spring.
7 They also propose to combine monetary and capital charges in a mixed penalty structure.
8 American Banker 3/3/97.
9 Returns standard deviation is their average dispersion around the expected value. In the remainder of the paper standard deviation will be indifferently referred to as volatility and risk. Standard deviation is defined as the square root of variance.
10 See Markovitz, H. (1952) "Portfolio Selection", Journal of Finance, 7: 77-91.
11 For a discussion of this issue see Daripa and Varotto 1997.
12 This is the aforementioned efficient frontier.

There is not yet a completely fault-free solution on how to impose minimum trading book capital requirements. VaR models represent an advance on the Standard Approach but have a number of drawbacks. In particular, the fixed parameters set by the regulator do not take into account the different circumstances of different banks.

PCA represents a way of putting the onus on the firms to decide how much capital they need, given the penalty structure. This represents an important shift in paradigm with interesting implications. At present, it is very difficult to have a complete understanding of PCA's potential impact on firms' risk taking. Any development in this approach would need to deal with some key issues, namely:

- The agency problem within banks caused by information asymmetries between ownership and management.
- The difficulty of imposing capital levels consistent with public costs of failure.
- The development of an effective penalty regime.

An optimal solution could well be a framework which integrated the most attractive features of the two methodologies (VaR and PCA). It might be possible to combine both to deliver regulation that imposes a level of capital consistent with the riskiness of the positions taken while at the same time being flexible — ie permitting relatively lower requirements for firms with greater placing power and market expertise.■

REFLECTIONS ON FINANCIAL REGULATION

By Charles Goodhart and Philipp Hartmann, London School of Economics
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Many countries have experienced significant banking sector problems in the past 15 years. The main causes have been those that have traditionally attended commercial banking problems — poor credit control, connected lending, insufficient liquidity and capital, and poor internal governance. The outcome has been worse than in any similar period since the great depression of the 1930s. In most countries, especially perhaps the emerging and transitional countries, there is a need for improved external supervision to reinforce internal controls.

Given the scale, nature and costs of the financial and banking problems around much of the world, what is the rationale for financial regulation?

In contrast to, for example, public utility regulation, financial regulation is less about the control of monopoly power and more about maintaining systemic stability (a question of risk allocation) and consumer protection. While clearing and settlements systems for financial transactions incorporate network effects with certain natural monopoly properties, most of the financial industry is operating in extremely competitive conditions.

We divide customer protection into two aspects: prudential regulation and the conduct of business regulation. Prudential regulation aims at avoiding institutions' failures with adverse consequences for individual retail depositors, whose informational disadvantages lessen their ability to look after their own interests. Conduct of business regulation aims at business functions and how (solvent) firms conduct business with their customers. Again, this mainly concerns the retail sector, while the wholesale sector may be largely governed by codes of conduct among the professionals themselves.

Systemic issues

The systemic, though not the prudential, dimension to regulation occurs when the social costs of the failure of a financial institution (particularly a bank) exceed the private costs and such potential social costs are not incorporated in the decision-making of the firm.

However, systemic issues do not relate to all institutions. The key point is that banks are subject to potentially contagious deposit runs which can cause otherwise solvent banks to become insolvent. This is primarily because a large proportion of the assets, whose value is based on inside information, are not easily marketable, while a big part of the liabilities (usually deposits with a fixed guaranteed value) can be withdrawn almost instantaneously.

Moreover, banks are also special because of their pivotal position in clearing and payments systems, which provide the market infrastructure through which systemic shocks can be transmitted.

Some analysts challenge the basic premise that banks are prone to runs, or argue that improvements in payments systems technology,

such as netting arrangements and real-time gross settlement (RTGS) can deal effectively with any systemic hazards.

However, there is a particular dimension to the debate that is worth noting: the risk versus the seriousness of the issue. The probability of the failure of a single bank inducing a systemic problem may be low but, if such systemic failure were to occur, it would be very serious and the cost would be high. Thus, regulation to prevent systemic problems may be viewed as an insurance premium against a low-probability occurrence.

In general, the requirement for systemic regulation is less evident for securities firms or insurance companies than for banks. They do not play a comparable role in the payments system, their assets are less opaque and largely marketable and their funding is not based on cash deposits, which can be quickly withdrawn. Even so, securities and insurance firms may under some circumstances pose systemic threats. One obvious case is the potential impact on banks when securities operations represent part of the banking group. Even if a firewall arrangement establishes a legal independence, the default of a bank's subsidiary would inevitably damage its own credit standing.

Need for reform

The degradation of the dividing lines between commercial and investment banks and, to a lesser extent, the coming together of banks and insurance companies in industrial countries, have transformed the task of external financial regulation. Another dimension of greater institutional complexity is the geographic diversification of major banks, which are now active in all the main financial centres and markets worldwide.

New and increasingly sophisticated financial instruments and techniques of risk management make the task of external regulation and supervision much more difficult

Finally, new and increasingly sophisticated financial instruments and techniques of risk management make the task of external regulation and supervision of financial institutions much more difficult.

For example, securitisation techniques and derivatives instruments shift many risks off balance sheet, which makes the use of traditional, occasional accounting data of less use as a reliable guide to the banks' state of health. This process is likely to continue in the future with the further evolution of new markets, such as that for credit derivatives.

Credit derivatives make default risk tradable and might therefore render the traditional regulatory distinction between banks' trading and banking books obsolete.

While Value-at-Risk (VaR) models for market risks have already found their way into the 1996 amendment for market risks of the Basle Capital Accord, more sophisticated quantitative risk management models for credit risk might well have to be considered by regulators in coming years, if market participants succeed in overcoming the lack of comprehensive data on defaults and loan recovery rates.

For all these reasons external regulation, both in its regulatory mode of seeking to lay down, *ex cathedra*, common rules and ratios that all banks should follow, and in a supervisory-monitoring mode of checking whether banks are complying with such rules, is becoming less effective and less feasible.

The Barings' failure produced a standard reaction among (less informed) observers that supervision needed to be increased and improved. However, among the more perspicacious commentators, most of the supervisors themselves and certainly among most practitioners, the lesson drawn was that

the external regulation required to prevent such cases of fraud (when it had escaped internal management) would have had to be so pervasive, so intrusive and so expensive as to be practically impossible. The failure arose from poor internal monitoring and supervision, not from failure of regulation. What went wrong was lack of internal control systems, failure of management to monitor its staff and failure of the bank to enforce its own rules. Indeed, we would argue that the most so-called regulatory failures are actually internal supervisory failures of monitoring and supervision, rather than the absence of prescriptive rules.

There is really no alternative to placing the primary responsibility for risk control on the shoulders of internal management, and on their auditors. The internal managerial risk-control mechanisms of those banks in industrial countries with large trading books should be strengthened, and the nature and functions of external regulation should be recast, with more emphasis on establishing incentives/sanctions and less on prescriptive rule-setting.

However, we also note that it is not a question of internal versus external regulation. The recommendation is rather about the balance between the two and we would consider it wrong to polarise the issue.

We would not apply the same recommendation to emerging and transitional countries. This leads to something of a dichotomy between the focus and the needs of the regulatory authorities of these countries, which need to better enforce the old, traditional lessons of credit control and properly diversified and arms-length lending, and the authorities in more industrialised countries, which are beginning to experiment with new regulatory approaches, such as the reliance on banks' internal VaR models.

The role of supervisor or compliance officer is not generally a glamorous one when compared with a "star" trader.
In the words of Professor Goodhart: "As Gilbert and Sullivan wrote about the lot of a policeman, the position of a regulator is not a happy one. He/she can hope at best to be ignored, at worst to be reviled."

Incentive-compatible

The basic underpinnings of such a new philosophy are, maybe, best illustrated with the example of the pre-commitment approach, which has recently been developed by researchers of the US Federal Reserve Board and has received strong backing by the chairman, Alan Greenspan.

This proposal aims, in the first place, at the reform of minimum capital requirements for market risks (such as fluctuations in interest rates, share prices or exchange rates), but it might lead the way to more far-reaching reforms in the longer term.

It stipulates the conclusion of an incentive contract between the regulator and the regulated. At the beginning of a quarter, half-year or similar period, a bank would have to pre-commit to a maximum cumulative trading loss over the regulatory portfolio holding period, which is 10 business days. This pre-commitment amount would be equal to the minimum capital requirement; hence there are disincentives against over-commitment. Should the bank's trading loss (which, in the case of market risk, is relatively easily to verify) exceed the pre-commitment at any time during the quarter/half-year, the regulator would impose penalties. Hence there are also disincentives against under-commitment. With an adequate and credible penalty structure it is in the banks' own self-interest to maintain the optimal regulatory capital and ensure satisfactory internal controls.

Pre-commitment focuses on the outcomes rather than the whole process of market-risk management, which keeps the regulatory intrusion into management of a bank and the costs of regulation relatively low

Pre-commitment has the advantage of focusing on the outcomes rather than the whole process of market-risk management, keeping the regulatory intrusion into bank management and the costs of regulation relatively low.

In particular, it relieves regulators from the burden of deciding about the quality of banks' internal market risk management (Value-at-Risk) models, which they will have to shoulder with the full implementation of the recent amendment of the Basle Capital Accord for market risks.

It also avoids the potentially distortionary effects on banks' portfolio choices by simple "one size fits all" capital adequacy ratios, which often contain imprecise risk-weightings applied uniformly to all institutions' positions in different financial instruments.

However, a debate revolves around the character and size of penalties. Most US banks welcomed pre-commitment in general, but are strongly opposed to monetary penalties. One argument brought forward is that they would hit banks when they were already down. Non-monetary penalties could be formulated as restrictions on trading activities or temporary increases of the minimum capital requirement. We feel that incentive-oriented regulation is an area in which increased academic research could make a substantial contribution to the regulatory debate and future reforms.

The incentive compatibility of financial regulation, ie its effectiveness in achieving lower systemic risk and more effective client protection without causing any distortionary side-effects, depends to an important extent on market expectations about the *ex ante* credibility of regulatory intervention.

Rules and regulations, which were perceived to be optimal *ex ante*, may be time-inconsistent. There may, for instance, be many reasons why the regulatory authorities may choose not to close a bank in evident difficulty. That does not mean that regulators or other public officials are dishonest or act with guile, intentionally misleading the public.

However, they may be exposed to pressures from different interest groups in the political or financial sector to deviate from the *ex ante* optimal responses to financial difficulty. In particular, incentives for forbearance — to delay intervention and disclosure — can be strong.

If the political cost of prompt and rigorous action is high, then it might be easy to avoid early disclosure, use the lender of last resort to provide any required liquidity to an individual bank and hope that through some conditionality of that liquidity provision it finds its "way back" to solvency and profitability.

The problem is that financial markets are, of course, aware of time-inconsistency and credibility problems, in particular with respect to large financial institutions which might fall under the "too-big-to-fail doctrine".

Expectations about forbearance and public bailouts imply a reduction of incentives to set up better internal controls. This itself increases the likelihood of financial distress.

From an international perspective, there are too many examples of unsuccessful forbearance — it is our view that these provide a presumption against it. Hence, the question arises as to whether there are possible solutions to overcome such time-inconsistency in financial regulation.

One approach to this is pre-commitment on the regulatory side. Formulating rules for regulatory reactions in the form of an incentive contract is relatively rare. However, there are examples of rules-based regulation.

The most far-reaching and best known is the ladder of graduated responses to declining capital ratios fixed in the 1991 United States Federal Deposit Insurance Improvement Act. (In response to current banking difficulties in Japan, a corrective action study group, set up by the Ministry of Finance, has recently published an interim report on a proposal for similar regulations in that country.)

The greater a bank's capital, the less likelihood there is of insolvency for a given expected risk. But there cannot be a single point value above which the financial institution is safe, and below which it must be closed. Clearly, danger increases gradually as capital diminishes.

That fact by itself implies that there should be a graduated series of responses from the external authorities as capital diminishes. Beyond that, the fact that each, and every, dividing line (say the 8 per cent minimum level of the Basle Capital Accord about the regulation of credit risk) is arbitrary, makes it undesirable to put too much weight on any one such number. It is preferable to have a series of such dividing lines, with the effect of going through any one of them relatively minor, but the cumulative effect large. In this respect, the principle of the graduated sequence of response in FDICIA seems right.

There is a good general argument that pre-commitment and rules are normally advantageous. But if the external regulator feels very strongly about a particular case, it should be allowed to override the pre-commitment.

That, however, leaves a problem. Both the justification for, and perhaps even the existence of, such an override in this matter may, for obvious reasons, need to be kept confidential.

How then can one prevent the external regulator from effectively just exercising discretionary control?

Our answer is that the report and justification would have to be made to an "independent" overseeing body, with full publication after an appropriate time-lag.

Proportionality

One of the problems of regulation is that it is usually not supplied through a market mechanism, and hence consumers are unable either to signal what is required or to indi-

Expectations about forbearance and public bailouts imply a reduction of incentives to set up better internal controls — this itself increases the likelihood of financial distress

cate how much they are prepared to pay for the benefits of regulation. The absence of a market in regulatory services creates two hazards: there is a major loss of information about what extent of regulation the consumer demands and how much the consumer is prepared to pay.

In general, the public is blithely unaware of the cost of the regulatory system. The financial cost of intermediation affects the size of the spread between a bank's deposit and lending interest rates. The cost of complying with regulation and supervision amounts to no more than a few basis points, widely diffused over all the customers of financial intermediaries. Customers are usually unaware that the regulatory regime imposes any costs upon them at all. This creates the impression that regulation is a "free good" — a problem in that it is likely to create excess regulation, in particular with respect to regulatory institutions which have their own self-interest and reputation at stake, so that the burden (costs at the margin) of regulatory compliance can exceed the benefits.

On the other hand, the costs to the general public of a financial crisis, in which people lose money as a consequence of the behaviour of an intermediary, are felt directly. Under such circumstances, the result of such losses is inevitably to call for more, improved, better regulation and supervision.

In addition, and under the influence of such public pressure, the incentives for the regulators and supervisors are clear: to try to avoid, or to avoid taking responsibility for market failures, while at the same time ensuring that the costs of such (additional) regulation and supervision are fully met by others, usually by passing them on to the private sector.

One of the problems of regulation is that it is usually not supplied through a market mechanism, and hence consumers are unable either to signal what is required or indicate how much they are prepared to pay for its benefits

Of course, the financial intermediaries themselves will pass on most of the costs of such intervention in the form of higher spreads. Even if there is competitive neutrality between institutions, regulated institutions may still lose business to the capital markets. Put another way, regulation of financial intermediaries may be seen as an implicit subsidy to primary capital markets. This is not necessarily unwarranted: indeed, it will be justified if the regulation is efficient. It is of no concern if banks lose business to markets because regulation forces them to pay the full costs of their activity, including potential externalities such as systemic costs.

This does, however, cause problems both for regulators and for the legislators, who otherwise normally treat such regulation as a free good. If the authorities lose market share, and financial institutions emigrate to another jurisdiction, regulators will find both their potential tax base and their power base shrinking. So, the natural tendency within each regulatory regime to over-regulate is held in check by fears of losing market share. Regulators naturally deplore this potential erosion of power and denigrate it with the term "regulatory dumping" or "the rush

to the bottom", implying that the end result of such competition will be grossly insufficient public regulation.

It is, however, rarely demonstrated that an informed public and practitioners necessarily prefer to operate in "insufficiently" regulated environments. Competition between regimes does not necessarily result in a complete absence of regulation. Indeed, if there is a consumer demand for the services of regulation, then it is quite likely that less-regulated centres would lose business and this could call forth an industry demand for tighter regulation.

In the meantime, one of the greatest concerns of regulators is how to deal with the growing globalisation of wholesale financial intermediation, and prospectively of retail financial services as well.

The previous argument about the tendency for excessive regulation should make one hesitate before advocating a global regulatory framework, even if that were practically feasible. Given differences between national structures, history, culture, interests and viewpoints, any international harmonisation would be a compromise; and like most compromises, it is likely to be unsatisfactory (from the outset) and simultaneously difficult to amend in the light of changing circumstances.

This suggests that the formulation and application of global "standards" might be better allocated to private sector institutions to impose upon themselves. This raises the question of what (credible) sanctions, if any, could be imposed by self-regulating practitioners without running into such issues as whether self-regulating practitioners' clubs might themselves become anti-competitive and even detrimental to the wider public interest.

Regulatory regime competition does not result in an absence of regulation — if there is consumer demand then less regulated centres would lose business, raising industry demand for tighter rules

A problem in trying to move towards proportionality between costs and benefits of financial regulation is that it is so hard to measure either. This comes, theoretically, within the purview of cost/benefit analysis, but these are notoriously difficult to complete successfully in practice, not least in the financial sector. This is primarily because it is difficult to quantify the benefits of such regulation and supervision.

At least the costs are fairly concrete. However, a problem in such calculations is distinguishing between the activities that financial intermediaries would have undertaken for their own risk control and internal governance, and the additional work that the regulatory regime imposes.

That said, much more could, and needs to be done, to attempt to identify and quantify such costs. How do these relate, for instance, to the average spread? If translated into terms of basis points, how much is the average user of financial services paying for the regulatory regime?

Currently there is no appreciation that the regulatory regime entails costs either for the user of such services, for the equity owners of such intermediaries, or for the

Where supervisors have managed to defuse a potentially dangerous situation, there will usually be constraints on their ability and willingness to reveal their successes publicly

taxpayer. Legislatures and supervisors press ahead with proposals having little knowledge, consideration or discussion of what these may cost. Commissioned studies, both at national and international level, of the (true) costs of the various regulatory regimes would be most welcome and could contribute to making regulatory regimes more efficient.

While measuring costs is difficult, measuring benefits is even harder. The main purpose of regulatory regimes is to prevent events happening; for example, systemic collapses or opportunistic mistreatment of clients. So success involves the absence of such "bad" events. But of course we do not know whether the absence of such bad events is due exclusively to the regulatory regime. Moreover, even where the supervisors have managed to defuse a potentially dangerous situation, there will usually be constraints on their ability and willingness to reveal their successes publicly.

While the benefits of regulation in general, and specific elements of a regulatory regime, may be difficult to measure accurately, this does not mean that they are not real. The ultimate rationale of regulation and supervision is to correct various forms of market imperfections and failure, including externalities such as the social costs of failure exceeding the private costs.

If significant market imperfections (such as those associated with asymmetric information, agency costs, systemic costs of failure) can be corrected through regulation and supervision, the magnitude of the benefits could be very high even if they are not easily quantifiable. Nor is it the case that the benefits will accrue to consumers only as regulated firms can also gain in a regime of effective and efficient regulation.

There are benefits from regulation, and there is an evident consumer demand for them. But, regulation is not a free good, and the costs are varied and can be substantial. One of the most difficult exercises in the regulatory process is to make the ultimate cost-benefit judgement: do the benefits derived from regulation exceed the costs?

Complex judgements have to be made because it is in practice extremely difficult to be precise about costs and benefits. There are serious methodological problems involved in conducting a cost-benefit analysis of financial regulation:

- The difficulty of placing a precise value on the consumer-welfare benefit of correcting any market failure.
- Identifying the value placed on information by consumers that is relevant to them.
- The extent to which a probability of failure is reduced.
- The problem of first defining, then measuring and locating the incremental costs of regulation on firms.
- Determining what affect regulation has on the competitive conditions in the industry.

How then are the benefits of regulation to be measured? One approach, which is commonly used to assess the perceived value of non-market services, is to use survey techniques, asking consumers how much they are willing to pay for protection against losses from financial failures or mistreatment. But once again, the insurance nature of the regulatory service makes it more difficult for anyone to assess its value. Thus, after a crash of some kind, the *ex post* value attached to a strong regulatory regime may well be a multiple of the previous *ex ante* value.

However, practitioners, and their firms, have a more informed understanding of the costs and benefits to themselves of the regulatory regime. Once again, however, there is likely to be a bias in their responses to any such survey, as the social benefits from preventing systemic collapses are likely to considerably exceed their private benefits. Even so, a relative ranking by practitioners of which aspects of the regulatory regime are perceived as better value, relative to their cost, and which were not, could be helpful. Such surveys have their limitations; but given the paucity of information on the cost/benefit balance, and the generalised complaints of practitioners about the lack of due proportionality, it would seem that more could usefully be done in this field.

A more ambitious proposal than consumer surveys to achieve proportionality in financial regulation is to try to give clients of financial services a choice between institutions subject to more, or less, regulation. One example is the "narrow bank" proposal. Under this scheme, a bank, or even separated parts of the same bank, can elect to be made "safe" by being required to hold only a limited set of highly liquid, almost capital-certain assets, as counterparts to their deposits. This "safe" part of the bank could be granted 100 per cent deposit insurance.

There are, however, problems with this approach. First, it does not deal fully with differential information between the suppliers and demanders of financial services. It may not be possible for consumers to make judgements between so-called safe and less safe financial institutions. Also, it may not always be possible to require consumers to accept the consequences of their judgements.

It simply will not be politically feasible, at least in the aftermath of financial disasters, to leave Aunt Agatha to the mercy of *caveat emptor*, should she, particularly during boom and "bubble" conditions, choose to invest in "risky" activities.

In addition, the division of banks into low risk/low return and higher risk/higher return entities may have the undesired side-effect of exacerbating macro-economic volatility. During booms, when confidence is high and the prospects of failure correspondingly low, investors are likely to shift *en masse* into the higher risk/higher return entities, thereby driving the relative price of risk assets up and further reinforcing the boom. When the boom breaks, there will be an equivalent flood back into the safe entity. The flow of funds from riskier to safer entities would then force a risky bank to have to have to liquidate their (risky) assets, thereby reinforcing the severity of the slump.

Alan Greenspan, the chairman of the US Federal Reserve Board. He has backed the pre-commitment approach, which has recently been developed by researchers of the Board

Institutional structure

The structure of supervisory bodies and their internal organisation has recently come to the forefront of the debate about financial regulation, not only in the UK (which has opted in favour of a single mega-regulator, probably embracing the whole UK

financial services industry in the future), but also in Australia and other countries. We should first emphasise that institutional structure does matter, because the way that the dividing lines between and within institutions are drawn can influence the effectiveness and costs of regulation.

However, in our view it is not an issue of primary importance for effective regulation. Although of course not entirely independent, the way in which regulation and supervision is conducted (see, for example, the discussion of incentive issues addressed earlier) has to be at centre stage. In particular, given the great variety of different financial institutions and instruments and their links with each other, there is not one single, right institutional structure which can be advised. There are different approaches which all have their merits and disadvantages.

There are three broad structural approaches which may be distinguished by institution, function, and objective.

In the case of an institutional focus, regulation is directed at financial institutions irrespective of the mix of business undertaken. This is particularly appropriate when considering prudential issues which must necessarily focus on institutions. It is, after all, institutions and not functions that become insolvent. Functional regulation has the business undertaken by institutions as its focus, irrespective of which institutions are involved.

We believe that, in practice a matrix approach is needed when financial institutions conduct a wide range of business. In this case, institutions need to be regulated on both a functional (for conduct of business purposes) and an institutional basis (the prudential dimension), and that having specialist prudential and conduct of business agencies may be the most effective and efficient approach.

Institutions need to be regulated on both a functional (conduct of business) and institutional (prudential) basis

Overall, we emphasise that the design of regulatory structures, or the internal structure of a mega-regulator, has to be focused around the objectives of regulation, because the ultimate criterion for devising the optimal structure should be the effectiveness and efficiency of regulation in meeting its basic objectives.

An alternative school of thought to the concept of a mega-regulator argues that regulatory agencies are most effective and efficient, but also more transparent and accountable, when they have clearly defined, and precisely delineated, objectives and when their mandate is clear and precise.

