in association with the Securities and Investments Board

FINANCIAL STABILITY

review

IN THIS ISSUE

Remuneration and risk

Profit-related bonuses are common in financial firms. What effects can the incentives created by remuneration policies have on the overall risk profile of a firm, and how might these effects be mitigated?

UK mortgage margins

The past two years have seen intense competition between lenders in the mortgage market, with interest rate discounts or 'cashbacks' on offer to borrowers. Does this raise prudential concerns?

Order-driven trading

Forthcoming changes to the London Stock Exchange may herald a second 'Big Bang' for the City. What issues do changing market structures raise for the SIB as a regulator?

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- **to facilitate discussion of issues that might affect risks to the UK financial system**
- **to provide a forum for debate among practitioners, policy makers and academics**

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Financial sector issues 3
By Prudence

The efficiency of regulation 8
The Chief Executive of the SIB explains why the SIB and SROs will be giving efficiency of regulation a high priority this year. ***By Andrew Winckler***

Modelling and pricing credit risk 11
Many banks are focusing on developing credit risk models as a method of pricing loans. ***By Lyndon Nelson***

Remuneration and risk 18
How does the structure of staff remuneration packages affect a firm's risk profile and what can firms do about it? ***By Daniel Davies***

Operational risk management: where to start? 23
There is a growing recognition of the need for financial firms to manage their operational risks. Why has operational risk become more important and what steps can firms take to control it? ***By Jeff Thompson and Chris Frost of Price Waterhouse***

Fraud: a personal view 32
The retiring Head of the Bank's Special Investigations Unit shares his personal view on the nature of financial fraud. ***By Ian Watt***

UK mortgage margins 38
How have developments in this competitive market affected mortgage margins and do the changes represent a prudential concern? ***By Niall Gallagher and Alistair Milne***

Beyond Glass–Steagall: regulatory change in the United States 47
How will changes in the regulatory framework affect the US financial scene and what issues need to be addressed? ***By Peter Brierley***

Lloyd's: current developments and the challenges ahead 54
Few institutions have survived losses on the scale of Lloyd's of London in recent times — what challenges lie ahead for Lloyd's and its regulators? ***By Stephen Walton of the Department of Trade and Industry***

Credit exposure in OTC derivatives: a risk management challenge 60
How can firms model and manage the credit exposures that arise when they trade in over-the-counter derivatives? ***By Andrew White***

Regulation and market design: the Stock Exchange's order book 68
Forthcoming changes to the London Stock Exchange potentially herald a second 'Big Bang' for the City. What issues has the SIB had to address as regulator? ***By John Whitmore***

Regulatory developments 74

disadvantages. A number are also investing in further IT development to address the problems highlighted above.

Allocating reserves

A number of banks are considering extending the concept of expected loss further by making a separate and identifiable reserve to cover the loss predicted by their model. Proponents of identifying a reserve equal to the level of expected loss argue that, in terms of profitability, it presents a more accurate picture of the bank's performance, since it explicitly recognises that there are risks associated with some of the income earned.

Raising a specific reserve against a concept of expected loss has, however, sparked a debate within the accountancy profession as to whether this would represent a 'true and fair view'. Some have argued that it does not, because the losses by definition have not yet materialised. Others counter that creating a specific reserve is closer to the spirit of accrual accounting, whilst in the balance sheet it gets close to a net present value of loans rather than a book value.

Regardless of the final outcome of this debate, setting aside an explicit expected loss reserve could well be an option as far as internal management accounts are concerned or as a method of determining general provisions. In either case, banks would not receive tax relief, until the losses had actually materialised.

Possible drawbacks

One way in which credit risk models differ from market risk models, despite a shared ancestry, is that much of the necessary data will need to be constructed and may not cover a sufficiently long time series. Banks acquire a wealth of data on corporate loans in the course of their business, but it is likely to be deficient in some respects. These deficiencies typically fall into two categories: breadth and number of observations.

It remains vitally important that management fully understand the models

Breadth

Analysis of data can reveal key factors associated with a loan going into default at some period during its life. However some factors identified as good predictors of default may not be available in accessible form.

Redressing such problems can often involve much effort in manually correcting data so that there is a reasonable time series of key variables. If appropriate data are not available the bank must resign itself to an incomplete data set, whilst collecting such data for the future — or possibly buying them from elsewhere.

Number of observations

To be reliable, credit data should cover at