Moreover, there will be times when the objectives of regulation are in conflict and one of the issues to consider is which structure is most efficient at resolving conflicts. In a single agency, for example, all conflicts are internalised. One merit of focusing institutional structure upon objectives is that it requires significant conflicts between such different objectives to be resolved at the political level.

Additionally, making different agencies responsible for wholesale and retail business (even though the distinction is fuzzy at the margin) may reduce the danger that specific regulations are extended beyond the sphere for which they are appropriate. The nature of market imperfections and failures is different

in the two areas and the rationale, approach and conduct of regulation needs to be different.

One of the central objectives of regulation, generally applicable to wholesale markets, is to maintain systemic stability. In the absence of a mega-regulator this should be the clear focus for a specialist agency. As already noted, there is also a requirement for prudential regulation even where no systemic considerations arise. This can also be addressed by a separate agency in charge of securities firms, insurance companies and other non-bank institutions where continued solvency is a regulatory issue.

As the retail conduct of business regulation raises fundamentally different issues and requires a totally different approach to that for wholesale business, those who advocate specialist agencies would argue in favour of a dedicated conduct of business regulator for retail business. However, exchanges, and perhaps wholesale conduct of business issues, could be largely self-regulated, except for competition-policy issues related to market access.

When each country has decided on its optimal regulatory structure, the next question is the role of the central bank within that.

The first issue we address is that of power. Altogether we found seven countries (notably Denmark, Norway and Sweden) that have put in place a single, all-embracing financial regulatory authority, all but one have made this separate from the central bank; the sole exception is the monetary authority in Singapore. This is not accidental. If the central bank has independent powers to set the interest rate, the combination of a widespread regulatory function with monetary control might be thought to place excessive powers in the hands of unelected officials.

Combining a widespread regulatory function with monetary control might give excessive power to unelected officials

The second issue is possible conflicts of interest. This is often advanced by academic economists as the main argument against central bank participation in regulation, in the belief that a central bank with responsibility for preventing systemic risk is more likely to loosen monetary policy on occasions of difficulty. We see no reason why assistance to a bank in difficulties need affect the aggregate provision of reserves or level of interest rates. Any lender of last resort assistance can be offset in the aggregate by open-market operations. In our previous empirical and historical studies of this issue, we have come across few attested cases where the concern of a central bank for the solvency of its banks has been a major factor in an excessively expansionary monetary policy.

The bottom line in our view is that banking realities will force there to be considerable co-ordination and interaction between the top officials dealing with monetary macro policy and those in charge of bank regulation.

The question of whether the banking supervisory body is formally within, or outside, the central bank is then essentially a subsidiary issue, depending on perceptions of the appropriate locus of power and responsibility. These perceptions will vary depending on accidents of history and culture. There is no single best approach under all circumstances, as is evidenced by the variety of regulatory structures in different countries and the lack of tendency towards a single model.■

THE UK MARKET FOR HIGH-YIELD DEBT

By Jeremy Leake, Alex Crowe and Rupert Watson, Bank of England

There has been an active market in high-yield bonds ("junk" bonds) in the US for some years. Yet, in spite of apparent attractions to UK issuers, there is no effective market in the UK. This article looks at the role which high-yield debt can play and examines the development of the sterling market.

There has been an active market in the US for high-yield bonds — sometimes referred to as "junk" bonds — for some years. These are sub-investment grade bonds which have a credit rating below Standard and Poor's BBB- rating or below Moody's Baa3 rating. The bonds offer investors the chance of a higher prospective return than less risky investment grade bonds. Most are issued by US companies in the US market and are held by American investors.

Total issuance in the US market was about $60bn in 1996 — a typical issue is about $100m to $150m in size, has an intermediate seniority ranking, and a maturity of about seven years. Spreads over US Treasury bonds — in effect, the additional return offered in exchange for the added risk — ranged from 150 basis points for BB+ rated issues to nearly 500 bp for B- rated issues.

In the UK, as in the rest of Europe, bonds of this type are rare: according to one estimate, total sterling high-yield issuance was £425m in 1995 and £745m in 1996 — all of which were unrated (see Table 1).

However, the UK and other European companies have issued in the US. Such "Yankee" high-yield issuance by European based companies amounted to about $3bn in 1996 and, since 1993, the market has been used extensively by media, cable communications and telecommunications companies (see Chart 1).

Swapping the proceeds of a US dollar issue into the borrower's domestic currency can be costly, so this recourse to a foreign market suggests strongly that there are deficiencies in the UK market. Certainly most UK companies which have issued in the US agree that a sterling issue in the UK, were it possible, would have been preferable. Indeed, the lack of an effective UK market may be restricting UK firms' access to capital.

The implication — that there may be benefits to be gained from a deeper and more active sterling high-yield market attractive to UK investors — prompts the search for explanations as to why it does not yet exist. This article examines the question from the issuer and investor perspectives, and assesses various factors which have been suggested as potential obstacles to the sterling market's development.

The issuer perspective

High-yield debt is typically of long maturity, unsecured (or less well secured than typical bank loans) with more flexible — generally non-financial — covenants and is repaid in full on maturity, rather than amortised over its life. So it

Table 1 **UK STERLING HIGH YIELD ISSUES 1995–97**

Issuer	Date	Amount	Maturity	Coupon	Initial spread over Gilts
Eco-Bat Technologies	20/06/97	£65 m	2007	9.125%	200 bp
Castle Transmission	14/05/97	£125 m	2007	9.000%	195 bp
CGL Rail	15/10/96	£165 m	2012	9.375%	130 bp
Fitzwilton Finance (UK)	11/09/96	£80 m	2006	9.750%	175 bp
Daily Mail & General Trust	14/03/96	£100 m	2021	10.00%	145 bp
First Hydro Finance	05/01/96	£400 m	2021	9.000%	115 bp
Computacenter	21/11/95	£50 m	2002	10.000%	225 bp
Independent Newspapers	16/06/95	£75 m	2005	9.250%	125 bp
Slough Estates	11/04/95	£100 m	2017	10.000%	160 bp
DeBeers Centenary	06/03/95	£100 m	2020	9.750%	165 bp
Daily Mail & General Trust	25/01/95	£100 m	2005	9.750%	76 bp

Source: Bankers Trust **NB: All issues were unrated**

affords financing of a kind and with a cash-flow profile not readily available from other sources and is likely for that reason to be attractive to a range of issuers. On the basis of US — and limited UK — experience, these include:

- *High-growth (perhaps high- tech) mid-sized companies*: these firms often have limited security to offer and limited or negative current cash flow, so high-yield debt may provide a more ready source of development capital for them than banks.
  Such paper is unlikely to be useful to smaller companies and start-ups because the issuance of bonds can be complex and costly. The consensus among issuers and intermediaries in the US is that issues should be at least $50m, although the preferred size would be more than $100m. However, the financial management of middle-market UK firms is becoming increasingly sophisticated and such firms now want to use more flexible financial instruments, such as bonds, which were previously available only to larger corporates.
- *Large management buy-outs*: for similar reasons, high-yield bonds are likely only to be attractive for larger buy-outs — but these are accounting for an increasing proportion of the MBO market.
- *Mergers and Acquisitions*: M&As have been a major application of high-yield debt in the US and could play a similar role in the UK. Gearing in UK mergers and acquisitions tends, however, to be lower than in the US.
- *Project finance and the PFI (Private Finance Initiative)*: projects often show negative cash flows and offer little security in their initial phases. In PFI projects to date, contractors have supplied much of the equity, but there is a limit to how much their balance sheets can bear and a small number have tapped the bond markets. The PFI may eventually become a source of higher yielding bonds.

There is, however, a price to pay by issuers for the advantages of high-yield bonds over more conventional sources of funding: they can be expensive. They are usually unsecured and subordinated to bank debt, so they typically have an interest rate at least 100 bp higher than bank debt for a given issuer. Issuance costs are also relatively high. Investment bank fees are typically 3 to 4.5 per cent, and legal fees and other administrative costs can add another 80bp — so they are not a cheap substitute for bank debt.

Also, US experience suggests that issuance can be an uncertain process. This is partly because, in the US at least, legally binding underwriting is not commonly available. But it is also apparent that investor appetite for paper can change quickly. Several UK issuers in the US market have suddenly found themselves unable to place issues on the terms they expected, having incurred substantial issue costs. Zero coupon bonds are especially susceptible to such problems.

The investor perspective

High-yield debt is essentially a wholesale market instrument, so it is principally aimed at institutional investors. There are very substantial pools of funds which could therefore be invested in such paper in the UK: institutional assets in the UK exceeded £1.3 trillion at the end of 1996 — 20 per cent of which were bonds (including gilts, foreign government bonds and corporate bonds). Chart 2 shows the bond holdings by different classes of financial institutions in the UK.

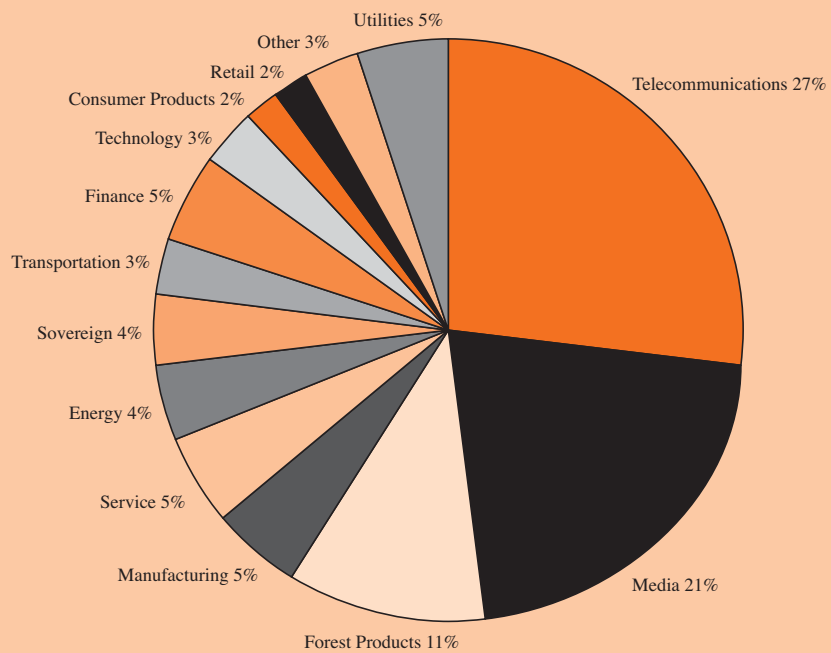
UK investors have so far shown little appetite for high-yield debt. There seem to be two kinds of potential obstacles: investors' ability and willingness to evaluate and then manage them; and restrictions — administrative or statutory — on investment powers.

Evaluation and realisation

For most UK institutional investors, the key portfolio decision is between high returns and capital growth, for which they look to equities, and certainty of returns, for which they typically rely on investment-grade debt. As a result, UK fund managers generally have little expertise in assessing the credit of corporate bonds.

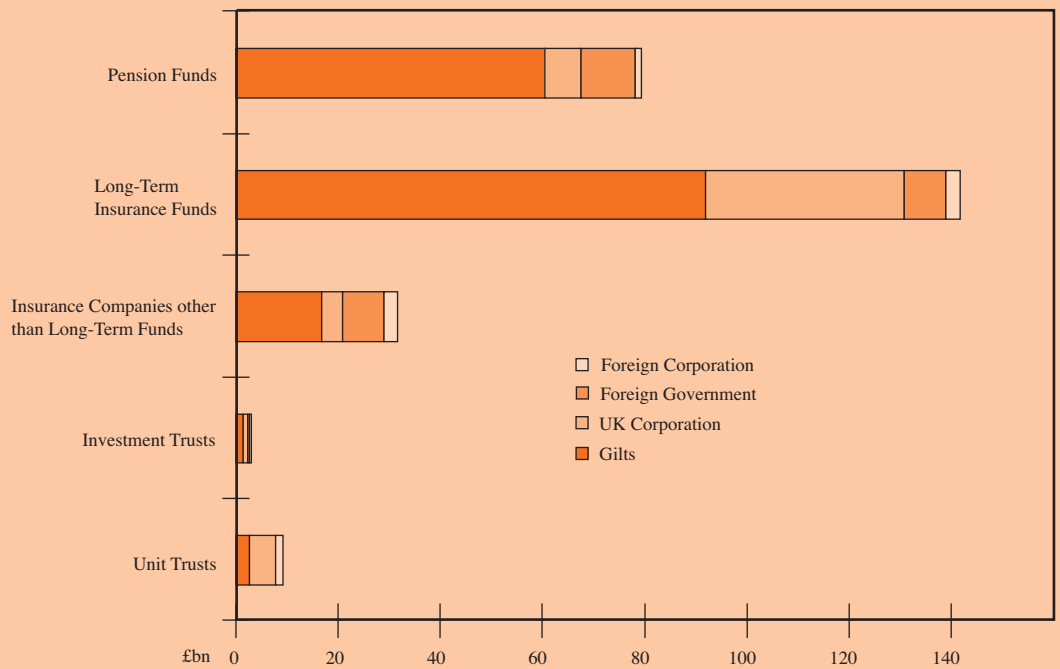
The decision to invest in equities will be underpinned by extensive research into company performance and prospects, but there is little perceived need, and therefore no established expertise, to undertake a detailed evaluation of the likelihood and cost of issuer default. The lack of a significant high-yield debt market in the UK is itself a deterrent to investment in it, as it limits the scope for benefiting from credit assessment expertise.

Chart 1 **1996 NEW ISSUE ACTIVITY IN THE YANKEE HIGH-YIELD BOND MARKET**



Source: SBC Warburg

Chart 2 **BOND HOLDINGS BY DIFFERENT INSTITUTIONS**



Source: Financial Statistics

UK investors' attitudes are, in part at least, a product of the market environment here, but they could change if the incentive were sufficient.

Prudent investment in high-yield debt requires a careful review of the debt-servicing capacity of the issuer, a thorough understanding of the ranking, the likely treatment of the debt in an insolvency and an assessment of the recovery potential in the event of issuer default. This is because a significant factor in obtaining attractive *ex-post* returns is not just the high coupon payments but also the investors' ability to recover value in workouts. This can call for expertise rarely required of either the equity investor or (because default is a remote event) the holder of investment grade debt. An active post-default secondary market can, at least to some extent, substitute for workout expertise, as it provides a mechanism whereby defaulted debt can be transferred to those willing and able to engage in the workout process. But there is still a need for expert participation, if the exit route provided by such a secondary market is to exist at all and to give assurance that it will reliably deliver fair value.

Investment powers

The other key aspect from the institutional investor's perspective is their formal capacity to invest in sub-investment grade paper. Many institutional investors in the UK are constrained in this respect. For example, many managers of pension funds lack trustee approval to invest in such assets: trustees tend not to allow investment outside the mainstream of domestic and overseas equities, investment grade bonds and property. There is, however, no statutory obstacle to them doing so.

Many pension fund managers are allowed to invest in the equity of companies whose high-yield debt they would be unable to hold, even though equity is riskier than debt. This suggests that, if trustees were more familiar with the instrument and satisfied that fund managers had the capacity to realise its potential returns, this constraint on investment could be relaxed.

A significant number of unit trusts, unit-linked insurance funds and investment trusts are also constrained from investing in high-yield debt.

In these cases, the restriction originates from their fund description and is presumably the result of the actual or perceived lack of interest among the retail investors at whom the funds are targeted.

Some unit trusts do undertake such investment: in particular, the "UK gilt and fixed interest" sector invests in corporate bonds and some of these may be high-yield. However, many of these funds are marketed as low-risk vehicles and as such they do not invest heavily in high-yield paper.

Life funds seem to be unrestricted in their choice of investments: they are of course subject to solvency tests by the DTI, but these seem neutral between investment grade and other debt securities. Directors usually set broad guidelines as to the maximum that may be invested by a fund in particular credit quality ranges. It appears, though, that these limits are rarely reached.

Structural impediments

A range of structural factors have been cited as obstacles to the development of this market, perhaps because they are respects in which the UK and US environments differ. The most common factors cited include differences in issuance regulations, insolvency procedures and tax regulations.

Regulations on issuance

In the UK, the framework for securities issuance does not differentiate between the treatment of high-yield debt securities and that of other debt securities: any issuer of debt securities must comply with the Banking Act 1987 as well as with the general law on prospectuses, listing and advertising. The Banking Act can restrict issuance if this involves the acceptance of deposits as defined in the Act. But even here the Exempt Transaction Regulations 1997, allow a wide range of corporate debt issues to take place without the issuer contravening the Banking Act.

Life funds seem to be unrestricted in their choice of investments — directors usually set broad guidelines as to the maximum that may be invested by a fund in particular credit quality ranges

Companies proposing to issue debt securities may also have to consider the Bank's guidelines on the lead management of sterling capital market issues. Firms which are incorporated elsewhere in the EEA may lead manage such issues if permitted to do so by their home supervisors, either in their home country or elsewhere in the EEA if this is allowed under the passport. Firms incorporated in the UK or outside the EEA may also lead manage issues in London if they have satisfied the Bank of England as to their competence and experience.

Tax issues

There are significant structural differences between the US and UK tax systems which may affect the servicing costs of debt and equity, and so contribute to the success of the US high-yield market. The fact that in both countries the return on debt (whether interest or discount) is deductible from corporation tax profits, whereas dividends are not, gives debt finance an advantage over equity — encouraging higher gearing. Nonetheless, the UK system, unlike that in the US, partially imputes corporation tax to shareholders and makes an indexation allowance for capital gains on equities. So (until the recent Budget restricted dividend tax credits) the UK system provided more flexibility and created less incentive for issuers to prefer debt over equity finance.

When a UK company does decide to raise debt, its interest costs tend to be lower when borrowing from a UK bank than when issuing domestic debt securities. This is because interest can be paid gross to a bank — avoiding the need to deduct withholding tax from interest payments and remit it to the tax authorities. Since withholding tax does not apply to the discount securities, however, there is an incentive to issue zero coupons instead of interest bearing debt, if there is investor demand for it.

However, despite these differences, the general opinion among issuers and investors seems to be that the UK tax regime has not in practice presented an obstacle to high-yield issuance.

Insolvency

Of potentially greater significance, given the default risk associated with high-yield debt and the importance of recovery rates, is the effect of insolvency law and informal procedures for restructuring the capital base of a company in financial difficulty. It has been argued that UK insolvency law provides a disincentive to high-yield issuance compared with the US, because it gives less power to unsecured creditors to influence the outcome of an insolvency.

Most issues of high-yield debt are unsecured or secured by a second charge over certain of a borrower's assets. In the event of a borrower becoming insolvent, holders of high-yield debt will rank behind preferred creditors (such as tax authorities and employees) and secured creditors (usually banks) for repayment. Secured lenders are afforded greater privileges in Administrative Receivership than in Chapter 11 (respectively the most commonly used frameworks for corporate insolvency in the UK and the US). Receivership allows a secured creditor to appoint a receiver to recover his loans by realising his security. The courts are not involved in the appointment.

> The prospect of a prolonged period of low inflation may increase institutions' appetite for credit exposure as a source of higher returns — similarly, EMU may stimulate investor demand

Chapter 11, by contrast, is initiated by an application to the US bankruptcy court by an interested party, such as a creditor, a shareholder or a director of a business in financial trouble. Its objective is to try to find terms to preserve a business that are acceptable to a majority of creditors. Chapter 11 also gives explicit rights to any interested party to be consulted and to appeal to the courts should they believe that their interests are being overridden.

Differences between US and UK insolvency procedures may not, however, be as marked in practice as they would appear on paper. Most receivers make every reasonable effort to preserve the business, and this frequently involves negotiating with different classes of creditor to gather their views about participating in a financial reconstruction.

However, the ranking of different types of creditor is much the same in both countries: security rights, in particular, are respected. But there is a greater difference between the rankings of different creditors' claims in the Anglo-Saxon countries and in continental Europe where obligations to employees are given relatively more weight.

A further practical issue is the liquidity of high-yield debt that is in default. There is an active secondary market in distressed debt in the US which enables holders of defaulted high-yield bonds to realise their value and thereby transfer responsibility for deciding the terms of a capital restructuring to specialist intermediaries.

A market in distressed debt has emerged in the UK in the past five

years, and it has played a role in a number of recent extra-statutory workouts for companies which had encountered financial problems. But some argue that information is typically not as widely available in UK workouts as is in the US, because much of the negotiation takes place between a company's bankers. To the extent that that is true, it will tend to obstruct reliable price formation in the secondary market, and so lower its liquidity.

Outlook for the UK

A number of factors are working to change UK investor attitudes to credit risk, which could provide impetus to the high-yield market here. It is often remarked that low interest rates prompt the search for higher yields. The prospect of a prolonged period of low inflation may increase institutions' appetite for credit exposure as a source of higher returns.

Similarly, EMU may stimulate investor demand: it will remove opportunities to earn returns through exposure to currency risk; and a consolidated Euro market would provide greater scope to diversify credit risk. It might also create greater secondary market liquidity.

Separately, maturing pension funds are widely expected to increase their bond holdings. Also various legislative changes, such as the Pensions Act which came into force in April 1997, contain a number of features that could impact upon the investment strategy of pension funds. Though on balance these tend to favour bond investment generally rather than high-yield instruments in particular, there could nevertheless be benefits to the high-yield market. Similarly, the abolition of repayable tax credits announced in the Budget is likely to favour investment in bonds by pension funds.

Some argue that information is typically not as widely available in UK workouts as in the US, because much of the negotiation takes place between a company's bankers

Of course, the high-yield market by its very nature brings risks as well as benefits. Issues may, for example, be mis-priced so *ex-ante* spreads do not compensate investors for the default risk they are taking. This could be exacerbated in the early stages of the market by low liquidity. Certainly, issuing houses and investors in this paper would need to develop the credit skills to price and assess this type of security properly.

So there are potential risks to financial intermediaries both in holding high-yield bonds and in underwriting them — either at issue or (by committing to provide liquidity to the market) in the secondary market. If the secondary market does not function efficiently, it may be difficult to value holdings of this kind of paper — or to assess the mark-down which might be associated with a rapid sale.

Nevertheless, high-yield debt would plainly add to the range of financing options available to UK companies and, if such a market can develop here, it would eliminate the hedging costs and other uncertainties created by issuing such paper in the US market — where UK companies inevitably also suffer from poorer name recognition.■

REGULATION OF CUSTODY IN THE UK

By Liz Murrall, the Securities and Investments Board

Following a review by the Securities and Investments Board of the regulation of custody, and enactment of the necessary legislation, anyone who provides custody services in the UK must, from 1 June this year, be authorised under the Financial Services Act. The SIB review was prompted by a variety of factors, including the Maxwell debacle, implications of EC Directives and developments in both the domestic and international securities markets.

In developing proposals for a regulatory framework, the Securities and Investments Board (SIB) wanted to cover the main risks associated with custody. These are:

- Theft or other loss of investors' assets resulting from management or staff having unauthorised access to investments or overriding control procedures.
- Misuse of investors' assets where the custodian's own investments are mixed with the clients', so that the latter are at risk of being lost or misused.
- Legal uncertainty where there is inadequate legal documentation of the custodian's responsibility to its clients. (If roles are clearly defined then fraud is less likely to flourish and the confusion and cost of sorting matters out can be reduced.)
- Inadequate record-keeping so that it is not clear who owns which investments.
- Bad administration such as the failure to account for income from investments or to handle corporate actions, such as proxy voting and exercising rights.

After a lengthy dialogue with the industry, investors and other regulators, including the Bank of England, we consulted on proposals for regulating custody that have now resulted in:

- An amendment to the Financial Services Act (FSA) which, from 1 June 1997, means that any person that provides custody needs to be authorised to do so.
- New standards for the regulation of custody. These indicate what the SIB will regard as "adequate" investor protection in the area of custody. The standards set out the safeguards which the SIB expects each of the regulators under the FSA to implement. The standards do not relate to authorised firms directly. Each FSA regulator had to give effect to the standards through their own rule books.

Authorisation of custody

Under the FSA, unless specifically exempt, any firm which conducts investment business in the UK is required to be authorised and is regulated for its investment activities. Custody was originally excluded from the scope of the FSA. However, as custody tends to involve associated activities which are authorisable under the FSA, most providers of these services were in any event authorised. The FSA regulators monitored a firm's custody operation when the investments were held in connection with the firm's investment business. To a certain extent, the FSA regulators also monitored

in an indirect way custody services provided to authorised firms by third parties. The SIB considered that there was a case for the FSA being amended to make custody an authorisable activity in its own right. It published a consultative paper in August 1995 in which it put forward a three-fold argument.

First, whereas a person who took deposits was required to be authorised under the Banking Act and was supervised by the Bank of England, anyone could provide custody services and hold assets without needing to be authorised or supervised. It was not felt that the services of custodians were inherently hazardous — custodians usually have sound management and control their operations well — but the value of assets held in custody was such that the loss involved in a disaster could be vast (the top seven custodians in the UK hold some £700bn of domestic assets in custody).

Inevitably, the collapse of Barings heightened concern about the risks associated with custody. The assets that Barings held in custody were not lost but for some time they were frozen and could not be returned to investors.

Second, although investments in custody frequently fell to be regulated, there was a gap in circumstances where a firm, whether authorised by the FSA or not, provided stand-alone or third-party custody, and investments were held other than in connection with its investment business. Making custody authorisable levelled the regulatory playing field and ensured that this third-party custody was regulated directly.

Arguments for making custody authorisable found wide-spread support and analysis showed that the additional costs would be small and that the cost-benefit balance was favourable

The third argument was that a gap existed where the investor, rather than an authorised firm, appointed the custodian. The SIB believed that making custody authorisable would ensure that investors in these circumstances were similarly protected. It would also mean that a private investor could claim on the Investors Compensation Scheme in the event of default by an authorised custodian.

Industry opinion

These arguments for making custody authorisable found support among most of the respondents that were consulted.

A SIB analysis showed that the additional costs associated with making custody authorisable would be small and that the cost-benefit balance was favourable. In particular, as most custodians were already authorised by virtue of their other activities, few firms were likely to need authorisation for the first time. (This analysis has been supported by events — only six firms have become authorised exclusively for custody business since the legislation was changed and custody was made an authorisable activity.)

Furthermore, as an FSA-authorised firm's custody operation was already monitored by the FSA regulators when it related to the investments of its investment business customers, the main increase in costs would relate only to the third-party custody of such firms. As these firms typically manage their investment business and third-party custody operations in a similar way, these additional costs were likely to be small.

Following further consultation by the Treasury on the details of the amendment to the FSA, the necessary change to the legislation was approved by Parliament and, on 1 June 1997, it became a criminal offence to carry on "custody" in the UK without being an authorised or exempted person.

Authorised activities

What precisely is meant by "custody" and what activities are authorisable?

To help firms decide whether or not they needed to be authorised for their custody business, the SIB issued guidance (The Securities and Investments Board, Guidance Release 5/97, June 1997, *Custody of Investments under the Financial Services Act 1986*) on our interpretation of the amendment to Schedule 1 of the FSA.

In summary, custody is now covered by the FSA where the assets consist of or include, or may consist of or include, investments (see Box 1). A firm is carrying on custody if it holds a portfolio of assets which include paintings, cash or land provided the portfolio also contains, or may from time to time contain, investments as defined by the FSA.

The new legislation defines custody as consisting of the safeguarding of assets combined with their administration.

The Treasury did not seek to tie down the definitions of either safeguarding or administration in the legislation. The Securities and Investments Board's guidance indicated that a firm would be safeguarding where it:

- has physical possession of tangible assets (such as gold); or
- has physical possession of documents which are evidence of intangible assets (such as share certificates); or
- protects the integrity of intangible assets not evidenced by a physical document (such as shares in CREST).

Box 1 CUSTODY AS AN AUTHORISABLE ACTIVITY

Paragraph 13A of Schedule 1 of the Act reads as follows:

Custody of investments

(1) Safeguarding and administering or arranging for the safeguarding and administration of assets belonging to another where:

(a) those assets consist of or include investments; or

(b) the arrangements for their safeguarding and administration are such that those assets may consist of or include investments and the arrangements have at any time been held out as being arrangements under which investments would be safeguarded and administered.

(2) Offering or agreeing to safeguard and administer, or to arrange for the safeguarding and administration of, assets belonging to another where the circumstances fall within sub-paragraph (1) (a) or (b) above.

Notes:

In the SIB's opinion, a firm will be "safeguarding" assets consisting of or including investments in cases where the firm:

(a) has physical possession of tangible assets (such as gold); or

(b) has physical possession of documents evidencing intangible assets (such as share certificates), or

(c) protects the integrity of intangible assets not evidenced by a physical document (such as shares in CREST).

In the SIB's view, "administration" will include any one or more of the following services provided by a firm for its customers, though this is not meant to be an exhaustive list:

(a) maintaining accounts with clearing houses;

(b) settling transactions in investments;

(c) operating through depositories or sub-custodians in the United Kingdom or elsewhere;

(d) operating nominee accounts, including pooled accounts, which identify each customer's assets in a ledger;

(e) cash processing associated with customers' assets;

(f) collecting and dealing with dividends and other income associated with the assets;

(g) carrying out corporate accounts such as proxy voting (including exercising rights conferred by an investment on behalf of the beneficial owner).

Firms may not avoid authorisation by structuring their business so that one entity is responsible for the safeguarding of investments and another for their administration

We also give some examples of activities which we understand will be included within "administration", such as: settling transactions, operating nominee accounts, cash processing, collecting and dealing with dividends and appointing sub-custodians.

Firms do not need to be providing all these administration services to be carrying on custody business. A firm could be carrying on custody when, in safeguarding assets, it performs any aspect of administration.

The two activities of safeguarding and administration must be combined — but, pure safekeeping operations (such as the holding of jewellery, wills, title deeds or share certificates in locked boxes), where there is no administration, are not required to be authorised. Likewise, a solicitor who merely holds share certificates for an investor in a safe does not need authorisation for this activity.

The legislation contains a number of specific exclusions. Nominees as registered holders of investments, for example, will not be carrying on custody business where an authorised firm which is permitted to carry on that business takes responsibility for them. Foreign exchange business and transitory safekeeping (such as where independent financial advisers receive policies from product providers to pass on to investors) are also excluded. Furthermore, holding investments as security against loans is not custody.

The legislation covers not only the provision of custody, but also the arranging of custody. Firms may not avoid authorisation by structuring their business so that one entity is responsible for the safeguarding of investments and another for their administration. The SIB believes that whenever assets are safeguarded and administered, someone will always be responsible for arranging the safeguarding and administration. Consequently, the firms which only carry out administration and arrange for their nominee to do the safeguarding will be carrying on a custody business.

Regulation of custody

The standards for custody set out the safeguards the SIB expects each of the regulators under the FSA to implement and to ensure that their authorised firms comply. The standards address the risks identified with custody by reference to: responsibilities, segregation, protection and identification and reconciliation.

Responsibilities

Key responsibilities must be agreed in writing between the parties to the custody arrangements, ie the firm providing custody and its customer. (For example, it must be clear who will be responsible for appointing sub-custodians, for reviewing the latters' performance and for losses of customers' investments.)

When investments are held in a nominee company, the authorised firm must always accept responsibility for its nominee. An investor

would, therefore, have a right of action against the firm for any losses arising as a result of its nominee's behaviour. If the firm were then to default on its liabilities, a private investor could expect to be able to make a claim on the Investors' Compensation Scheme.

Segregation and operational safeguards

The standards aim to improve operational safeguards by preventing customers' investments from being mixed with those of the firm and of other customers. This decreases the likelihood of fraud and misuse.

Protection against loss

Custodians must have arrangements in place to ensure that customers' assets are securely held. They should ensure that they act only on instructions given in accordance with what has been agreed with the customer.

Identification and reconciliation

Custodians must maintain records to identify the assets and entitlements of each of their customers. Where assets are held as collateral, these must be identifiable and customers should receive a record of their investments at appropriate intervals.

The standards apply not only where firms provide custody direct but also where they delegate custody to third-parties. Where custody is delegated, and where the third-party custodian is carrying on business outside the UK and thus outside he reach of UK regulation, the standards rely on indirect controls. Since custody is a global business, indirect controls over the selection and appointment of global custodians are of obvious importance.

These indirect controls are achieved through three main means.

- First, a firm must exercise due skill, care and diligence when selecting and appointing a third-party custodian.
- Second, the types of institution that can act as a custodian are set out — the custodian must be an institution that is regulated or supervised or subject to some form of independent scrutiny.
- Third, the custodian needs to agree to contract to provide a particular level of service. For example, when a third-party custodian is used, it is important that it has adequate procedures in relation to its custody operation.

Conclusion

The new legislation provides a more secure regulatory framework for dealing with third-party or stand-alone custody and also with new, entirely unregulated firms arriving in the UK. Furthermore, enhancing regulatory standards should assist in discouraging fraud in the handling of investments and increase the likelihood of its early detection.

Firms should generally be able to meet these standards since most custodians were already authorised under the FSA for their investment business and the standards for custody codify what the better firms were already doing in practice. ■

Enhancing regulatory standards should assist in discouraging fraud in handling investments and increase the likelihood of its early detection

MARKET MANIPULATION

By Guy Sears, the Securities and Investments Board

When addressing market manipulation what matters is the appropriate regulatory response. Some responses are designed to preserve and protect, on a real-time basis, the integrity of the market; others to identify and discipline any market participants whose lack of integrity damages that market.

Manipulation damages markets. It distorts prices, which may lead directly to economic inefficiencies and resource mis-allocation; it allows transactions to take place at prices which do not reflect a true balance between supply and demand, so some market participants benefit unfairly at the expense of others; and it may reduce confidence in both the market affected and in markets generally, and so discourage their use and indirectly damage the economy.

Some manipulative events on their own may not damage the market environment. If they became widespread, however, these activities could damage the environment. Therefore, regulatory responses must include disciplinary measures that are designed to deter repetition in the interests of preserving the integrity of the market. In this way there are regulatory responses to manipulation which distinguish between damaging situations and abusive participants.

This article focuses on the manipulation of *financial* markets. Manipulation of markets is a more general issue and in other contexts falls within the remit of the Director General of Fair Trading. Unlike the Office of Fair Trading, however, whose interests in this area are principally economic, the Financial Services Act regulators do not always act solely because of considerations of economic efficiency.

The requirement for firms to act with integrity carries with it considerations of moral accountability. Regulatory responses which seek to provide proper protection for investors and uphold the integrity of markets, at times address defects in the trading environment and at other times judge whether anyone is to blame.

Under the current system not all those who use markets, let alone participate in them, are subject to the same sets of standards or regulations. This can therefore limit the effectiveness of regulatory responses which seek to protect the environment; however, careful consideration of the design of contracts and the use of market surveillance have a role in stopping manipulation before it starts.

Markets' functions

Securities and futures markets are places where people come together to trade investments. The trade in some investments is driven by a desire to buy something cheap and sell it at a profit. Other trading may be driven by the wish to redistribute risk in an efficient manner.

Reliable pricing is important — it inspires user-confidence. Markets will exist where potential buyers and sellers of a product compete in

an environment that provides them with access to information about the product.

There are two types of needs that markets can answer. The first is to provide an efficient means of determining the price of the product traded — it may be a share, a bond or the price of an underlying commodity. For example, the price of copper is fixed by reference to the price at which it is trading on the London Metal Exchange.

Markets also enable risk to be transferred. This is the second need that a market answers. Those who are averse to risk may transfer it to those who are tolerant of it. Consider a manufacturer of catalytic converters for cars. The manufacturer wants to know the profit from each converter. If a producer of converters is to supply a car manufacturer at a fixed price over the next year, it must try to ensure that the price of the palladium or platinum used in the converters will not vary. The futures market enables the producer to hedge the risk of price movements by buying certain futures contracts.

At its simplest, in return for an agreed fixed premium the producer is no longer exposed to a price movement which could wipe out his profits. Someone in the market who assesses the risk differently, has indemnified him against such movements.

Both functions (to provide an efficient means of determining the price level of products and to transfer efficiently the risk of price movements) depend on the reliability, and the perceived reliability, of the prices used.

Markets should be a focus of reliable information about a product. The trading activities of participants should be a reliable indication of the value placed on the product. If the information received by the market is not reliable or the trading activities of participants are thought to be artificial, then confidence in the price and the market will diminish. Assets will be mis-priced, some participants will stay out of the market altogether and others will spend more money conducting their own enquiries and double checking the validity of statements made.

The volatility of prices may increase as rumour, counter-rumour and fear dominate the price-formation process.

As volatility and prices increase, the producer of catalytic converters would find it more expensive to transfer the risk of price movements to the market. Since the changes in price movements are increased, the producer would have to pay more to guard against them.

Markets and exchanges

The label “market” is often used interchangeably with “exchange”. They are not synonymous but, for convenience, this article uses the term “exchanges” to refer to the organised and supervised environment in which certain markets have their principal existence, and it concentrates on those markets rather than markets generally.

If the information received by the market is not reliable or the trading activities of participants are thought to be artificial, then confidence in the price and the market will diminish

The rules and practices of the exchange must ensure that business conducted by means of its facilities is conducted in an orderly manner and so as to afford proper protection to investors

Regulators are concerned about the general economic damage that manipulation causes through the mis-pricing of assets and the mis-allocation of resources. They also aim to protect investors. These complementary concerns have led to two approaches to market manipulation. The first seeks to address the interests of the environment, the second to address the conduct of entities within the environment.

The nature of regulation and the structure of the Financial Services Act 1986 recognises these concerns and approaches and their use in analysing and evaluating the nature of activities. For example, investment exchanges recognised under Section 36 of the Financial Services Act 1986 must satisfy the requirements of Schedule 4. One of the obligations under Schedule 4 is found in paragraph 2 (1) under the heading *Safeguards for Investors* and states: "The rules and practices of the exchange must ensure that business conducted by means of its facilities is conducted in an orderly manner and so as to afford proper protection to investors."

There is a proper market requirement in paragraph 2 (2) and both of these are supported by paragraph 5 under the heading, *Promotion and Maintenance of Standards,* which commences: "The exchange must be able and willing to promote and maintain high standards of integrity and fair dealing in the carrying on of investment business ..."

What constitutes market manipulation and the appropriate response, is in practice decided not only by considerations of economic efficiency but also those of ethics. Norman Barry[1] said of insider dealing: "The real controversy is not about the need for some utility-independent moral rules..., but about their precise content and the domain over which they are enforceable."

In considering what is and what is not acceptable market conduct in the UK, care should be taken to distinguish between regulatory responses which seek to maintain orderly markets and reduce economic damage, and those which involve an assessment of the moral culpability of the participants.

Where manipulation is alleged to have occurred, proving intent can be extremely difficult. Inferences may be drawn from the surrounding circumstances but the stigma of manipulation ensures that the accused will criticise a system that judges on inferences that are really leaps of faith.

Often such disputation is not the primary concern of regulators. Steps may be taken, for example, to ensure price or position limits are imposed in order to re-balance the environment. These steps are needed whether or not anyone is to blame. (If a traffic jam is the result of an accident caused by a dangerous driver, it is right that dangerous driving be deterred through the driver being held to blame.) Markets may be disorderly merely because of the diverse competitive interests of human beings.

Manipulative activities

One classification (see Box 1) divides unwarranted activities into two classes: information-based abuses and trade-based manipulations. Other types of market abuse are insider trading and front-running.

Information-based abuses are those in which the manipulator creates a false market by disseminating false or misleading information. Disseminating such information via, for example, internet discussion groups, to "talk up" share prices, is universally considered manipulative.

Trade-based manipulation is characterised by the manipulator leading others to believe that trades are or should be occurring in certain volumes or at certain prices and to treat that information as if it was a *bona fide* reflection of the needs and beliefs of market participants. If a person conspires with another to carry out 20 or 30 trades at ever-increasing prices and everyone can see the activity, it is likely that an innocent party may buy from the first at or around that price.

There are restrictions to the creation of false or misleading appearances of active trading on all the world's exchanges. In some cases the restrictions are particularised. Trades in which there is no real change in beneficial ownership, where prices are pre-arranged and not obtained through the price-discovery processes, or where private agreements are reached to indemnify buyers against loss, such that they do not take on any market risk, are commonly seen as wrongs.

Many strategies involve both information-based and trade-based manipulation. The crudest forms of "boiler-room" operations involve pressure-selling using misleading information. The manipulators may be trading among themselves to enhance the appearance of interest in the share and support its price. Any damage to an organised market or its participants from one or two of these trades will usually be extremely low. But the preservation of orderly markets and the proper protection of investors would be put at risk were such practices to become widespread.

Quite apart from any economic damage, most market participants expect their peers to act with

Box 1 MANIPULATIVE MARKET CONDUCT — EXAMPLES

(A) Trade-Based Manipulations

(1) Generalised (with no specific time window)

Actions intended to create a shortage of stock:

- corners
- squeezes

Actions intended to create an impression of false activity for example to ramp:

- wash trades
- matched orders
- support operations
- firms buying own shares (or using concert parties) to raise price or prevent it falling

(2) Time-Specific (manipulations within a specific time frame, eg related to a contract):

- moving share price on a given day to a trigger bonus clause in remuneration contracts
- trading specifically to interfere with the price or settlement of derivative contracts
- trading to influence the particular spot price for a stock that had been agreed as determining the value of a transaction
- marking the close (changing prices at market close).

(B) Information-Related Manipulations

(1) False or Misleading Information:

- making untrue statements of material facts
- spreading false rumours to induce buying or selling by others

(2) Failure to release information :

- non-disclosure of material facts (including material interests)

This classification was developed by Francis McGee in the Bank's Regulatory Policy Division.

integrity. A false trade will be seen and reacted to as morally wrong. From any view, therefore, they are manipulative.

Classifying another trade-based activity as manipulative — an activity which results in a *squeeze* or *corner* — generates much debate. The terms *squeeze* and *corner* are used almost interchangeably, although this is technically incorrect. Since in practice the one rarely comes without the other, I shall use the term *squeeze*.

Before characterising a squeeze as "manipulative", consideration must be given to its potential for economic damage and its impact from a utility-independent ethical stance. Only then can the appropriate regulatory response in a particular market be decided upon.

A squeeze happens when the owner of a huge amount of a commodity goes into a futures market and buys contracts requiring people to deliver that commodity at a specified price in the future. Those who are bound to deliver discover they may not be able to. Their efforts to obtain the commodity drive up its price. The holder of the commodity stock then slowly leaks it out at the new high price to those who have to sell it back at the lower price which had been agreed on the futures market some months before.

During a squeeze, a graph of the price against time generally has its own characteristics — similar to the representation of a heart beat. There is a spike as the price climbs rapidly and then as the pressure is released it drops, not back to the equilibrium price, but a little below that price, before it returns to the equilibrium level. This dip below the line is called, "burying the corpse". It is caused because supply briefly exceeds demand as the efforts of those who needed supplies diverted the commodity from other users into the delivery mechanisms of the market.

It is difficult to argue that the intention of a person creating a corner or squeeze is to induce or inhibit trades, given shorts will already have contractually committed to trades with the longs irrespective of the manipulation

Should those who participate in the squeeze be seen as morally culpable? To what extent, if any, do squeezes damage the efficiency of markets?

The answers to these questions are important because there are different regulatory responses to situations which damage market efficiency and to those which are moral wrongs. These can be seen in the provisions of statute, regulation and guidance.

Legislative environment

Section 47 FSA 1986 includes the nearest equivalents to criminal offences of manipulation. One is the dissemination of false or misleading information about investments to induce others (broadly) to buy or sell or exercise or refrain from exercising rights connected with the investment.

The other offence is creating a false or misleading impression of the market in, or price or value of, investments when done for the same improper purpose.

Criminal offences under Section 47 require certain events and the existence of specified intentions or

purposes on the part on the wrongdoer. The range of wrongful purposes, while certainly not narrow, has been argued by others to be insufficiently wide. In his December 1996 paper, *Manipulations of Metals Futures: Lessons from Sumitomo*, Professor Christopher Gilbert[2] writes that it is difficult to argue that the intention of a person creating a corner or squeeze is to induce or inhibit trades, given shorts will already have been contractually committed to trades with the longs irrespective of the manipulation.

Whilst I do not propose to enter into a debate about Section 47, it cannot be denied that it stands out, in contrast with the provisions mentioned below, because of its application to any person and regardless of their status as a licensed or recognised entity under the Financial Services Act.

SIB principles

In discussions about market manipulation, reference is often made to the "SIB Principles", in particular Principle 3.

The 10 Principles, were promulgated by the SIB in 1990. They are intended to form a universal statement of the standards expected and they apply directly to the conduct of investment business and to the financial standing of all authorised persons.

Principle 1, *Integrity*, states: "A firm should observe high standards of integrity and fair dealing." Principle 3, which deals with market practice, commences: "A firm should observe high standards of market conduct."

An essential characteristic of exchanges is that the parties to the transaction are not entitled to retain ownership of certain information about price and volume — the exchange appropriates such knowledge and makes it available to all

There is no specific requirement under the FSA for firms to become authorised persons by reason of their being members of an organised market (whether or not it is an exchange).

The need for authorisation depends on whether or not a firm is conducting investment business, and many firms whose only business involves trading their own funds, will neither be nor need to be authorised persons. Indeed, in the commodity markets, even those which deal for clients may not be authorised persons because they are not dealing in investments but the underlying commodity, for example in copper or cocoa itself.

For this reason, in any organised market a number of the users will not be subject to the SIB Principles in carrying on their business. This limits the effectiveness of the statements of what constitutes high standards of market conduct, and at times a stricter approach will be applied to the activities of regulated firms than to others.

Broadly, the requirement for authorisation exists where activities involve direct transactions with investors. In this way, investor protection issues are adequately addressed in relation to entity-based risks (those arising from the relationship a firm has with its customer).

More difficult is the environment-based risk (where the activities of someone else drive prices away

from a true reflection of supply and demand estimations and predictions). The investor's broker may get the best traded price, but it may not be as good a price as it would have obtained had the manipulative activities not been present.

There is therefore a need to improve the environment. Organised markets, whether involving anonymous trading or not, are more than just the aggregation of a number of bilateral contracts. Buyers and sellers are not merely brought together, nor is information. The information that is generated by their trading is essential to the price discovery process.

Were I to sell you my motorcycle, the price would be a private matter between us. But an essential characteristic of exchanges is that the parties to the transaction are not entitled to retain ownership of certain information about price and volume. The exchange appropriates such knowledge and makes it available to all. Exchanges have rules which govern the activities of all exchange members whether or not they are authorised persons.

An exchange member's activities can be scrutinised and subjected to exchange rules designed to promote efficiency and for investor protection. The guidance release of 1993 issued by the SIB, *Proper Trades in Relation to on-exchange Derivatives*, addresses exchange participants and those who deal directly or indirectly through them. It shows how firms may fail to observe high standards of market conduct as required under Principle 3, which, as explained, will only apply to those who are authorised persons.

This further exemplifies the current legislative systems which imposes the law on everyone — the SIB Principles on the authorised firms, whether exchange members or not (the latter would include fund managers) and the exchange rules which apply to all, but only, exchange members, whether authorised firms or not.

> There will always be a temptation for those who would like the financial futures contract to be more valuable to try to alter the price of the underlying index

The guidance also related to the statutory recognition requirements for exchanges themselves. It noted the result of improper trades may be to call into question the recognition requirement for the proper protection of investors or the maintenance of a proper market, for example by giving rise to misleading impressions as to the value of a particular contract. The guidance stated that in such an event, it would be appropriate for the exchange to take action to end the improper market situation.

The first approach (relating the appropriateness of the activity to Principle 3) addresses the actions of the firm and its effect on others, and through disciplinary process seeks to deter activities that are considered unacceptable. The second approach (which relates to the appropriateness of the activity to proper markets) addresses the effect on the trading environment and, through an intervention process, seeks to protect that environment.

Prevention

Leaving the problems of how authorities can effectively regulate market users (that is those whose activities can pollute the market) if they are not exchange members or authorised persons, this final section deals with the exchange environment, design of contracts and disciplinary processes.

Regulatory authorities around the world have learnt how important are issues of contract design, market surveillance and market sanctions in international markets.

Where prices of futures contracts are set by reference to some other

financial instrument or index at a certain time on a certain date, there will always be a temptation for those who would like the financial futures contract to be more valuable to try to alter the price of the underlying index. Contracts have been altered to make it more expensive and risky to try to do that, for example, by altering the manner and timing of the calculation of the index. To hold the price for two minutes may cost a lot of money on some markets; to hold that price for an hour may be impossible.

But in commodities, the characteristics are different — particularly when supply is limited, subject to relatively high production, transport, storage or delivery costs, or subject to seasonal shortages or long production lead-times.

The London Communiqué,[3] recognised both the distinction between situations which damage the market and those which involve, in terms of the Communiqué, a necessity to punish abusive conduct.

In matters of contract design and the market environment, discussed in the Communiqué, under the heading *Market Surveillance,* the authorities reached the following points of consensus:

- That the proper design of commodity contracts:
  - not only enhances their economic utility but is also a critical aspect of market integrity in that proper design reduces their susceptibility to market abuses, including manipulation;
  - complements but is not a substitute for an appropriate market surveillance programme.
- That an active and effective market surveillance programme by the market regulatory authority:
  - is essential to ensure that commodity futures markets operate in a fair and orderly manner;
  - should be designed to detect, to prevent, to take corrective action with respect to, and to punish abusive conduct ...
- That regulatory measures which facilitate the identification of large exposures should be developed. These measures may involve access to information relating to persons holding or controlling such large exposures and their related derivatives, over-the-counter and cash market positions. These measures may also involve access to information on deliveries.

The authorities also agreed to promote those matters concerning contact design and the adoption of rules and procedures that authorise a market authority to intervene in a market situation[4] and, if necessary, to punish abusive conduct.

One area which has received less publicity is the design of exchange disciplinary processes. This can no longer be considered in relation to a particular exchange as certain instruments are traded in more than one exchange; they are also traded over-the-counter as well as in cash markets. So those responsible for disciplinary procedures must be informed of the treatment of faults and abuses in these environments.

Even if rules are, on the face of it, identical, if different exchanges have different enforcement policies, or if the level of fines for default differs between exchanges, one exchange may become more attractive to the manipulators than another. International agreement on these matters would be complex but it is hoped that, at least within the UK, further thought can be given to this area.

The Market Conduct Group will consider many of these matters with a view to publishing a discussion document to open debate among market participants and the public generally.■

NOTES

1 *Insider Dealing — An Exploration into the Existing Law and Practice* by Professor Norman Barry, published by Foundation for Business Responsibilities issues paper No 1 June 1996.
2 Professor of Applied Econometrics, Queen Mary and Westfield College, University of London.
3 On supervision of commodities futures markets issued by representatives of regulatory authorities of 17 countries responsible for supervising commodities futures markets which met in London on 25-26 November.
4 An article which questions the efficiency of interventions generally (though not about the London Communiqué) is "*Squeezes, Corpses, and the Anti-Manipulation Provisions of the Commodity Exchange Act*", by Craig Pirrong in CATO Regulation (http\\www.cato.org/pubs/regulation). The article also contains a more detailed description of market conditions in a squeeze.

GLOBAL INSTITUTIONS, NATIONAL SUPERVISION AND SYSTEMIC RISK

By John Heimann, Merrill Lynch
Lord Alexander of Weedon, NatWest Group

A study by the Group of Thirty — a Washington-based body of academics, bankers and government officials — into the management and supervision of global financial institutions and the potential for systemic risk, found that an industry initiative is needed to promote consistently high standards of risk management and control for global institutions.

The threat of serious disruption to the international financial system may be small, but it is nonetheless a serious concern. Rapid changes occurring in the international financial system have resulted in new sources of, and transmission mechanisms for, systemic shocks. The institutions active in international markets are becoming larger and more complex. A rapidly-growing volume of transactions and an expanding array of new products are moving across borders at ever faster speeds.

New entrants to the system, often from outside the G-10 countries, are less well known to the international financial community and may be weakly supervised or not supervised at all. Indeed, the global operations of major financial institutions and markets have outgrown the national accounting, legal and supervisory systems on which the safety and soundness of individual institutions and the financial system rely.

These developments prompted the Group of Thirty to commission a study of the management and supervision of global financial institutions and the potential for systemic risk. The Group had done substantial work aimed at reducing risk in securities and derivatives markets, first in its 1989 report *Clearance and Settlements in World Securities Markets* and then in *Derivatives: Practices and Principles* in 1993.

However, neither study focused on the safety and stability of the financial system as a whole. It was to consider more fully the implications of the emergence of global institutions and markets that, two years ago, we agreed to co-chair a new study group. We invited a distinguished group of financial executives, senior supervisors and experts from the law and academia to take part.

It should be noted that our deliberations took place against a background that was far from calm. Barings collapsed under the weight of losses by a rogue trader in 1995. Many other financial institutions have suffered trading losses arising from a variety of sources in the intervening years. The largest cases involved accumulated losses from bond and commodities trading that had been successfully hidden by traders. Other cases involved lesser failures of internal controls and risk modelling and monitoring. Taken together, they generated a high level of official concern.

Most notably, the safety of the international financial system and

the need to strengthen supervision have become regular topics at G-7 Economic Summits and featured in the last three summit communiqués.

The Basle Committee and IOSCO have redoubled their efforts to improve international supervision and co-ordination and have expanded their co-operation to include insurance in the pursuit of enhanced supervision of financial conglomerates, now formalised in the "Joint Forum".

The Barings collapse triggered the most specific action. Beginning with the Windsor Declaration in May 1995, supervisors of the world's major futures and options markets have expanded their co-operation and information sharing, especially with regard to large exposures. New agreements have been signed among exchanges and among their supervisors to strengthen markets and market infrastructure.

While these steps have offered some reassurance, the study group remained convinced that more was needed than the enhanced co-operation embodied in these various supervisory initiatives.

To assess if these concerns were widely shared among financial institutions, the group sought the assistance of KPMG Peat Marwick both in designing and conducting a survey of global financial institutions. A questionnaire was prepared and sent to 90 financial institutions, most of them large global banks but including a selection of large investment banks, insurance firms and non-bank financial firms.

Sixty-six institutions, about 75 per cent of the sample, responded to the survey. The respondents (Box 1) represented a reasonable cross-section, not of the financial services industry overall, but of global financial institutions.

Many survey questions were general and impressionistic; and the answers lent themselves to a range of interpretations. Therefore, the study group conducted follow-up interviews with a dozen institutions in Europe, the US and Japan.

Serious disruption

While the survey yielded a wide range of information, several results were particularly noteworthy. First, respondents not only agreed that a serious disruption of the international financial system was possible, but rated the likelihood at one in five over the next five years.

At the same time, respondents generally doubted that such a shock would threaten widespread disruption of the financial system because of what they perceived to be the vitality of the major institutions and the ability of central bankers and supervisors to limit damage and calm markets.

Despite this expressed confidence, the firms had concerns about the quality of risk management in areas such as internal control, risk-measurement systems, legal risk, the efficacy of risk-reduction techniques such as collateral, and the safety of clearance and settlement systems. They acknowledged that their confidence regarding counter-party risk management was based on very thin information. There was almost unanimous support for action by industry and further steps by supervisors to strengthen the international financial system.

Confident that our concerns were justified, the study group set to work. Our focus was to be on shocks that could cause international systemic risk, whether arising from the spillover of domestic shocks or disruption of institutions, markets or the clearing and settlements mechanisms which now link domestic financial systems.

Looking back through recent history, the failure of Bankhaus Herstatt in 1974, the LDC debt crisis of the 1980s, the Mexican peso crisis of 1995 and others represented shocks to the international financial system. Yet none brought down the system and each was successfully resolved with the aid of some sort of official action, ranging from official financial support to collaboration among central banks and market participants to prevent gridlock in foreign exchange markets.

However, the growth in size, velocity and complexity of international transactions, and the higher concentration of trading activity in a relatively small number of institutions that play a leading role in multiple markets, suggest that regulators will find it increasingly difficult to improvise effective crisis-management in the event of a shock occurring. The threshold of concern for the study group was a shock that would not only threaten a major

Box 1 SURVEY RESPONSES

Australia:
Australian Mutual Provident Society
ANZ Banking Group
Commonwealth Bank of Australia
National Australia Bank
Westpac Banking Corp

Belgium:
Générale Banque

Canada:
Bank of Montreal
Bank of Nova Scotia
Canadian Imperial Bank of Commerce
Royal Bank of Canada

France:
Banque Indosuez
Banque National de Paris
Banque Paribas
Crédit Lyonnais
Crédit Agricole

Germany:
Commerzbank
Deutsche Bank
Dresdner Bank

Hong Kong:
Bank of East Asia

Italy:
Banca Nazionale del Lavoro
Banca di Roma
Cariplo
Credito Italiano
Eptasim
Istituto Bancario San Paolo di Torino

Japan:
Bank of Tokyo-Mitsubishi
Dai-Ichi Kangyo Bank
Daiwa Securities
Fuji Bank
Industrial Bank of Japan
Meiji Life Insurance
Mitsui Marine and Fire
Nikko Securities
Nippon Life
Nomura Securities
Sakura Bank
Sanwa Bank
Sumitomo Bank
Yamaichi Securities
Yasuda Fire and Marine

Netherlands:
ABN-AMRO
Fortis Group

Spain:
Banco Santander

Switzerland:
Swiss Bank Corporation
Union Bank of Switzerland

United Kingdom:
Abbey National
Barclays Bank
HSBC Holdings
Lloyds TSB Group
NatWest Group
Schroders plc
Standard Chartered

United States:
American International Group
Bank of America
Bankers Trust
Chase Manhattan
Citibank
Depository Trust Company
First Chicago
General Reinsurance
Goldman Sachs
Lehman Brothers
Metropolitan Life
Morgan Stanley
Republic Bank
Salomon Brothers

Total: 66

financial institution, but could cascade through the international financial system threatening additional major institutions and, in turn, the financial infrastructure of the entire international system itself. While past shocks and crises have not risen to this level, those in the study group agreed that such a situation could not be ruled out.

One reason for this is the emergence of large integrated financial firms with corporate structures and finances of extreme complexity and global scope. The study group focused on a set of core institutions — defined as large, internationally active commercial banks, which are major participants in large-value payment systems, along with the largest investment banks which are key participants in the clearing and settlement systems for globally-traded securities.

Core institutions do not include large insurance companies or large finance companies, even those that are highly active in international markets. Although these institutions are important by virtue of their size, they present substantially less risk to the system than the failure of the core institutions of which they are customers.

Core institutions tend to be well capitalised and have their headquarters in well-supervised jurisdictions. While it makes sense for international financial activity to be concentrated in a small number of capable firms, this concentration is worrying given the complexity of their interconnections. These institutions tend to be each other's largest counterparties, have extensive dealings with many of the same customers and are members of the same clearing houses and exchanges.

Direct and indirect risk exposures within this group are so complicated and opaque, and change so rapidly, that it is virtually impossible to monitor them in anything like real-time. Accounting and disclosure practices have not begun to keep pace; risk exposures can build up undetected by existing monitoring systems. In a crisis, both peer institutions and regulators may feel they have too little information about the condition of a faltering institution and insufficient time to assess this complex information to warrant taking action.

An institution active in scores of jurisdictions is also subject to the vagaries and interactions of the laws and regulations of each. The sudden collapse of a large, internationally active participant in a payments system would, for example, cause unexpected difficulties for all of its counterparties if agreed netting arrangements prove not to be legally binding — even a netted claim may not be collectible in an emergency.

On the positive side, improvements in technology are making management information and control systems and analytic models, which help institutions manage risks, a lot more effective. Positive developments include:

- Continual improvements in measuring credit and market risk.
- Enhanced diversification of portfolios across markets.
- Expanded use of netting and collateral.
- Greater disclosure of off balance sheet risk.
- Substantial increases in equity capital of many major financial institutions.
- Financial sector consolidation.
- The growth of securitisation.

Despite these improvements, substantial uncertainty remains over the level and direction of risk in the system and the effectiveness of measures to control it. Given the speed with which market participants can react to events anywhere in the world, reaction times in the event of a shock are virtually instantaneous. Managers and regulators have very little time to analyse the problem, formulate and implement a response. The sheer velocity with which international transactions take place may increase the risk of a misjudgement.

Market discipline

The study group concluded that confronting these challenges successfully will require improvements in management, market discipline and supervision. Large, multi-jurisdictional, financial firms which have complex corporate structures and finances require sophisticated risk management on a global basis. Counterparties wishing to deal with them and supervisors charged with their oversight need to adopt a similarly global view of these firms' operations and finances. National systems of accounting, reporting and supervision, however, fall short of this objective. The legal structure upon which national regulators focus is no longer relevant to overall control of risk. Indeed, undue focus on legal structure could diminish the effectiveness of overall risk-control in a global group.

Cognisant of this challenge, financial institutions have devoted substantial resources to improving risk management and global controls. National supervisors have likewise focused their attention on risk management, including active board and management oversight; the capacity to measure, monitor and control risks by activity; and the adequacy of internal controls.

The many international supervisory initiatives that are under way to expand co-operation and improve co-ordination are signs of progress. But there are limits to what can be

Box 2 MEMBERS OF THE STUDY GROUP

Co-Chairs:

Rt Hon Lord Alexander of Weedon QC
Chairman
NatWest Group

Mr John G Heimann
Chairman
Global Financial Institutions
Merrill Lynch

Members:

Dr Ulrich Cartellieri
Member of the Board of Managing Directors
Deutsche Bank AG

Prof Charles Goodhart
Norman Sosnow Professor of Banking and Finance
London School of Economics

Prof Richard Herring
Julian Aresty Professor of Finance
The Wharton School
University of Pennsylvania

Mr H Rodgin Cohen
Banking Partner
Sullivan and Cromwell

Mr Harry P Kamen
Chairman of the Board & CEO
Metropolitan Life Insurance Company

Sir David Walker
Chairman
Morgan Stanley Group (Europe) Plc

Mr Paul Collins
Vice Chairman
Citibank NA

Dr Tommaso Padoa-Schioppa
Chairman
CONSOB

Mr John Walsh
Executive Director
The Group of Thirty

Mr Tom de Swaan
Executive Director
De Nederlandsche Bank NV

Mr Brian Quinn
Chairman
Nomura Bank International plc

Mr Nicholas S Wilson
Legal Adviser to the Chairman
NatWest Group (Retired)

Mr Toyoo Gyohten
Senior Adviser
The Bank of Tokyo-Mitsubishi Ltd

Dott Mario Sarcinelli
Chairman
Banca Nazionale del Lavoro

Mr Kosuke Nakahira
Special Adviser to the Minister of Finance Japan

Sir Andrew Large
Chairman
Securities and Investments Board

Mr Arthur Levitt, Jr
Chairman
Securities and Exchange Commission

Mr William McDonough
President
Federal Reserve Bank of New York

Mr Jean Peyrelevade
Chairman and Chief Executive Officer
Credit Lyonnais

achieved in this way. The group concluded that an industry initiative is needed to promote a consistent, high standard of risk management and control for global firms.

Major financial institutions should lead the development of global risk management principles, in co-operation with supervisors and as a continuing enterprise.

A single, globally consistent, framework should apply to all global institutions. This framework must start from the premise that it is the board and management of global

institutions that have the fundamental responsibility for ensuring the stability of financial institutions, thereby limiting systemic risk.

Although this is not a new thought, assigning enhanced responsibility to financial institutions suggests an approach that is much more than the status quo. It implies that supervisors will rely to a much greater extent on the institutions that they supervise, and that the institutions themselves will accept the responsibility to improve the structure of, and discipline imposed by, their internal control functions.

Furthermore, it suggests a regime for global institutions that is different and more elaborate than that imposed on smaller or less geographically diversified competitors, although the responsibility of management in the area of internal controls is no less at smaller firms.

There are two reasons for this change in approach. First, by far the largest proportion of serious financial problems which beset financial organisations (whether or not they involve systemic risk) arise from problems which the organisations ought to be able to control themselves. By way of example, the failures of Continental Illinois and Barings, and the trading losses at institutions such as Daiwa Bank, Morgan Grenfell and Sumitomo Corporation could have been avoided if these firms had had stronger management oversight and fully comprehensive internal controls. Survey respondents listed three likely causes of failure of a financial institution:

- Inadequate management procedures.
- Failure of internal controls.
- Actions of a rogue employee.

Second, it is patently unreasonable to expect supervisors alone to keep global institutions from having mishaps. Even if they had the resources, their task cannot be to evaluate the quality of traders or the current daily Value-at-Risk in trading exotic derivative instruments. The speed and complexity of innovation in the markets, the supervisors' inevitable position "behind the curve" and their real handicaps in competing for talented staff all argue for private institutions to take on the responsibility.

An industry framework must address the difficulties posed by institutional complexity, market volatility and geography. Yet the greatest challenge is the excessively risky behaviour that is the most likely underlying cause of losses to a financial institution. Since no code of ethics is likely to eliminate this tendency, an institution's control system must at least aim to check the excesses of human nature by establishing an internal vigilance system that will provide early warning of such behaviour. Controls must withstand both external shocks and internal breakdowns.

Comprehensive and effective controls must cover:

- the management structure;
- the internal audit function;
- the risk management function;

Lord Alexander

John Heimann

- and the compliance functions, including legal, regulatory and ethical review.

Implementation will call for a major commitment in the areas of management, staffing, investment in global risk-monitoring systems and a more sophisticated approach to many categories of risk and risk control.

At the same time, the study group is proposing that global institutions undertake the difficult task of devising a framework that is appropriately aligned with supervisory requirements.

The objectives and methodologies of a firm's management and supervisors do not always coincide. In some cases, they will have to be reconciled. To expedite the development of a framework, the industry and the supervisory community will have to maintain close working contact and co-operate throughout the process.

While the study group envisages creation of this framework as a voluntary exercise, if the framework comes to be identified with a strong internal control environment, and if strong controls are viewed as a key component of effective management, the markets are likely to provide incentives to implement it — in the form of higher credit ratings or earnings multiples. Likewise, supervisors, whose duty it is to make sure that management pursues strong internal controls in any case, are likely to provide direct regulatory incentives for the general adoption of this framework.

Independent audit

Global institutions should subject their world-wide operations to review by a single, independent, external audit firm or group, and should agree upon more consistent and meaningful disclosure of financial and risk information on a global consolidated basis.

Global institutions require a truly global audit that provides more than the traditional audited financial statement. As a starting point, a single external auditing firm or group should act as the principal auditors and report on the global audit of the global institution. The clear goal of the board and its management should be the most comprehensive audit possible, even if this means changing audit firms. Nothing less should be acceptable.

Institutions should also support adoption of common accounting standards internationally. A project is under way in the International Accounting Standards Committee and it should be supported.

The other key ingredient in improving the external audit is an expansion of what is reviewed. The audit proposed in the report would go beyond traditional review of a firm's financial statements. It would assess whether the risk-management policies and procedures promulgated by senior management to fulfil the objectives of the industry framework had in fact been implemented. The independent external auditor would attest, in accordance with accepted auditing standards, to the implementation of the institution's internal controls generally and, in particular, of internal controls over the preparation of applicable financial statements and risk information on a comprehensive, global basis.

Information from the expanded audit should be made available to supervisors and the public. How best to provide this information to supervisors should be a topic for consideration by the industry committee and relevant supervisors. The extent to which supervisors rely on the reports of external auditors will depend on the structure of supervision in each country, but the additional information should better inform the supervisory process, even where direct examination is the norm.

The industry committee should also agree upon a framework for more consistent and meaningful disclosure of financial and risk information to the public. This should include business objectives, risk appetite, approach to risk management and the actual risk-earnings performance. An agreed approach for all core institutions would overcome the reluctance of individual firms to publish information about their inner workings that is not matched by other firms.

Legal standards

Assessing legal risk in international transactions should take into account the enforceability of contract provisions, including netting, and the effectiveness of insolvency procedures. To reduce such risk, countries should strengthen legal standards.

Enforceability of netting, collateral and derivatives contracts, and incompatibilities in national insolvency laws have concerned global institutions and their supervisors for a number of years.

Despite considerable attention to these issues, problems remain. Netting is legally binding in only a few countries. There is similar cause for concern over collateral arrangements, both as a legal matter and as a management practice; defined management standards are needed.

Perhaps most intractable are inconsistencies in national insolvency laws. While these are not likely to be resolved soon, other work by the Group of Thirty indicates that the most important considerations in achieving a speedy resolution are:

- Effective netting.
- Ready access to good information on an insolvent firm's exposures.
- Legal distinction between the firm's own and client funds.

Careful evaluation of legal risk as part of overall risk control should provide an incentive, at the margin, to negotiate contracts in safer jurisdictions. Over the long term, the goal must be stronger national laws on netting and on insolvency.

National and functional supervisors should agree upon a lead co-ordinator for global firms, apply a global review framework to all parts of a financial group and agree upon consistent reporting requirements for global firms.

Achieving a system of supervision that works as effectively as if there were a global supervisor requires someone at the centre of the process to co-ordinate contacts among supervisors and their sharing of information.

Bank and securities supervisors are now pursuing a lead co-ordinator model for information-sharing in emergencies and this model should become part of the ongoing process of supervision as well. Over the long-term, the role of administrative co-ordinator may change to that of a co-ordinating supervisor who will take the lead in routine supervisory matters affecting a global firm.

With or without a strong co-ordinator at its centre, the basic underpinning of international supervision should be strong capital standards and a strong framework for comprehensive and effective management controls as described above. The framework would apply to the entire global institution, including subsidiaries and affiliates that may not be subject to supervision at present. Ideally, it should be based upon, if not identical to, the industry framework described previously.

However, it can only become the standard for global supervision if it is acceptable to national and functional supervisors, which will require close collaboration in its design. Although this will be complicated, it is clearly in the interests of supervisors and supervised institutions to do so.

Understanding the intricacies of risk management systems and overseeing a complex firm in a crisis will require a high level of skills — supervisors will have to exercise judgement about a firm

The resulting framework could then serve as a consistent basis for evaluating all global institutions. It would serve as a general blueprint, within which detailed procedures would be implemented by each firm. The evaluation would be performed in the first instance by an institution's internal audit function, and would be verified by the external auditor. The external audit would be provided to supervisors in appropriate form.

This audit and evaluation would not be a substitute for supervisory judgement, nor relieve supervisors of their statutory duty to evaluate the firms they supervise. It would provide additional information to supervisors on critical issues and, to the extent that supervisors were to pursue their own evaluation of the firm, they would likely use the same framework.

Understanding the intricacies of risk management systems and overseeing a complex firm in a crisis will require a high level of skill. Supervisors will have to exercise a lot of judgement about a firm, making assessments of risk, not only compliance with rules. They will be called upon to provide feedback to the firm. People with scarce skills will have to be recruited, and they are likely to demand compensation closer to market rates than current public-sector pay scales.

Regulatory capture

Keeping supervisors' knowledge up to date may require structured training in co-operation with industry, or a system of inward and outward secondments between supervisors and supervised. These steps would bring supervisors closer to the market, but carry the potential risk or perception of regulatory capture and conflict of interest.

Effective co-ordination between supervisors will only come about if they recognise their mutual interdependence and adopt common techniques

Co-ordination of supervisors across borders and functions is important in achieving a global view of a firm. Naming a lead co-ordinator and encouraging all supervisors to use the same evaluation framework would simplify this process. A common capital framework now exists for banks.

Going further, effective co-ordination between supervisors will only come about if they recognise their mutual interdependence and adopt common techniques. This might make co-ordinated, global inspections possible over time. But even where multiple reviews of management controls by an independent external auditor and various supervisors continue to occur, at least they would all be based upon a consistent, mutually reinforcing global framework.

Application of the new framework in the course of supervisory reviews is not, of course, the same as having it fully implemented by financial institutions. The preferable approach is to provide incentives for a financial institution to make the agreed framework part of its internal culture. Supervisors can offer a variety of incentives, positive and negative, to global institutions in areas such as capital, differential supervisory monitoring and reporting, reduced supervisory fees, fewer prescriptive rules or harsher penalties for poor performers.

The incentive for the industry to develop a global framework would be greatly increased if supervisors used the occasion of reaching agreement with the industry on such standards to promulgate consistent, global supervisory reporting requirements to the maximum extent possible. With nearly half of survey respondents filing in excess of 500 supervisory reports a year, and over half operating in more than 25 countries, simplification of reporting

would be a powerful incentive to co-operate.

Promoting adherence to a global control framework would, of course, be only one ingredient in the supervisors' broader efforts to ensure the safety of markets and of the international financial system, albeit a very important part of the overall picture. Supervisory responsibility for protection of depositors, transparency for investors, smooth functioning of markets, appropriate capital standards, crisis management and the full range of other duties would be unaffected. There would be no reduction of responsibility or yielding of sovereignty.

Ultimately, it remains the supervisor's responsibility to decide when deficiencies in management control warrant corrective action, and to initiate appropriate enforcement measures. Whether this is left to supervisory judgement, based on a specific problem-response regime or on pre-commitment by the firm to certain standards of performance, the threat of sanctions against internal management must be clear. Adoption of a consistent management framework by all supervisors would offer greater opportunity for co-ordinated action across international borders to remedy problems in global firms.

Guidelines

Supervisors should formulate risk management guidelines in organised markets and for institutions that are part of the market infrastructure. Markets and market infrastructure are of increasing importance in the global financial system. Market infrastructure includes deal-reporting and confirmation systems, clearing houses, central depositories and payment systems. These mechanisms are essential to the operation of financial markets and maintaining their integrity, financial stability, and their ability to withstand shocks and recover from disasters is essential.

Institutions must accept the need for a common framework for assessing, managing and reporting risks, and be willing to work with supervisors in developing standards

There are a number of areas in which action should be considered. There may be need for overall standards at exchanges and clearing houses regarding back-up sites, contingency planning, etc. Futures exchanges and related clearing organisations should publish information on their own finances, market protection mechanisms, sources of financial support and default procedures. Each exchange or clearing house should develop a mechanism for communicating information to market participants if and when default procedures are initiated. Cross-border co-ordination and communication among exchanges, clearing houses and their supervisors should be improved. Governments should strengthen laws and procedures for market default and protection of customer assets, funds, and positions.

The study group views these as the essential components of a coherent and acceptable international approach. While it may be difficult to put them all in place, there is little argument against them.

What is clear is that no initiative of this kind will work without two key ingredients. Major financial institutions must accept the need for a common framework for assessing, managing and reporting risks, and be willing to work with official supervisors in developing standards.

Supervisors must continue to co-operate with one another to understand the complexities of the modern financial marketplace to ensure the effectiveness and the consistency of their approaches. We hope that the study group report marks the start of that process.■

THE UK CREDIT CARD MARKET

By Collette Brooking, Bank of England

The credit card market in the UK has attracted interest over recent months, partly because of the strong growth it has enjoyed and also because of the aggressive behaviour of a number of new entrants. This article looks at the market and compares some of its characteristics with those of the credit card market in the United States.

The credit card market is unusual, so any analysis requires an understanding of the mechanics behind the product and the market. The first part of this article outlines some of the key sources of income and costs faced by card issuers and how these influence the net interest margin of the product. The next section considers the recent growth in the UK card market. Observers have commented on the similarity between the UK market now and the US market 10 years ago, so this section also concentrates on some recent developments in the US market. Then some of the similarities and differences between the UK and US card markets are examined, which may indicate whether the UK will follow the US trend and issues that may arise if it does so.

HOW CREDIT CARDS WORK

The credit card market consists of two very different businesses: card issuance — the "consumer end", which provides credit cards and bears the credit risk of the customer and merchant acquiring, and the "backroom business", which "signs up" outlets to accept credit cards and carries out processing.

The two businesses are distinct, and in the UK only a few firms are active in both. Box 1 shows the interaction between these two businesses. If the card issuer is a member of an international payments system, such as MasterCard or VISA, an additional "link" is involved between the merchant acquirer and the card issuer.[1]

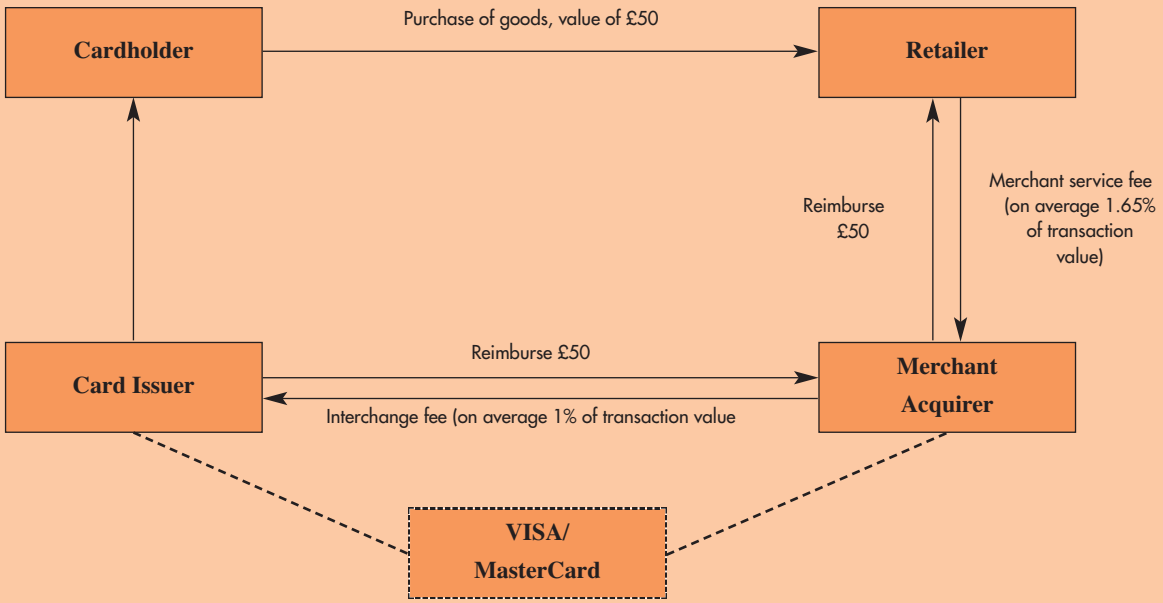
This article concentrates on the card issuance business — the area of greatest change. This business earns income from both interest and non-interest sources, although interest income is usually the main source.

Non-interest income

UK card issuers receive most of their non-interest income from the fees charged to customers. Annual card fees were introduced in 1990 and are becoming common. However, some of the new entrants to the UK card market have not charged an annual card fee — which could suggest that as competition increases, issuers will face pressure to remove card fees.

Card issuers also receive an interchange fee, a proportion of the merchant service fee that a merchant acquirer receives from a retailer. A number of card issuers charge a fee to the cardholder if they use a credit card to withdraw cash — either fixed at a minimum level or a percentage of the cash amount. Issuers may also charge penalty fees — if cardholders go over their imposed credit limit or if payments are in arrears. Penalty fees are more common in the US,

Box 1 **LINKS BETWEEN THE CARD HOLDER, RETAILER, MERCHANT ACQUIRER AND CARD ISSUER**



1. The card holder purchases goods, value of £50.
2. Retailer is reimbursed by the merchant acquirer for £50, but the retailer has to pay the merchant acquirer a merchant service fee for arranging the transaction.
3. The merchant acquirer is reimbursed by the card issuer, but has to pay an interchange fee — the acquirer receives the difference between the merchant service fee and interchange fee as income.
4. The card issuer will send a monthly statement to the card holder, normally stating the minimum balance to be paid.

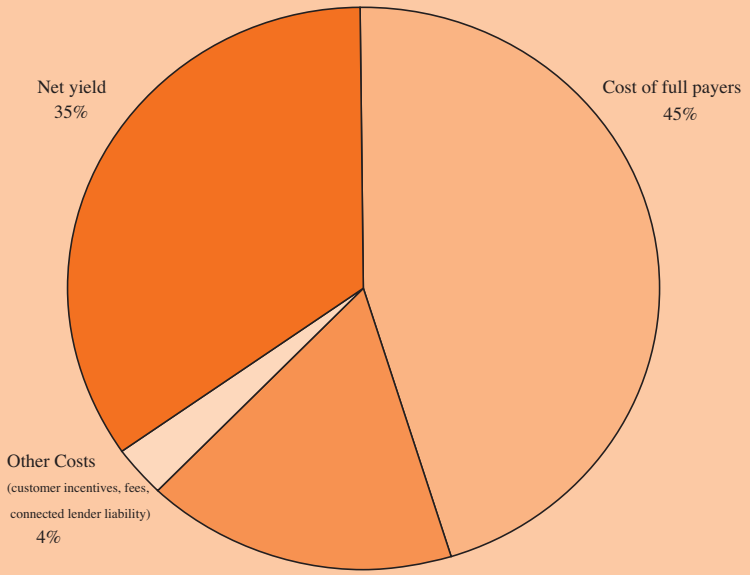
where they play an important part in the debt-recovery strategy and can represent a significant source of income.

Interest income

This is earned as issuers charge customers for using credit cards as a source of revolving credit. Card holders have the option of repaying only a proportion of the outstanding balance and they accrue interest on the amount of credit that is "rolled over" to the next statement. The level of interest income earned depends on a number of factors, primarily the rate of interest that the bank charges in relation to the cost of borrowing and the extent of any interest-free period offered. UK card companies commonly offer a period of time between the transaction date and the date of repayment, during which no interest is charged (up to 56 days). It is therefore possible for a customer to time the lending and payment of the credit card bill to maximise this interest-free period.

Interest income is significantly affected by the proportion of customers that do not pay their balances in full each month and take extended credit (and the average amount of extended credit that they take). The level of non-interest bearing loans, either through bad debts or through those customers who do pay their balance in full, will drag down the overall level of interest income — a typical credit card lender could expect to lose about half its of "headline" spread[2] by subsidising

Chart 1 DECOMPOSITION OF CREDIT CARD MARGIN 1996



cardholders that always pay off their balance (see Chart 1).

It has been estimated[3] that in 1996, 75 per cent of customers were extended credit takers, compared with an average of 59 per cent in the early 1990s (Table 1). However, these percentages are only industry estimates and the proportion of extended credit takers among card issuers is likely to vary according to the types of consumers targeted.

Those issuers who target high-risk customers may have a greater proportion taking extended credit (albeit at a higher risk of default) than those issuers who target lower-risk customers who pay off their balance fully (but do not earn much interest income).

It has been suggested that the growth in the level of extended credit takers since 1990 could reflect the introduction of an annual fee by several credit card issuers. If customers have to pay for cards, they are more likely to make use of them as a source of revolving credit. However, it is questionable whether given the size of average credit card balances in the UK, the average card fee of about £10 would be significant enough to result in such a shift.

Cost of funds

In addition to the basic costs of running any company, a card issuer must have the resources to lend money to card holders. Most issuers borrow funds and subsequently have to pay interest on that money. For simplicity, it can be assumed that the issuers base their "cost of funds" on LIBOR (London Inter-bank Offer Rate). However, this simple proxy of funds does not account for those issuers who cross-subsidise their funding or are internally funded. It should also be noted that the issuer is required to fund the entire asset base, irrespective of whether it is earning interest.

In the US securitisation is a key source of funding for specialised credit card banks, with the benefits of funding at lower capital charge and the transfer of credit risk to investors. US card issuers earn significant income from servicing securitised and sold credit card receivables. After deducting interest payments to investors, credit losses and other trust expenses from finance charge collections, they receive the residual income, the "excess spread". In recent months, securitisation in the US has slowed. This is possibly a response to rising losses on securitised portfolios which have reduced some of the excess spread and may also reflect

Table 1 PERCENTAGE OF INTEREST-INCURRING BALANCES 1990–96 (UK)

Year	1990	1991	1992	1993	1994	1995	1996
Percentage of balances incurring interest	59	66	67	69	73	73	75

Box 2 SECURITISATION OF CREDIT CARD RECEIVABLES

Essentially there are three key stages in a securitisation:

1. Issue bonds; to ensure that there is no recourse to the card issuer, assets are transferred to a separate entity; in the UK, this is normally through a special purpose vehicle (SPV). It is important to separate the interest in the trust into seller interest (the institution which originally issued the cards) and investor interest, although both parties have a claim on the income generated by the card receivables. Investors' interest can be protected against default by cardholders, through a form of credit enhancement. A simple example is a senior/subordinated structure, where there is a priority allocation of the cash flow: Class A (priority); Class B (subordinated, therefore has a lower credit rating than class A).
2. Servicing the bonds (the revolving period): income received from securitised credit card receivables is two-fold:

(a) Interest and fees from cardholders (trust yield): this is used to pay for the administration of card accounts, to cover any defaults on cards and to pay the investor and sellers' interest. Any residual income is the excess spread, which usually goes to the card issuer.

(b) Repayment of the principal by card holders: the revolving structure of credit card securitisation has been established to offset those card holders who pay off their principal early. Instead, repayments are reinvested in purchasing new assets, until they get towards the end of the bond's life and redemption occurs.

3. Redemption of the bonds: redemption typically occurs over a twelve month period, at the end of the revolving period. The cardholders' repayments are not reinvested, but are retained to pay the investors' principal. Redemption can either be through an accumulation method or through amortisation.

(a) Accumulation: an amount of the cardholders' repayments are placed in trust and accumulated until they are used to make a singe "bullet" payment of the investors' principal.

(b) Amortisation: a proportion of the cardholders' repayment is used to pay off the investors' principal over monthly payments.

reluctance on the part of purchasers of asset-backed securities (ABS) to take on high-risk assets.

The US securitisation market is more developed than the market in the UK. This partly reflects the fact that UK banks have historically been well capitalised and have had access to cheap funds, but also reflects regulatory restrictions in the UK. Policy on the securitisation of revolving credit was only introduced in the UK in 1992 (BSD/1992/3) and was updated in 1996 (S&S/1996/8).

Neither US nor UK regulators allow off balance sheet treatment if the investors in the bonds have any recourse to the card issuers[4]. US and UK regulators, however, have different views on the credit risk of a pool of securitised assets, both during the revolving period and during amortisation. This means they differ on what exactly constitutes "a recourse to the card issuer".

The Bank of England aims to ensure that the structure of a securitisation does not favour investors and that any interest (or losses) are appropriately placed with both the seller and the investor.

Before the 1996 update of securitisation policy, the Bank of England only allowed a disaggregated structure[5], which differs from the more common US approach, an aggregated structure. A concern that the Bank of England has with this approach is that, during amortisation, interest from assets that were securitised after the start of amortisation may be used to accelerate the payment of investor interest. This can be viewed as being at the expense of the seller, who may be left with the remaining, riskier, accounts that were acquired prior to amortisation.

In future there may be an increased appetite for UK credit card securitisations from those investors "searching for yield" and new products in which to invest. US card issuers have suggested that there has been increasing interest in securitised card receivables, from European investors, an interest which may accelerate after EMU. Furthermore, as competition in the credit card market increases, issuers may prefer not to tie up capital in assets with low returns. If assets are

As technology improves and more detailed databases of the UK population are developed, card issuers will be able to target different socio-economic groups more accurately and exploit new niches in the market

Chart 2 CREDIT CARD SPREAD AND NET INTEREST MARGIN 1978-96

moved off balance sheet, more capital is available to take on more remunerative assets — which could be an important factor in a market growing as fast as the credit card market. The level of securitisation in the UK will also be influenced by US entrants to the market which have more experience in moving credit card receivables off balance sheet and already take advantage of diversification of funding.

Bad debts

A key cost faced by credit card companies is bad debts, as non-performing loans have an impact on the net-interest margin — typically about a fifth (Chart 1). Although the level of bad debts will be influenced in part by the economic environment, the issuer's credit controls and debt-recovery systems play a vital role. As credit card debt is unsecured, companies need to consider the financial background and position of the borrower before agreeing to lend. Credit scoring is, therefore, becoming increasingly common in the UK. The benefits are simple — the more sophisticated the credit card company is with regard to its customer database, rejection rate and scientific bad-debt charge, the more likely it will offer adequate risk pricing.

As technology improves and more detailed databases of the UK population are developed, card issuers will be able to target different socio-economic groups more accurately and exploit new niches in the market. However, there is a danger that if card issuers

become too reliant on credit-scoring models, an element of discrimination could be introduced.

The level and trend of bad debts has become a more significant issue in light of the recent rise in bad debts and charge-offs experienced in the US. In the UK, bad debts are on average about 3 per cent in the credit card market, compared with the present level in the US of about 5 per cent. If the UK follows the US trend, credit standards may decline as competition increases.

Fees

Card issuers are also liable for a range of fees, including fees due to banks which provide cash to their card holders. Fees also have to be paid by those credit card issuers that are eligible and decide to join payments organisations such as VISA or MasterCard.

Customer incentive schemes

A number of issuers in the UK compete through measures other than price — non-price competition: although the level of APR charged may not be particularly low, additional benefits are offered to customers who have a card. Not all of these benefits will be fully exploited by customers but they do represent a cost to the card issuer — typically of between 3 per cent and 5 per cent of the overall spread.

Connected lender liability

An additional cost faced by credit card companies is the Section 75 claim — connected lender liability — which states that card issuers are liable in the case of customer dissatisfaction if goods are faulty. Although this clause was recently reviewed by the Department of Trade and Industry, no amendments were made to the regulation. Chart 1 shows how the costs outlined influence overall credit card profitability.

Net Interest Margin

A standard estimation of the net interest margin is a measure of interest income to average earning assets, but this does not include the cost of the interest-free period (which may be a significant element).

Chart 2 shows the credit card spread adjusted for the cost of the interest-free period. In addition to being affected by the proportion of customers taking extended credit, the adjusted spread is also influenced by interest-rate sensitivity, particularly as credit cards are assets with "sticky" rates, which are funded by floating rate liabilities.

Box 3 APR AND NET INTEREST MARGIN

The Consumer Credit (total charge for credit) Regulations 1980, outlined the method of calculating the rate of total charge for credit. The annual percentage rate of charge, APR, should in theory allow customers to make comparisons between the cost of credit from different providers, as calculations of the APR for credit cards should account for the interest rate and any other fees.

The main problem concerning the calculation of the APR for credit cards under these regulations is that the "interest-free" period is not taken into account. Therefore the "headline" APR assumes that interest is paid on balances immediately. Although some card issuers do not offer an interest-free period (and therefore this problem does not apply), the majority of card issuers do offer interest-free periods of up to 56 days. Because the cost of the interest-free period is not included in the calculation of the APR, the "headline" APR that is often quoted may underestimate the costs that card issuers face and it also means that a direct comparison of APR cannot accurately be made between a card that has an interest-free period and one that does not.

The calculation of the APR also involves an assumption that the card issuers make about the average amount they expect to be borrowed — particularly the relation between this amount and the annual fee. For example, an annual fee of £12 spread over an average amount of £1,000 will have less of an effect on the APR than if it were spread over an average outstanding balance of £250.

An additional problem that is faced in analysis of card rates is that few card issuers publish separate figures for interest received and interest paid on their credit card business. Therefore, interest elements must be calculated using published statistics on values of transactions and volumes of customers taking extended credit. Figures may overstate the use of cards as sources of credit for individual issuers because a significant proportion are full payers and don't use them for revolving credit.

Chart 3 CREDIT CARD AND NON-CREDIT CARD CONSUMER DEBT (UNSECURED AND SECURED); ANNUALISED QUARTERLY CHANGE 1988Q1-97Q1

The adjusted spread will reflect the interest rate mismatch and any hedge taken to reduce it.

As credit card rates tend to be less variable than other lending, card issuers generally perform better when interest rates are falling and the spread over the cost of funding widens. In addition, the opportunity cost of funding non-interest carrying balances also declines. Competitive pressure on credit card rates will influence the APRs charged (see Box 3) and therefore the net interest margin. Particularly if a card issuer introduces an introductory "teaser"[7] rate, this will place pressure on the net interest rate margin in the short term.

GROWTH IN THE UK

In 1990, total credit card debt outstanding was almost £9bn and by 1996 this had grown to about £16bn. In 1990 there were some 80 card issuers and by 1996, this had grown to more than 800, a ten-fold increase. This growth partly reflects the overall growth in consumer credit in recent years — in December 1992 annual growth of consumer credit was 1 per cent and by June 1997 was more than 18 per cent. However, Chart 3 shows that since 1990 the growth in credit cards has generally been faster than that of other forms of consumer credit. At present, credit cards account for about 21 per cent of net lending of consumer credit in the UK (up from 19 per cent in 1991).

The strong growth in the UK credit card market is all the more significant because a number of commentators had believed the market had reached maturity five or 10 years ago — this belief was influenced by the fact that the payment card market in the UK is one of the most developed in Europe. However, a comparison with the US credit card market shows that the UK has some way to go to reach the maturity of the US market. In 1994 there were twice as many cards per head in the US as in the UK and borrowing on credit cards accounts for a larger proportion of unsecured consumer borrowing in the US than in the UK

Table 2 NUMBER OF MASTERCARD AND VISA CREDIT CARDS IN ISSUE 1986-96 (UK)

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
MasterCard	9,846	11,370	11,454	12,128	12,294	11,554	11,169	10,351	10,944	11,702	12,930
VISA	12,121	13,106	14,318	16,485	17,552	15,257	15,307	15,119	14,807	16,225	20,064
Total	21,967	24,476	25,772	28,613	29,846	26,811	26,476	25,470	25,751	27,927	32,994

(about 40 per cent). Recent developments in the US market may indicate how the UK market will develop in the future.

Developments in the US market

Market saturation In recent years the UK has been a target market for US credit card companies. Their interest in the UK market may in part reflect the fact that the UK credit card market is highly concentrated; a relatively limited number of providers control a significant percentage of the market share. By contrast, there is far lower concentration in the US and the credit card market is approaching saturation.

Any recent growth in the US has been based on either winning-over customers or exploiting niche markets, which could include high-risk customers. Although "balance transfer" was the approach favoured by US card issuers in the US market, as competition has increased, it is no longer as popular. There are high acquisition costs in trying to "poach" customers from competitors as the issuer may have to pay a premium for each balance. The need to dangle additional "bait", possibly a low "teaser" rate, will have an impact on the net interest margin, albeit in the short term.

Targeting of "underdeveloped" credit consumers might involve reaching out to high-risk segments of the market in the quest for growth — those customers with a low income or high debt, the elderly, or those with a problem credit history.

Obviously, the increase in risk means that high quality risk-adjusted pricing is vital. Targeting high-risk customers is viable as long as adequate pricing is employed. However, in the US, there has been evidence that low-income consumers have been granted pre-approved credit lines. This undoubtedly leads to a decline in quality. A number of US entrants to the UK market have said that "balance transfer" is an appropriate method now, but as competition increases in the UK, "second generation" accounts, which involve new segments of the market, are going to develop.

> Strong growth in the UK credit card market is all the more significant because a number of commentators had believed the market had reached maturity five or 10 years ago

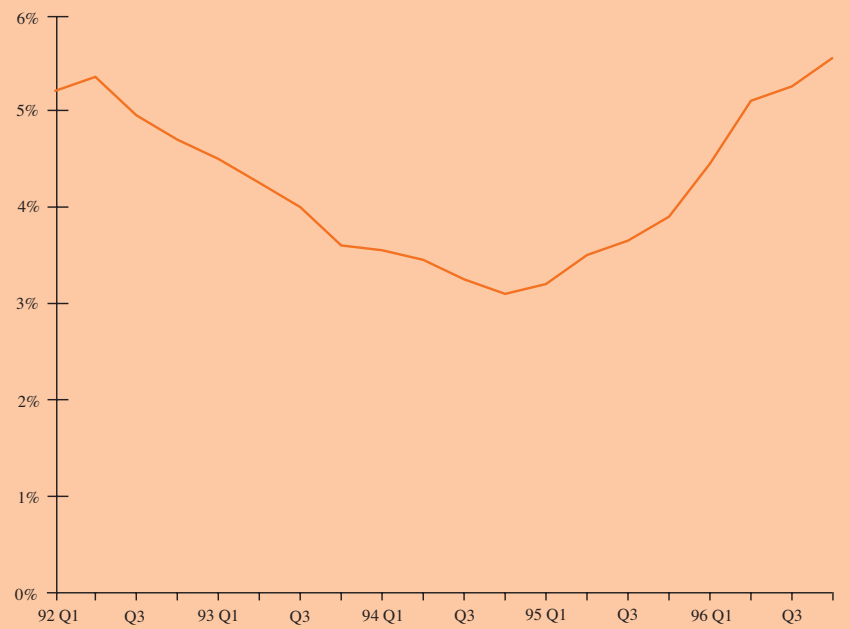
Bad debts In the past few years, the US has suffered from nation-wide increases in consumer credit delinquencies[8] and bankruptcies which have led to increases in credit card delinquencies and net charge-offs.

Since mid-1995, the rate of net charge-offs on US credit-card debt, for securitised and on balance sheet accounts, has been rising and net charge-offs as a percentage of loans are now comparable to 1992, when US unemployment was 7.5 per cent. It is now only 5 per cent. There have been nation-wide increases in consumer credit delinquencies, although delinquencies have not increased to 1992 levels.

The increase in bad debts in the US has raised a concern, particularly as it has come in a period of strong economic growth. A recent report by Salomon Brothers noted that the level of credit card debt being written off by some of the large banks in the US is higher than in the 1990-91 recession. The *Economist* (July 5-11 1997) reported that 53 per cent of bank loan losses are coming from 6 per cent of bank loans. The most recent figures for 1997 Q2, however, show a decline in delinquencies.

Some card issuers in the US are tentatively suggesting that they may have seen the worst and that consumer debt problems may start to fall in the coming quarters. However, the results from just one quarter make it too early to assume

Chart 4 LOAN LOSS COMPARISON IN THE US (VISA AVERAGE)



that the peak of bad debts has passed.

The influence of external economic conditions, both national and local, on delinquencies has meant that a number of US companies have diversified their portfolios nation-wide, since it is unlikely that all states are at the same point in the economic cycle. However, the recent increase in delinquencies may also be a consequence of an industry-generated phenomenon, brought on by companies over-reaching and targeting the higher risk categories without adequate risk-pricing.

Part of the increase in bad debts in the US has also been attributed to a rise in overall bankruptcy levels. According to Tom Layman, chief economist of VISA, about $30bn of debt was wiped out as a result of bankruptcy in 1996. This may partly reflect changing attitudes towards individuals declaring themselves bankrupt — bankruptcy appears to be more socially acceptable now than it was five years ago.

In addition to the attitudes towards bankruptcy, changes in US law have made it easier for individuals to declare themselves bankrupt. A survey carried out by VISA earlier this year found that over 65 per cent of people found the bankruptcy process easy and more than a quarter said that they would consider filing for bankruptcy again! More than 10 per cent of individuals surveyed had filed for bankruptcy at least once before.

Credit card companies in the US are now campaigning for changes to legislation. VISA and MasterCard are pressing for a move to a needs-based system, whereby those debtors receiving protection would still be required to continue repaying debts in proportion to their income.

THE US PATTERN

There are a number of similarities between the UK and the US credit card market, which could indicate that the UK is following a similar pattern to that of the US. However, this section also highlights some differences between the two markets, which may influence the future behaviour in the UK market.

Similarities

Increase in supply

Growth in the US credit card market was partly a supply-side phenomenon, as more lenders, attracted by the potential for profitable business, entered the market. In the UK, financial deregulation and the removal of credit controls in the 1980s reduced barriers to entry. More outlets accept credit cards — they can also be used to make purchases over the phone — and this has encouraged their use in a wider range of purchases.

Nevertheless the level of card penetration of the adult population is behind that in the US. In the UK, customers have an average of one or two cards, whereas in the US they have more. This may reflect the fact that the level of solicitations

through direct mailing in the UK is somewhat lower than in the US (where customers can receive a mailshot every week), although it is starting to grow rapidly.

Increase in demand

Recent research[9] suggests that in addition to growth in supply, influences on the demand-side have also made a substantial contribution to the growth in the credit card market in the US.

The demand for credit is determined by a number of factors, such as the level of wealth in an economy and the proportion of borrowers. Research has shown that before the 1980s these two factors moved in different directions, offsetting each other and having little overall impact on demand for credit. However, in the mid-1980s, both factors began to move in the same direction, the combination increasing the overall demand for consumer credit in the US.

Wealth levels have increased as earnings grew and unemployment fell, and the proportion of borrowing has continued to rise in response to a change in individuals' attitudes to debt as they are more willing to take on credit. Since these characteristics also apply to the UK market, it is likely that demand factors have influenced the growth in the credit card market.

Consumers in the UK may also be averse to taking on secured credit after the recession and negative-equity experience of the early 1990s and instead opt for the short-term flexibility offered by credit cards. More recent influences on credit card growth in the UK have included the substitution of unsecured lending for equity withdrawal and also consumers' consumption in anticipation of windfall gains from the demutualisation of a number of building societies.

Non-bank card issuers

An additional source of competition in the UK payment card market is from debit cards and other non-bank cards. Debit cards are not very popular in the US, but they have experienced strong growth in the UK. Competition from these sources may put further pressure on the credit standards of card issuers. However, debit cards do not offer any competition to credit cards as a source of credit or offer customer incentives, so their threat to credit cards may be limited. Supermarkets which are entering the financial market also pose an additional threat to the present market share of UK card issuers. Supermarkets will be keen to take advantage of the customer loyalty and their established brand names and extend this to their own credit cards. Supermarkets' strategy in offering highly competitive deposit rates may be an indication of the level of price competition they will undertake in the credit card market. Supermarket cards also pose a threat to debit cards as they are typically used for food shopping.

In the US, there is more competition from non-bank issuers such as monoline or stand-alone issuers, which specialise in credit cards. The

Consumers in the UK may be averse to taking on secured credit after the recession and negative-equity experience of the early 1990s and instead opt for the short-term flexibility offered by credit cards

market in co-branded and affinity cards is also far more developed in the US.

Differences

Price competition

US issuers tend to focus on price competition, whereas emphasis in the UK has been on non-price competition. A number of new US entrants have undercut prices of established UK issuers and the question arises as to how the market share of UK card issuers will alter as a result of this increasing competition. Although a number of issuers currently have brand loyalty in the UK, this may not continue as consumers become more aware of different credit card rates.

However, there may be some time-lag before consumers start to react to the lower APR rates on offer, as US research suggests that there are relatively high search and switch costs involved in moving to credit cards with lower APRs. This reflects the lack of information that consumers have about lower interest rates — particularly the cost of time and effort involved. Additionally, card holders that pay an annual fee and switch at the wrong time of the year, could lose money. Switching costs are also involved when transferring to a new card. Customers, may face higher costs because they could lose favourable credit limits when they switch to other cards.

When switching large balances, card issuers may not be able to differentiate between the borrower who intends to use the card to increase debt and the borrower who only wants to transfer a high balance. Issuers may be cautious and reject the applicant or not offer favourable terms. There is also an argument that price competition introduces an element of adverse selection. Profitable consumers for card companies are those who do not think they will use their card but end up using it anyway (but still pay their bills). As they did not expect to use the card they do not bother to shop around for lower rates. However, less credit-worthy customers, who know they will use the card and potentially default, are more likely to shop around for lower rates. Reducing card rates, runs the argument, means that adverse selection applies and the "wrong" type of customer is attracted.

> US issuers tend to focus on price competition, whereas emphasis in the UK has been more on non-price competition

If card issuers in the UK have to start competing on prices, APRs and continue with non-price competition, such as incentive schemes, it could prove very expensive.

Use of cards

Although there are a larger number of cards in the US than in the UK (both absolute number and per capita) they tend to be used less intensively. Furthermore, overall credit cards are used more as a source of credit in the US. The level of outstanding balances is typically higher than the industry average of 75 per cent in the UK (about 85 per cent in the US).

Securitisation

The securitisation market is far more developed in the US than in the UK.

THE UK MARKET'S FUTURE

It cannot be predicted whether the UK has learnt from the US credit experience, or if it will follow the trend to the same extent. However, competition in the UK is undoubtedly increasing and this may lead to some developments similar to those

in the US, such as market saturation and a rise in bad debts.

Market saturation

If competition in the UK intensifies there is a risk that entry requirements will be relaxed and card issuers will target those customers previously ignored. This could increase the potential for default.

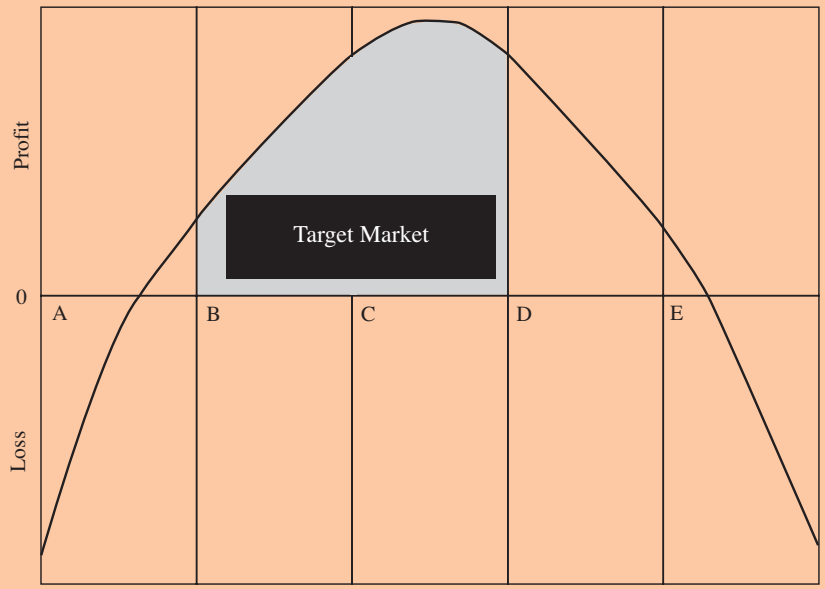
It is important for card issuers to be clear about which market they are targeting; one method is to differentiate the market according to socio-economic groups.

Socio-economic profiles Extended credit takers and full payers have a key influence on the income and costs for card issuers, so card issuers seek a trade-off between individuals who pay their balances each month and extended credit takers. Although the former are likely to be of minimal risk, they contribute no interest-income profit to credit card companies (indeed, as the income they contribute barely covers administration costs, they may be a cost to the credit card company). The latter contribute interest income for the companies, but at the same time the risk of default increases.

Chart 5 shows the socio-economic "risk profile" of different consumers[10] that a card issuer may target.

Segment A includes customers who, more often than not, pay off their credit card bills in full each month. This may result in losses for the card issuer, which is effectively having to fund interest free loans. Segments B and C are more attractive to card issuers: they are people that take extended credit, and therefore earn interest income. They do pay off their balances eventually.

Chart 5 RISK PROFILE FOR DIFFERENT SOCIO-ECONOMIC SEGMENTS



Segment D includes riskier customers who take extended credit but are much more likely to default. Segment E may also result in losses for card issuers: it includes high-risk customers who have the greatest marginal propensity to default on loans.

Competition for customers in segments B and C is increasing as new entrants enter the market and which may encourage more card issuers to target segments D and even E. Moving to these higher-risk areas, where the potential to default increases, requires more sophisticated credit-scoring models to enable adequate risk pricing.

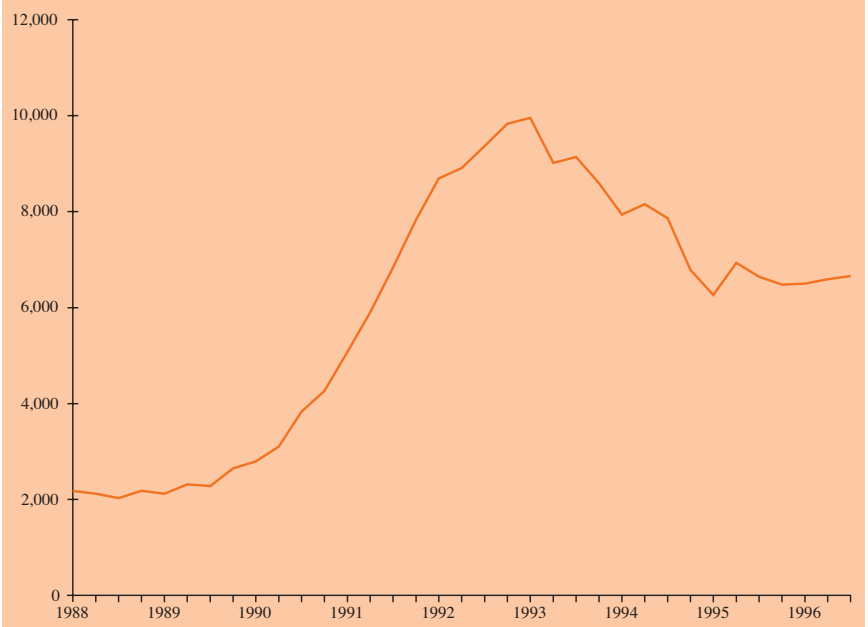
The category targeted by a card issuers depends on its strategy. Some issuers may target A, aiming to earn fee income or encourage extended credit-taking through very low APRs. Others may target D and E and charge high APRs in compensation for the additional risk. It is important that the card issuer is clear about which market it is attracting and can price accordingly.

Bad debts

Developments in the US become even more relevant to the UK when one considers that although personal bankruptcies have fallen in the UK, as shown in Chart 6 they have levelled out at a higher plane than in the 1980s.

The problem of increasing bad debts may be tackled by differentiating between different types of

Chart 6 PERSONAL SECTOR BANKRUPTCIES 1988–96



customers, and having multi-tiered interest rates based according to cardholders' creditworthiness.

Tiered interest rates are more common in the US than in the UK, and allow card issuers to price according to the risk in different segments of the population. This trend could develop in the UK — potentially to the ultimate of a price suitable for each individual ("a segment of one").

Some one-off factors that have resulted in rapid growth in the credit card market, and consumer credit more generally — such as the anticipation of windfall gains from demutualisation and substitution from secured to unsecured credit — are likely to be less frequent.

It is too early to say, however, whether any increase in bad debts, resulting from a rise in the number of marginal customers with credit cards, will reach the same level as the US. The key will be the response of lenders to conditions in the market that are less conducive to new entrants.

In a fast-growing market, businesses can expand their balance sheet without the need to acquire market share. Once growth slows, increasing market share is necessary to keep a company growing. In "winning" customers from other lenders, firms should make sure that, in developing attractive packages for customers, they do not lose sight of the need to ensure that they receive adequate reward for the risks they are running.■

NOTES

1 VISA and MasterCard are international payments organisations; they do not issue credit cards directly, but are involved in authorising, transmitting and settling financial transactions. To become a member of VISA or MasterCard, an organisation must be authorised to accept demand deposits and be governed by a country's commercial banking laws (therefore members are usually banks or building societies). As non-banks are not eligible to join either of these payments organisations it may explain the development of co-branded and affinity cards where non-bank organisations join up with banks to promote a card (and therefore get the benefits of VISA or MasterCard membership). A co-branded card is a card issued by a bank in conjunction with a non-financial institution. "Points" are earned every time the card is used and these accumulate towards a "reward". The reward is usually related to the type of non-financial institution involved. Affinity cards are issued by banks in conjunction with a non-financial institution and are aimed at groups of people "linked" by that organisation and who might wish to support it eg a university or charity. Every time the card is used, the organisation receives some income — on average 0.25 per cent of the value of the purchase.
2 The credit card "headline" spread is the difference between the "headline" annual percentage rate of charge (APR) and the cost of funding.
3 BBA statistics.
4 If the pool of receivables does not deliver the rate of return that is expected, the bond holders cannot hold the card issuers to account.
5 This involves securitised assets being allocated to the investor and to the seller, with any interest (or losses) attributed to those receivables, being allocated to the particular owner. Such a structure ensures that there is no recourse to the card issuer and this transfer of credit risk allows the securitisation to be treated off-balance sheet.
6 Where interest is divided between the investor and the seller, according to their interest in the portfolio of receivables.
7 Some card issuers charge significantly lower APRs for a limited period (eg six months) in an attempt to attract customers. However, after an introductory period, these "teaser" rates are usually replaced by higher APRs.
8 An account becomes delinquent when the customer fails to repay the minimum required amount on time.
9 *Current Issues in Economics and Finance* (1997) Volume 3, No. 4, Federal Reserve Bank of New York, Morgan, D and I Toll.
10 Each category broadly reflects the standard socio-economic categories.

MUTUALITY AT THE CROSS-ROADS

By Adam Boxall and Niall Gallagher, the Bank of England[1]

Several of the United Kingdom's largest building societies and mutual life assurance companies have given up their mutual status in recent years or are about to do so. This is an important aspect of the structural change which has taken place in the provision of financial services in this country. The alteration in corporate form raises several questions which are relevant to the Bank because of the potential effects on the behaviour of the financial sector. Several key questions follow. Have mutuals and public limited companies in the same industry sought different objectives — related to their different corporate forms — in the past? If so, will ex-mutuals behave differently? What are the prospects for the remaining mutuals? This article explores these issues, using evidence primarily from the mortgage market and occasionally from life assurance. It does not seek to provide a value judgement about mutuality or promote one corporate form over another. Instead, it suggests how different hypotheses about the motives of mutuals might be tested and draws out some implications for those that wish to maintain their mutual status.

Origins and market share

Building societies

Building societies were established towards the end of the 18th century as small local organisations whose members pooled funds to allow them to purchase land and build houses. Membership was originally restricted, with similar contributions from each member, and societies were wound up after all of the members had been housed; hence they were known as terminating societies. As societies developed, they accepted deposits from individuals who had no desire to borrow to buy a home, but simply wished to invest their money. In time such societies became permanent, developing into the building societies that we know today.

Building societies still have a major share of the UK mortgage and liquid retail savings markets. At the end of 1996, they accounted for over 55 per cent of the UK mortgage loan stock and 30 per cent of sterling bank and building society deposits (M4). These shares fell substantially after the recent wave of demutualisations, but remaining societies still account for almost 25 per cent of the mortgage market and 12 per cent of M4.

Life assurance companies

Mutual life societies were first established during the first half of the 18th century to provide benefits for widows and other survivors of members. Initially membership was limited both in number and to certain professions and groups. Benefits were originally paid out of annual subscriptions, but, as life companies developed, they calculated premiums on the basis of ever more sophisticated estimates of each member's life expectancy, allowing them to offer the types of policies we observe today.

Mutual life companies also still undertake a major share of UK life business. Unconsolidated figures show that, at the end of 1995, mutuals accounted for over 50 per cent of both the total premiums (£26bn) and the total assets (£320bn) of the largest 20 life companies. Although these figures do include Clerical Medical, Norwich Union and Scottish Amicable, which have now all converted, the remaining mutuals still account for around a quarter of both the

premiums and assets of the UK life sector as a whole.

Structure

The corporate form of mutual financial firms reflects their origins, when membership was obtained through acquiring a core financial product, such as a long-term savings product, a mortgage or a deposit account, and members were on much the same footing as each other.

Voting rights are not proportional to the size of a member's financial commitment, as members typically only get one vote each, reflecting the character of the original terminating societies — this means that the rights to control management are widely dispersed. Members cannot sell or trade their membership rights, so their financial value is difficult to determine, and the closing of an account, repayment of a mortgage or expiry of a policy leads to the loss of such rights without compensation.

The capital base of financial mutuals is composed largely of the reserves, built up from retained surpluses. Until 1988, building societies were unable to raise external capital. A building society which intended to expand had to rely on making a surplus on its activities, with the size of the required surplus being higher the more rapid the planned growth in assets. Income had to be sufficiently large to cover costs and provisions and augment reserves in line with asset growth. Regulatory constraints were relaxed — in 1988 and 1991 — but societies continued to rely primarily on retained surpluses. Although joint stock financial institutions also use retained earnings to fund growth, the link between growth and surpluses remains more important for building societies due to their inability to issue equity.

Although joint stock financial institutions use retained earnings to fund growth, the link between growth and surpluses remains more important for building societies because of their inability to issue equity

Mutual society objectives

Mutual societies started as self-help societies designed to achieve certain specific objectives for their members such as the purchase of a house. Sometimes those objectives extended beyond the narrow economic interest of members; for example, building societies have been seen as a means of promoting home ownership as a social objective. Now they compete with public limited companies to provide financial services. Do they still have objectives distinct from those of the plcs? The crucial test is not what their managers have said but what the mutuals have actually done. Can they be distinguished by their behaviour?

The obvious standard of comparison for an economist is the behaviour of a profit-maximising company. If the number of people wanting to make interest-earning deposits is increasing over time, the profit-maximising bank in the mortgage market will want to put aside some of the profits it earns each period to allow it to augment its reserves and expand, earning more profits in the next period to divide up amongst its shareholders.

However, a mutual which is only concerned about its current members will be less keen to expand, because

any future benefits would have to be divided up among a larger number of members; the new members would get a share of the pre-expansion surplus. Established members would prefer lower interest rate spreads to higher reserves. If mutuals are solely interested in the financial interests of their current members, they are likely to grow more slowly than the equivalent plc. If the surpluses they could earn are instead distributed according to the financial commitment of members, then one would expect to see both lower mortgage interest rates and higher deposit rates amongst mutuals, and restrictions on new membership (including credit-rationing on the mortgage side).

Mutual societies may also have social objectives. If a building society wishes to promote home ownership as an end in itself, it will want to offer lower mortgage rates than the bank does. Also, in periods when the bank pays out a share dividend, the building society would use the funds available to reduce mortgage interest rates and add to reserves so that it could issue more mortgages in the future. The obvious tests of whether this is an acceptable simplification of the objectives of building societies are:

- whether building society mortgage lending has been at lower rates than that of banks, and
- whether it has increased more rapidly.

Such tests are not conclusive, because lots of other factors are important in the real world, such as access to new technology, choice of production technique, economies of scope and differing regulatory constraints. But they can help to establish a presumption about what the principal objective of building societies has been in practice.

Principal-agent theory recognises that managers may not pursue the owners' objectives when owners do not exert full control over managers' behaviour and incentives facing owners and managers differ

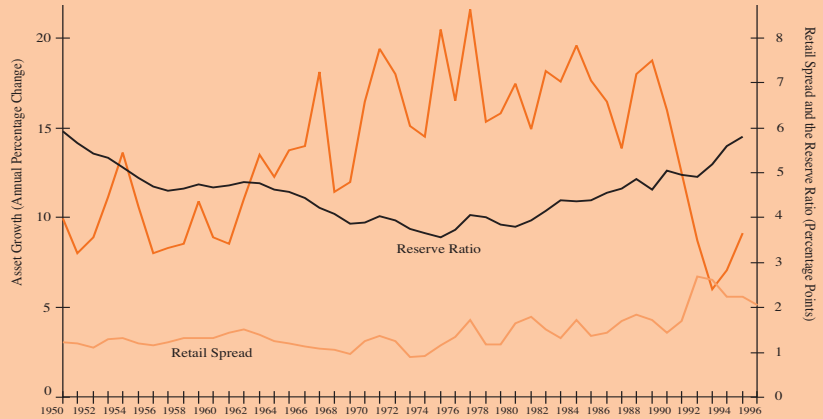
In trying to identify the motives of any firm, it is important to distinguish between the interests of owners and the incentives faced by management. In studies of firms' behaviour, the interaction between the owners and management is the subject of principal-agent theory.

Principal-agent theory recognises that managers of firms may not pursue the owners' objectives when owners do not exert full control over managers' behaviour and the incentives facing owners and managers differ. Some have argued that the normal provision for "one person, one vote" in mutuals necessarily means that ownership is more dispersed than a plc. On the other hand, when ownership derives from use of a firm's products, members may want to have more involvement than ordinary shareholders would, particularly if they share any social objectives of the mutual.

How is one to tell if mutuals have fallen prey to the principal-agent problem to a greater extent than plcs? Again it is useful to investigate what different assumptions about the objectives pursued imply for behaviour. We concentrate on two particular commonly suggested managerial objectives: growth maximisation and expense preference. They have both received particular attention in studies of

When building societies face binding capital constraints, growth maximisation is likely to lead to the maximisation of surpluses — analogous to the profits received by plcs

Chart 1 ASSET GROWTH, RETAIL SPREAD AND THE RESERVE RATIO (PER CENT)



Source: Council of Mortgage Lenders

financial mutual behaviour in the UK and the USA.

If the management of a firm sought to inflate expenditure on staff, buildings and equipment, that would demonstrate expense preference. If that were a problem for mutuals, we should observe building societies and mutual life assurance companies running higher costs than do joint stock companies with a similar range of business activities.

Growth maximisation would occur if management sought to maximise a firm's size. Such behaviour could lead to a shareholder owned firm expanding beyond the point where marginal costs equal marginal revenue, reducing the net present value of the firm.

In the case of building societies, growth maximisation can have a different effect. When building societies face binding capital constraints, growth maximisation is likely to lead to the maximisation of surpluses — analogous to the profits received by plcs — period by period (but not in a net present value sense). This is because, when a reserve requirement or other capital constraint bites, assets can only grow in line with reserves.

A building society which did not face binding capital constraints could expand by attracting deposits and issuing mortgages beyond the point where marginal cost equals marginal revenue, at the same time running down its reserve ratio. However, such behaviour would ultimately lead to the mutual being capital-constrained and having to maximise surpluses so that it could maximise growth.

Behaviour of mutuals

We now consider some empirical evidence to see what light can be shed on the actual behaviour of mutuals and hence on their objectives. This section is not intended as a comprehensive comparison of mutuals with competing shareholder owned firms. But it does establish some "stylised facts" which may

help to focus debate about the special nature of mutuals.

Growth and spreads — Building societies

Building society assets have grown rapidly for most of the post-war period, requiring significant and continuing surpluses in order to maintain prudential capital requirements. Chart 1 shows growth in assets, the reserve ratio (reserves as a percentage of total assets) and the retail spread (the difference between the average mortgage rate and the gross share rate) for the building society sector as a whole from 1950 to 1996.

From 1950 to the late 1970s, rapid growth in assets coincided with a run-down of the reserve ratio and intermittent credit rationing. The decline in the reserve ratio may have reflected the gradual easing of capital requirements during the 1960s. Building societies also faced little competition in their core markets of mortgage finance and retail deposits during this period. The fact that societies sometimes rationed credit suggests that they were not attempting to maximise growth. If they had been, they would have charged more and used the receipts to build up reserves faster, thus allowing more lending in the future. Instead they may have sought to balance the objective of promoting home ownership with that of holding down mortgage interest rates for existing members.

Between the 1970s and the late 1980s, retail spreads rose considerably. This widening of spreads, and the associated rise in surpluses, coincided with a period of financial liberalisation, during which banks entered the housing market, mortgage rationing ended and the building societies' cartel was abandoned. Operating income was in excess of that required to fund asset growth and cover provisions, suggesting that societies were seeking to rebuild reserve ratios after two decades of decline. That may have been partly because of regulatory action requiring societies to increase their capital requirements.

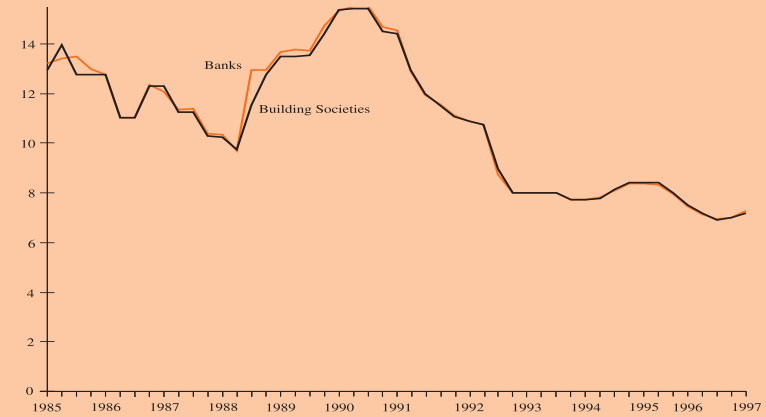
From the early 1990s, growth in mortgage assets slowed considerably because of the housing recession. Despite this, building society spreads widened significantly, leading to significant income growth and the continued build-up of reserves. Part of the widening in spreads may have been in reaction to the severe housing market recession, record levels of provisions and uncertainty over future credit losses at the time.

However, the fact that operating income was always well in excess of provisions suggests that this is not a sufficient explanation on its own. Also, the ratio of capital to risk-weighted assets was far in excess of the regulatory minimum. The high surpluses throughout the 1980s, and the fact that surpluses in the early 1990s did not fall despite lower nominal credit growth, suggest that building societies' spreads were wider than those required to support societies' growth and provide for credit losses.

In the early 1990s building societies' spreads were wider than those required to support societies' growth and provide for credit losses

Building societies have earned a return on assets at least as high as the banks, despite the lower risk of building society assets

Chart 2 BANK AND BUILDING SOCIETY MORTGAGE INTEREST RATES (PER CENT)



Source: Bank of England and Building Societies Commission

Chart 3 BANK AND BUILDING SOCIETY DEPOSIT RATES (PER CENT)

Source: Bank of England (internal estimates compiled from *Moneyfacts* to distinguish between committed and converting building societies)

Chart 4 RETURN ON ASSETS (PER CENT)

Source: CML and BBA

Comparative spreads and profitability

Based on headline rates, the evidence about mortgage interest rates suggests that there was virtually no difference between those offered by banks and large building societies between 1984 and 1997 (Chart 2).

From 1989 until 1995, the larger building societies appear to have offered slightly higher deposit rates than did the banks . However, as shown in Chart 3, from 1995, the deposit rates of converting societies converged on those of the banks while a number of the committed building societies continued to offer slightly higher rates, at least until this summer.

Building societies have earned a return on assets at least as high as the banks, despite the lower risk of building society assets. Whilst some banks have enjoyed much higher returns on assets in recent years, this has not been universal, and building societies have tended to exhibit much greater stability in rates of return over time (see Chart 4).

Expense preference behaviour

Banks in the UK tend to have considerably higher "expense ratios" than building societies, as shown in Chart 5, although there has been some convergence over time. Chart 6 shows that the typical building society branch deals with more accounts than the average bank branch.

However, these data do not show unambiguously that building societies operate more efficiently than banks. Variations in expense ratios between banks and building societies reflect differences in business mix and diversity of operations as well as differences in cost efficiency. For example, the Abbey National, which became a bank in 1989, has an expense ratio lower than many building societies, perhaps reflecting its continued heavy concentration on mortgage lending and the addition of a low-cost treasury operation. Alliance & Leicester, on the other hand, has an expense ratio similar to that of the main banks, probably reflecting its ownership of Girobank, a bulk money transmission business (see Table 1).

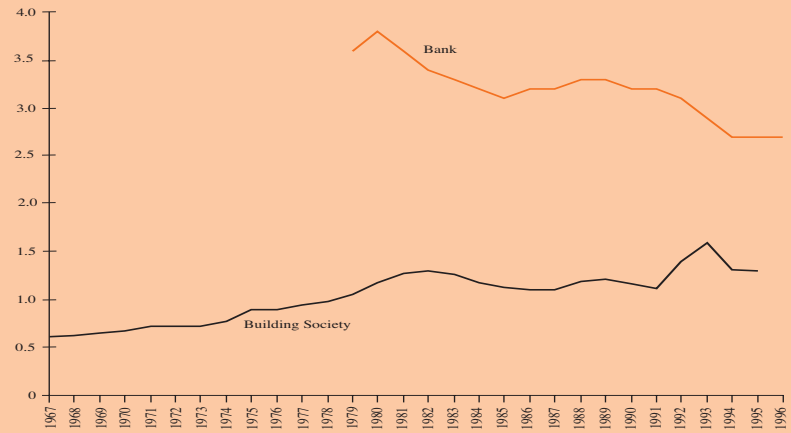
Building society objectives

It is difficult to conclude that building societies as a whole have consistently followed any one motive to the exclusion of others. Nevertheless, the above has established some stylised facts:

- Building society asset growth was rapid for much of the post-war period. This suggests that building societies were not seeking to maximise the financial interests of current members.
- The ratio of costs to assets for building societies was lower than for banks, but these ratios are not readily comparable due to the different business mixes.
- Building societies tended to operate narrower retail spreads than banks between 1989-97, the period for which data are available, by offering slightly higher deposit rates.

Banks in the UK tend to have considerably higher 'expense ratios' than building societies

Chart 5 BANK AND BUILDING SOCIETY EXPENSE RATIOS



Source: Council of Mortgage Lenders and British Bankers Association

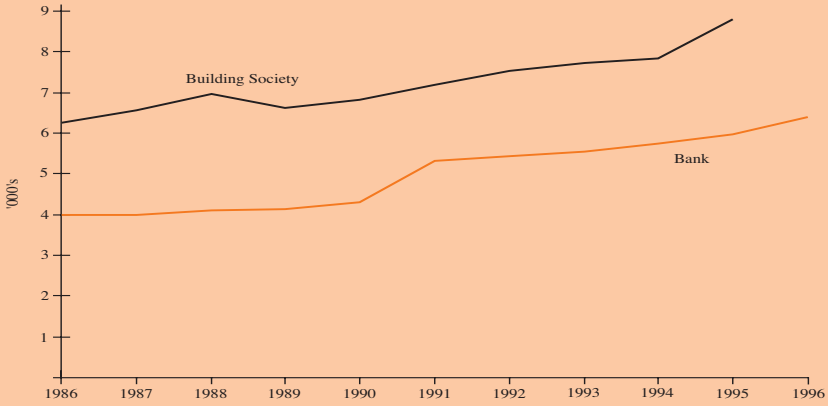
In the cartel era, it looks as if building societies were attempting to reduce mortgage costs for both current and future members

- Financial accounts data from 1979-95 suggest building societies generated at least as high a return on assets as did banks.

In the cartel era, it looks as if building societies were attempting to reduce mortgage costs for both current and future members. But the impact of competition on pricing, costs and product diversity was largely absent. Behaviour appears to have changed gradually from the time banks began to enter the mortgage market. In particular, rationing was ended, the cartel abolished and spreads and surpluses increased.

The evidence is far from conclusive, but it looks as if, from the early 1980s, building societies increasingly behaved like profit-maximising banks, setting mortgage rates at market-clearing levels. However, the build-up of reserves in the early 1990s is difficult to reconcile with

Chart 6 BANK AND BUILDING SOCIETY ACCOUNTS PER BRANCH



Source: BBA Annual Abstract of Statistics

the theories put forward above. Two possible explanations are: greater risk-aversion by management or, simple inertia.

Life assurance companies

Recent evidence on life assurance companies indicates that there has been little difference in growth, when measured by net premium income, between mutual and proprietary firms.

The slightly lower growth in net premium income of mutuals between 1988-95 is likely to have been a result of the demutualisation of firms such as Scottish Equitable and Scottish Mutual (see Table 2).

Comparative measures of benefits to policyholders are not so straightforward, but one measure which is often used is the level of bonuses paid on with-profits endowment policies and pensions.

Survey evidence, such as that produced by "Money Management", has been used to argue that mutuals provide better benefits to policyholders (see Chart 7). However, performance varies widely across both mutual and proprietary insurers. The data also suggests that the difference in performance may have narrowed in recent years.

TABLE 1 COSTS AS A PERCENTAGE OF 1996 MEAN ASSETS

Institution	1996
Abbey National	0.9
Barclays	3.0
Lloyds TSB	2.9
Midland	2.5
NatWest	2.7
Alliance & Leicester	3.0
Birmingham Midshires	1.3
Bradford & Bingley	1.2
Britannia	1.0
Halifax	1.2
Nationwide	1.3
Woolwich	1.3

Source: IBCA

The figures on costs for UK mutual life companies do not support the hypothesis that they are less cost efficient than plcs. Chart 8 shows that two often-cited cost ratios have been lower for mutuals than for proprietary assurance companies. However, as with proprietary companies, cost ratios vary significantly amongst mutual insurers, and it is clear that mutuality does not guarantee greater cost efficiency in all cases.

Why demutualise?

Why have some mutuals converted to "plc" status in recent years? How might committed mutuals react to retain their mutual status? In most of the cases of demutualisation the initiative to convert has been taken by management not members. The managers of converting mutuals have put forward a number of reasons for their decision:

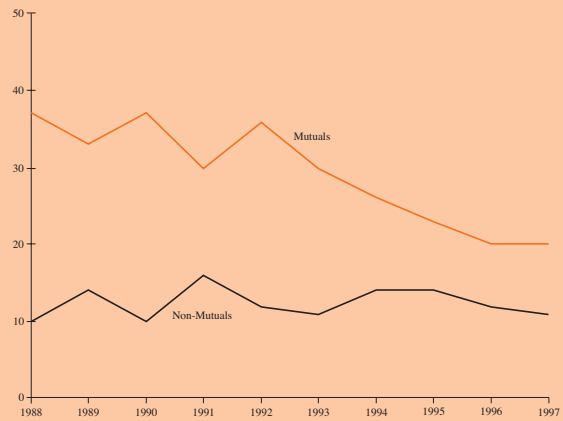
- Access to capital markets will allow converting companies to pursue plans for expansion and diversification more easily. This argument has primarily been put by larger societies, who see their core market as mature with only modest growth prospects. Mutual life companies appear to have been less eager to demutualise to expand their operations.
- Mutuality is increasingly inappropriate as a corporate form because the proportion of non-member customers increases.

Table 2 ANNUAL GROWTH RATE FOR NET PREMIUM INCOME (PER CENT)

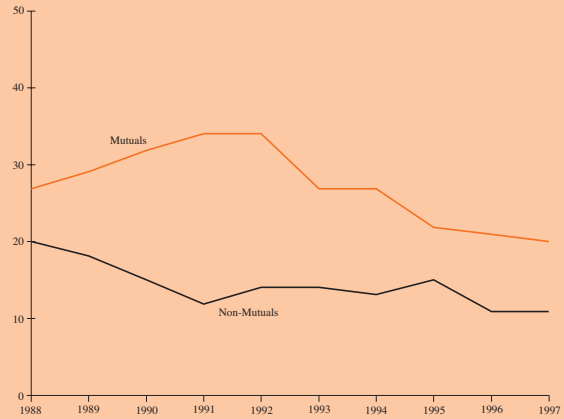
	1988/89	1989/90	1990/91	1991/92	1992/93	1993/4	1994/5	Compound annual growth rates 1988-95
Proprietary	27.8	8.2	19.0	9.9	8.5	-3.2	-3.4	10.7
Mutual	38.7	10.2	19.1	5.3	4.6	-10.7	0.9	10.2
Bank-owned	42.0	27.4	29.1	29.6	35.6	-6.2	26.2	28.2
Total	**33.2**	**9.8**	**19.5**	**8.7**	**8.3**	**-6.6**	**0.4**	**11.5**

Source: DTI

Chart 7 PAYOUTS ON ENDOWMENT POLICIES: MUTUALS VS NON-MUTUALS



WITH-PROFITS ENDOWMENT POLICIES – NUMBER OF BOTTOM QUARTILE RANKINGS BASED ON ACTUAL PAYOUTS



WITH-PROFITS ENDOWMENT POLICIES – NUMBER OF TOP QUARTILE RANKINGS BASED ON ACTUAL PAYOUTS

Source: Money Management

As mutuals diversify away from lower-risk businesses, towards newer and potentially more risky business areas, it may be more appropriate for risk capital to be provided by specialist providers.

- Demutualisation is a necessary step in the process of merging with a stronger partner in the face of increasing competition in mutuals' traditional markets. This argument is most often put forward by small and medium-sized mutual life companies.

Others have drawn attention to the financial incentives available to managers of converting societies. The members have been won over in nearly all cases because a majority of them stood to benefit financially from conversion.

If the firm's objective changes to profit maximisation from something else, the net present value of the firm goes up. The "something else" might have been the extension of home-ownership, for example, so that current members benefit at the expense of future home-owners. Or it could have been the provision of savings facilities to those on low incomes, so that current members benefit at the expense of future small-scale savers.

There is an incentive for existing members to realise the net present value of a society's activities so that they do not have to share it with future new members (who do not have to pay an entry fee). That way they do not need to lose all claim on any future benefits when they cease to be depositors or borrowers. For precisely this reason, there is an incentive for new members to join a society and then vote for demutualisation.

Also, to the extent that the benefits to current members have accrued in the form of reduced interest-rate spreads, and hence have been skewed towards a relatively few large-scale depositors and borrowers, the more egalitarian distributional principle used to allocate the reserves on conversion would benefit the majority of members.

Moreover, the conversion of a mutual society makes a member's notional ownership of a share of the reserves a tradable asset, allowing him or her to adjust the proportions of different assets that make up his or her wealth.

If members of the continuing mutuals are only interested in their financial returns, then those four factors will continue to put mutuals under pressure to convert or sell out to a plc. What factors could weigh on the other side?

Mutuals could seek to promote their social objectives to their members. They need to demonstrate that they behave differently from otherwise similar plcs,and in a manner consistent with their stated objectives; that has not always been clear in the past.

They could also try to show that they are better at aligning the inter-

ests of managers with owners; the opposite argument has often been advanced, but a brief look at costs does not sustain it.

Another way in which a mutual firm could benefit existing members and yet still expand would be to hypothecate surpluses as they accumulated to members in proportion to their financial commitment to the society.

When members joined a mutual society, they would have no claim on existing reserves; instead they would build up a claim on surpluses retained during membership, in proportion to their financial commitment. Ownership rights could even be passed down from generation to generation.

But, as the reserves of a mutual are its risk capital, and prudential standards require certain minimum levels of permanent capital, it is difficult to envisage circumstances where members of a continuing mutual could realise the full financial value of their reserves without changing the mutual status. Instead, any practical form of pay-out would only be able to draw on accumulated surpluses over and above minimum reserve requirements. Such payouts would resemble a policy or member bonus, paid out of the surpluses of the mutual firm at the end of every financial year.

Finally, mutuals could attempt to distribute benefits more in proportion to members' voting rights.

Building societies have taken steps recently to adjust the balance in favour of the financial interests of existing members. Such steps have included highly publicised reductions in lending rates and loyalty bonus packages which operate in a similar manner to a dividend. As a result, net interest margins were cut significantly in 1996, and reserve ratios have not risen for the first time in several years (Table 3).

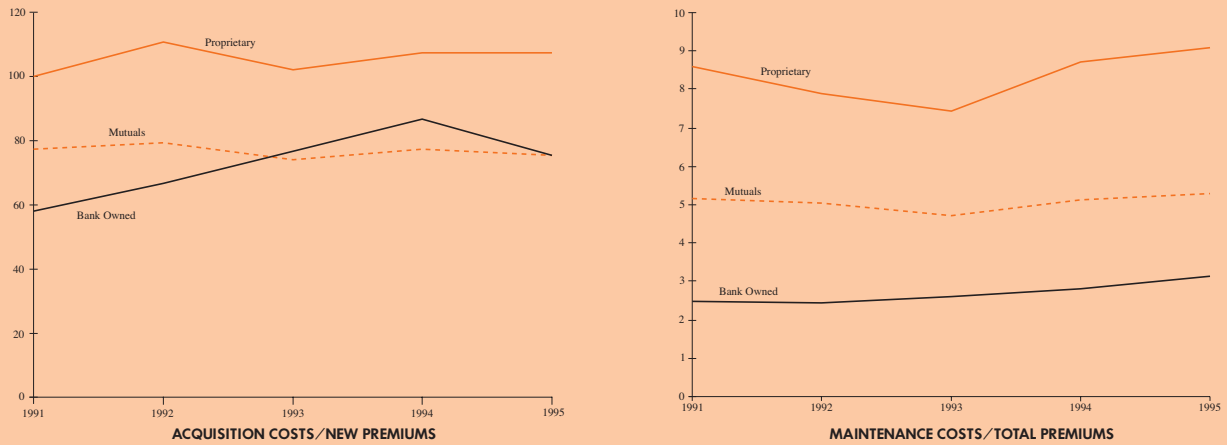
However, it is important to note that asset growth at several of the committed mutuals was also strong (Table 4).

There are several reasons why the managers of life assurance firms committed to mutuality might face less pressure from members for demutualisation than their counterparts in building societies:

- Survey evidence suggests that mutual life companies have tended to provide better benefits (in terms of higher returns on with-profits policies) than non-mutuals.

  This is important as the average size of the financial commitment made by members is larger in the case of life companies. For example, if a policyholder has a with-profits pension which is intended to produce £200,000 on maturity, and a mutual life company is able to produce a return which is 2 per cent better than a non-mutual, the potential net gains from demutualisation may not be significant.

Chart 8 **LIFE ASSURANCE COSTS**



Source: DTI

Table 3 NET INTEREST MARGINS (NET INCOME AS A PERCENTAGE OF MEAN ASSETS)

Society	1989	1990	1991	1992	1993	1994	1995	1996
Bradford & Bingley	2.0	2.0	2.0	1.9	2.0	2.0	2.0	1.4
Britannia	2.0	1.9	1.9	1.9	1.8	1.9	1.9	1.4
Nationwide	2.5	2.4	2.3	2.5	2.5	2.5	2.5	1.8

Source: IBCA

This contrasts with building societies, where for example, an extra 1 per cent on a £100 deposit is relatively insignificant. Therefore, there is less incentive for new members to join a life company simply to vote for demutualisation, since it is new members who stand to gain most from any benefits of mutual status.

- The costs of acquiring membership of mutual life companies are higher. Generally, those policies which provide membership rights require a more significant and longer-term commitment than opening a share account with a building society.
  Whilst policies can be terminated early, this often results in a loss to the policy-holder, since the premiums paid in the initial stages of the policy would be consumed by costs. Again the effect of this is to deter the taking-out of policies to engineer demutualisation.
- Most life products are more complicated than the deposit and mortgage business of building societies, so that it is more difficult to determine precisely the financial benefits of mutuality compared to the benefits of a windfall gain. Members may be more reluctant to support demutualisation without being certain of the costs and benefits.

Survey evidence suggests that mutual life companies have, in the past, tended to provide better benefits than non-mutuals

However, pressure for consolidation within the industry has been cited as a reason why mutual life companies may be under pressure to demutualise. Although, theoretically, a mutual life company could merge, having publicly announced its intention to find a partner, it would in all likelihood become the subject of takeover offers from plcs. In this situation members may be tempted by the prospect of "windfall" gains.

In the longer term, committed mutual life companies will need to demonstrate that they have the capacity to outperform proprietary companies on member returns and quality of service. Otherwise, members may seek to realise the financial value of their ownership rights, and there are shareholder-owned companies which are happy to assist.

Conclusions

Building society assets and membership have grown rapidly in the post-war period. This suggests that management decisions were not motivated solely by the pecuniary

Table 4

BUILDING SOCIETIES GROWTH IN TOTAL ASSETS

Society	1990	1991	1992	1993	1994	1995	1996
Bradford & Bingley	26.4	31.6	9.6	6.3	5.0	7.5	8.8
Britannia	17.9	14.8	6.9	8.4	4.4	5.9	8.0
Nationwide	14.4	8.8	2.5	1.2	0.9	4.9	7.5

Source: IBCA

interests of existing members. The advocates of mutuality would argue that this is appropriate, as mutuals also have social objectives. But the accumulation of reserves in the early 1990s, beyond regulatory and future growth requirements, is difficult to reconcile with conventional theories of mutual behaviour.

There are powerful financial incentives encouraging members of the remaining building societies to support conversion, reinforced by the structure of voting rights. These incentives became more apparent following the recent management-led conversions.

In particular, existing members can capture the net present value of future expected profits growth which they would otherwise have to share with future new members (to whom any bonus or reduction in interest rates spread would also accrue), whilst allowing them to diversify their financial wealth.

However, it is less obvious that the incentives which are facing members of life companies are as strong those for building societies.

Several mutuals are constructing defences against conversion, but if they are to be successful they will have to clearly demonstrate the advantages that mutuality has over plc form.

They may be able to define altruistic objectives which win the support of their members; in that case, their behaviour would have to differ from that of competing plcs, for example, by setting lower interest rate spreads.■

Several mutuals are constructing defences against conversion, but if they are to be successful they will have to demonstrate the advantages that mutuality has over plc form

NOTES

1 The authors would like to acknowledge the helpful comments from Alex Bowen, Glenn Hoggarth, Professor David Miles, Alistair Milne, George Speight and Professor Geoffrey Wood

REGULATORY DEVELOPMENTS

Compiled by the Bank of England and the Securities and Investments Board

UK SUPERVISORY DEVELOPMENTS

New Regulatory Body

On 20 May it was announced that a single regulatory body would be created in the UK. This will span banks, investment firms, building societies, friendly societies and insurance companies. The details of the proposal are set out in this issue.

Banking Supervision

The RATE and SCALE consultative documents

Following the Bank's Review of Supervision, two consultative documents have been issued on the introduction of risk-based frameworks for the supervision of UK incorporated banks (the RATE approach) and UK branches of non-EEA banks (the SCALE approach). The papers set out how the Bank proposes to revise its current supervisory approach to provide for more consistent and better identification of risks in banks and their wider groups.

Both frameworks use nine evaluation factors to assess risk (six quantitative — Capital, Assets, Market Risk, Earnings, Liabilities, Business: and three qualitative — Controls, Organisation and Management) and seek to ensure that supervisory action is focused on the main risks, using the most appropriate "tools" of supervision. One of the main features of the new approaches is to provide more feedback to banks on the proposed intensity of supervision, through the provision of a supervisory programme. Details of this programme will be sent to them after a formal risk assessment has been completed. Although a more systematic assessment of risk will be undertaken, the frameworks have been designed to allow the application of judgement by individual supervisors.

The RATE and SCALE frameworks are being tested on 22 banks during the remainder of this year. Lessons from this exercise and comments on the consultation papers will be assessed. From next year the new frameworks will be introduced to all banks.

Building Societies Act

The Building Societies Bill received Royal Assent before the UK general election. It increases the range of activities building societies may undertake and the financial products they may offer. Their freedom of action is still somewhat constrained.

The Act restricts them to undertake only those activities spelt out in their Memorandums: loans for residential property must make up at least three quarters of groups' total assets (with certain caveats).

The Act does give building societies more scope for self-determination on the funding side: they may increase their use of the wholesale markets. The greater freedom

the Act allows building societies means that prudentially less reliance will be placed on statutory restrictions and more on supervision by the Building Societies Commission.

Securities and Investment Regulation

International commodity futures markets

Work has continued during this year to follow-up the November 1996 meeting in London of international commodity futures markets regulators. It has focused on surveying the way in which commodity futures contracts are designed and reviewed around the world and examined prevalent techniques of market surveillance and information sharing. Papers have been prepared on best practice for the design and review of commodity futures contracts, and on techniques of market surveillance and information sharing in relation to commodity markets. These papers were considered at the Burgenstock meeting of Regulators in Switzerland on 5 September and are currently being looked at by the relevant IOSCO Committee. The aim is to complete this work at a meeting in Tokyo on 30 and 31 October 1997.

Review of pensions mis-selling

In November 1996, the SIB issued new guidance aimed at speeding up the provision of redress to people wrongly sold personal pensions. The SIB indicated that, once firms had had time to assimilate the guidance, front-line regulators would determine realistic new target dates with firms.

In May this year, the PIA announced a new timetable for the review. Firms are now required to complete 90 per cent of their most urgent cases by the end of 1997 and the rest by the end of 1998. In addition, the 24 firms with the greatest number of cases to review were set, and agreed to meet, demanding individual targets. Targets for a further 17 firms were published in September. Failure to meet targets could provide grounds for disciplinary action by the regulators. Since the targets were set, the Economic Secretary to the Treasury, Mrs Helen Liddell, has been publishing monthly individual progress statistics for the top 24 firms. From October, statistics for the 17 additional firms are to be published.

Also in May this year, the SIB sought to speed the review further by publishing a list of criteria that benefit guarantees would have to meet, if they were to be used as redress for pensions mis-selling. This was an amplification of the SIB's 1994 Guidance on the review, which allows for redress by guarantee, subject to prior approval from the regulators on a firm by firm basis.

Copies of the PIA's announcement on targets are available from the PIA, and copies of the criteria for guarantees from the SIB Publications Unit.

Tradepoint refinanced

Tradepoint, the order-driven exchange competing with the London Stock Exchange, secured a new £11.4m (net) financing package in July which, it believes, will provide it with working capital for the foreseeable future. The introduction of new shareholders has been accompanied by a number of board and senior management changes.

Most of the new capital, which has been subscribed as zero coupon convertible, has come from three venture capital funds. Apax Partners has put in £6m (which would give it 29.2 per cent of the issued share capital on conversion), Electra has subscribed £1.5m and Smedvig £500,000. Other subscribers include three inter-dealer broker firms (IDBs), which have subscribed a total of £2.5m and entered into commercial trading arrangements with Tradepoint. The LSE has since announced significant changes and reductions to its own charges from October, when it introduces its new trading system.

London Stock Exchange transparency

Trade publication arrangements are being put in place by the London Stock Exchange for the introduction of its new electronic trading service — SETS — which aims to ensure that it is one of the most transparent equity markets in the world. The LSE has proposed that all trades should be published as soon as they have been executed. For very large orders, there is to be a special worked trade regime which will allow LSE intermedi-

aries to offer clients a guaranteed base price for very large orders and then to work those orders for improvement before agreeing the final price. Key aspects of the Worked Principal Agreement (WPA) which the LSE has agreed with the SIB are:

- orders qualifying for use of the WPA regime must be at least 8 x Normal Market Size (which equates to 20 per cent of a full day's customer trading).
- orders executed as part of the working must be published immediately, regardless of size.
- the originating order must be executed — and published — once 80 per cent has been worked or at the end of the day, whichever is sooner.

The Exchange estimates that no more than 15 per cent of trading by value should fall within the WPA regime.

Responsibilities of senior management

The SIB published in July a consultative paper on the responsibilities of senior management in financial institutions for establishing, understanding and applying adequate internal controls. It proposes to focus the boards and management of investment firms on the need for adequate internal controls in two ways:

- by issuing guidance on management standards in regulated firms;
- by requiring firms to draw up a statement on their management structure.

A firm's statement on its management structure should be available at all times for the regulator to see and will have to provide details of the individual responsibilities of the firm's directors and senior managers. They in turn will be expected to acknowledge that they are aware of and understand their responsibilities. The SIB believes that this requirement will impose no more than a minimal burden on well-run firms. The level of detail which the statement will need to go into will depend on the complexity of the organisation; some small firms may be exempted from the requirement altogether.

The SIB Guidance is intended to help firms ensure that their management standards comply with the SIB Principles, especially Principles 9 (internal organisation), 1 (integrity), and 2 (skill, care and diligence). The Guidance should assist investment firms to run their business in accordance with regulatory standards and may be used where appropriate for the purpose of intervention and discipline.

Cost-benefit analysis

In June the SIB completed a new text on regulatory effectiveness, *Protecting Investors by Enhancing Markets: A Guide to the Role and Nature of Regulatory Cost-Benefit Analysis*. The guide draws lessons, and uses examples, from the SIB's recent experience of cost-benefit analysis and related disciplines. It characterises cost-benefit analysis as an aid to policy makers in the form of an impact study. It shows how the market analysis and quantitative techniques involved can help the development of new regulatory measures and assessment of existing ones. It describes the range of benefits that regulation can bring.

The guide notes that cost-benefit analysis and its related disciplines are not exact sciences. Their value lies in making explicit all the likely impacts (costs and benefits) of a regulatory measure and in indicating the broad extent to which the benefits exceed the costs (or vice versa). The guide also sets cost-benefit analysis in its wider context, which includes the PIA's work on effectiveness and the government's extensive use of regulatory impact studies. These initiatives, and those of the SIB, have shifted the focus from the limitations of these disciplines to how much they can deliver.

Copies of *Protecting Investors by Enhancing Markets: A Guide to the Role and Nature of Regulatory Cost-Benefit Analysis* are available from the SIB's cost-benefit analysis department (tel: 0171 638 1240, ext 2145).

Open-ended Investment Companies

In May the SIB published proposals for regulation of the second stage of open-ended investment companies (OEICs). Currently, only OEICs which invest in transferable securities are permitted. The second stage would bring the range of investments available to OEICs in line with those available to authorised unit trusts, (ie money market funds, funds of funds, derivatives and property funds). That consultation is now complete. Further devel-

opments are dependent on the government's decision on whether it wishes this second stage of OEICs to be progressed.

In August the SIB made further proposals on collective investment schemes. First, proposals to develop a set of draft standards which a scheme would have to meet if it wanted to call itself "guaranteed". Key among these would be the need for a legally enforceable guarantee, with the guarantor being subject to prudential supervision. Second, the SIB proposed permitting single pricing for unit trusts, thus aligning the unit trust regime with that applicable to OEICs. Further work is being done on whether single pricing should, ultimately, be mandatory. The SIB also proposed minor amendments to the investment rules in the light of events at Morgan Grenfell.

Disciplinary action by the Personal Investment Authority (PIA)

Between January and September 1997 the PIA fined 10 firms a total of £716,000 and expelled one firm from membership for delays in carrying out the Pensions Review.

DBS Financial Management Plc was fined £425,000 plus £19,450 costs for rule breaches in connection with the review of past pensions business. The firm admitted that it had failed to take all reasonable steps to carry out its review of the past pensions business transacted by its appointed representatives and to monitor the review of pensions business transacted by its appointed representatives prior to joining DBS.

The M & E Network Limited was fined £100,000 plus £25,000 costs for failing to take all reasonable steps to carry out a review of past pensions business in accordance with the standards and specifications prescribed by the PIA. In particular, the firm admitted that between 8 March and 21 August 1996 it delayed the mailing of pension review questionnaires.

Lincoln Independent Limited was fined £75,000 plus £10,000 costs for failing to monitor adequately its employees' compliance with the firm's procedures in relation to the pensions review and, therefore, the firm's own compliance with the rules of the PIA. Berkeley Independent Advisers Ltd was fined £70,000 with £15,000 costs for issuing its appointed representatives with inadequate instructions on how to identify pension cases requiring a review and for failing to provide adequate procedures and resources to monitor its appointed representatives' conduct of the review.

Other PIA firms which were disciplined and the amount of their fines are: Glinthurst Insurance and Financial Consultants (£5,000); John Wood Services Ltd (£3,500); BMA Services Ltd (£30,000); Grosvenor Butterworth Financial Services Ltd (£2,500); Taylor Graham Financial Planning (£2,500); The Independent Consultancy Group (£2,500).

John Jackson Insurance Services was expelled from PIA membership.

Fidelity Brokerage Services (FBS)

On 9 May the Securities and Futures Authority (SFA) fined Fidelity Brokerage Services (FBS) £200,000 with a contribution of £162,500 to the SFA's costs. This was the culmination of a series of enforcement actions over the previous year which arose from accounting and reconciliation problems and large numbers of customer complaints associated with a new computer system and increased volume of business. On 31 October 1996 the SFA announced that FBS had entered into undertakings not to take on new direct customers or introduce new business services until the SFA was satisfied with its customer service performance. These undertakings were renewed at the end of January 1997, at which stage the SFA announced that it intended to initiate disciplinary action once the outstanding problems had been resolved.

The SFA closely monitored FBS's progress in resolving the problems, as well as its handling of customer complaints and payment of compensation. The SFA lifted the restrictions on 9 May 1997, at which time FBS acknowledged breach of SIB Principles 2 and 9, and disciplinary proceedings were brought and settled. The SFA acknowledged that investors money and securities were not in any jeopardy.

Swiss Bank Corporation

On 28 August 1997 the SFA announced the settlement of two disciplinary cases against Swiss Bank Corporation (SBC). The SFA severely reprimanded SBC and fined it

£300,000 with a contribution of £121,095 to the SFA's costs in relation to transactions involving shares in regional electricity companies and cash performance notes referenced to those shares during late 1994. SBC acknowledged that it failed to observe high standards of market conduct in its acquisition of a long position in Yorkshire Electricity Plc, that it failed to implement, monitor and control its Chinese Wall procedures, and that it failed to operate well defined compliance and supervisory procedures. The SFA for its part accepted that the breaches were not wilful or intentional, and that SBC acted in good faith.

The SFA also severely reprimanded SBC and fined it £180,000, with costs of £55,000, in relation to the liquidation of the Kleinwort European Privatisation Trust Plc (KEPIT) in October 1996. SBC admitted that it failed to act with due skill, care and diligence, and that it failed to ensure fair treatment to KEPIT's fund manager in relation to its disposal of KEPIT's portfolio holdings in France and Spain. The SFA for its part accepted that SBC did not set out to disadvantage its client and took prompt steps to investigate the matter internally and to correct the position.

Morgan Grenfell Group

The Investment Management Regulatory Organisation (IMRO) announced on 16 April that it had fined two companies in the Morgan Grenfell Group £2m in relation to breaches of IMRO's Rules and the SIB Statement of Principles. The companies were also required to pay £1m in costs. The level of fine reflects in part the number of investors affected and amounts of compensation involved. It also takes into account Morgan Grenfell's prompt response in agreeing the compensation package announced by IMRO on 20 December 1996. The fine relates to the management of Morgan Grenfell European Growth Trust, Morgan Grenfell European Fund and a Dublin-based fund, Morgan Grenfell European Capital Growth Fund.

IMRO's charges related to breaches of the SIB's Principles 2 (skill, care and diligence), 9 (adequate compliance arrangements) and 10 (keeping a regulator informed), as well as breaches of a number of specific IMRO rules. IMRO considers there to have been inadequate management control and that the affair plainly illustrates the dangers of ignoring clear and repeated warnings. IMRO also makes clear that it expects that other investment managers will ensure that they are not exposed to the same risks.

EU SUPERVISORY DEVELOPMENTS

EC Commission proposals for new measures to protect consumers of financial services

In June this year the European Commission published a "Communication" on *Financial Services: enhancing consumer confidence*. It sets out its proposals in response to the public consultation exercise it organised over the past 18 months on what new action at EU level might be required to strengthen the rights and protections of principally private consumers in the Single Market in financial services. The wide ranging action programme for the coming months includes a new directive on the "distance selling" of financial services, an updating of a 1976 Directive on insurance intermediaries, consideration of a new directive on "unregulated financial intermediaries", a review of a 1987 Directive on consumer credit, an update of the 1988 Recommendation on new means of payment, and Commission monitoring of a number of other areas with a view to deciding whether further formal measures are necessary at EU level. The various UK authorities will in turn be monitoring developments and contributing to negotiations.

ISDN Directive

The UK regulatory authorities have worked with HM Treasury and the DTI to ensure that current practice in the UK of recording of telephone calls by firms, exchanges or regulators for legitimate commercial and regulatory purposes, can be maintained under an EC Directive on the processing of personal data and protection of privacy in the telecommunications sector; and to minimise any adverse implications of the Directive for "cold-calling" rules to which firms may be subject in the UK and in other Member States.

European standards of fitness and properness

Through the Informal Group of Chairmen of EU Securities Commissions, the SIB, together with the Bank of England and the SROs, has launched an initiative to explore with other EEA competent authorities the scope for agreement on certain common standards and procedures in assessing the fitness and properness of investment firms (and relevant individuals in them) to provide investment services. This is intended to flesh out the relevant requirements laid down in the Investment Services Directive and Second Banking Directive, and to strengthen arrangements for co-operation and sharing information on firms and individuals, as far as national laws permit. Recent meetings have provided an opportunity for participants to gain a better understanding of each other's approach, criteria and formal powers in this area, and to identify points of similarity and difference. Work continues.

DEVELOPMENTS IN OTHER INTERNATIONAL FORA

Meeting of the G7 in Denver

At Denver, the G7 Heads of State and Government welcomed the further work that has taken place to enhance co-operation among supervisors, particularly of globally active financial institutions, on an ongoing basis and in emergencies.

The Joint Forum of banking, securities and insurance supervisors has agreed that, in appropriate circumstances, a co-ordinator should be identified to facilitate the exchange of information. Work is continuing to develop the roles of such a co-ordinator.

G7 finance ministers agreed to support changes in laws or regulations that would improve information exchange for supervisory purposes, while preserving the confidentiality of information exchanged. Finance ministries are now assessing impediments to the sharing of information, on the basis of work by banking, securities and insurance supervisors. This will be on the agenda for the Birmingham G7/G8 Summit next spring.

G30 Report on "Global Institutions, National Supervision and Systemic Risk"

A Group of Thirty report on the management and supervision of global financial institutions has been published. It concludes that an industry initiative is needed to promote consistently high standards of risk management and control for global institutions with substantial international operations. A detailed description of its contents can be found in the article, *Global Institutions, National Supervision and Systemic Risk*, in this issue

G10 Core Principles

The Basle Committee on Banking Supervision has now finalised its "Core Principles for Effective Banking Supervision". These represent the first time that the international supervisory community has attempted to formulate comprehensive principles for the conduct of banking supervision in general, as opposed to particular, aspects of supervision. The Core Principles were drawn up by representatives of the Basle Committee and of a number of emerging market economies.

The 25 Core Principles cover all aspects of banking supervision, from licensing through to the powers of supervisors and co-operation between supervisors from different countries. They are designed to operate as high level principles. They do not require that the practice of supervision follow any particular model, but can be adopted to fit a wide variety of national circumstances.

The Core Principles were formally launched at a meeting held in Hong Kong during the Annual Meetings of the World Bank and the International Monetary Fund

REGULATORY DEVELOPMENTS IN OTHER COUNTRIES

Australia

The Wallis Inquiry

On 2 September 1997 the Australian Government announced it's response to the Wallis Inquiry report on Reform of the Australian Financial System which had

been published in April. Responsibility for financial regulation will be divided between three agencies:

- The Reserve Bank of Australia will be charged with looking after the stability of the financial system. As well as financial stability, it will be responsible for the regulation of payments systems (as well as conduct of monetary policy).
- The Australian Prudential Regulation Authority will undertake the prudential regulation of deposit taking institutions, life and general insurance companies and superannuation funds.
- The Australian Corporations and Financial Services Commission will have responsibility for regulating the integrity of market conduct, consumer protection and corporations.

A further body called the Council of Financial Regulators will be established on which each of the individual regulatory bodies will sit. Its purpose will be to ensure co-operation between the three new bodies and, in addition, it will aim to minimise the compliance costs to firms of the new regulatory arrangements.

It is currently envisaged that the changes will be introduced by the middle of 1999. A number of changes to the payments system are also planned. Access to the payment system is to be widened beyond licensed banks and deposit taking institutions. A body called the Payments System Board will be created within the Reserve Bank of Australia. This body is to be charged with responsibility for improving the efficiency of the payments system. Legislation is also to be introduced to minimise systemic risk arising from the failure to settle by individual participants in the payments system.

United States

Glass-Steagall reform

The Banking and Financial Services Committee of the US House of Representatives narrowly approved a financial services reform bill in June. This bill would dismantle the provisions of the 1933 Glass-Steagall Act which separate commercial and investment banking in the US.

In particular, it abolishes the restrictions on commercial banks' securities activities and permits them to derive a limited amount of revenue from non-financial activities. The bill does however maintain many restrictions on commercial banks' insurance business. It would also allow non-financial firms (other than, in effect, the top 1,000 largest US companies) to derive a limited amount of their revenues from banking activities.

The bill would create a body called the National Council on Financial Services which would have the authority to define financial products and to determine permissible financial activities.

Substantial amendments were made to the bill when it was further debated in the House Commerce Committee. These changes may alienate some of the bill's existing supporters and could adversely affect its chance of success. Even if approved by the Commerce Committee, the bill must overcome a number of obstacles before facing a vote in the House later this year or early in 1998.

Japan

Big Bang

In November, the prime minister, Ryutaro Hashimoto, proposed a wide-ranging set of reforms to the regulations that govern financial activity in Japan.

These proposed reforms have come to be known as "the Japanese Big Bang". They aim to improve Tokyo's standing as a financial centre, to make it "free, fair and global" and comparable to London and New York by the year 2001.

The initiatives are wider than was the case in the UK Big Bang in the mid-1980s (which was limited solely to the Stock Exchange). They include the liberalisation of foreign exchange, as well as revisions to the tax system and accounting standards.

A number of measures will become effective from April 1998, one of the key elements of which is implementation of the Foreign Exchange Law. This will completely liberalise cross-border transactions, and so accelerate the trend towards deregulation.■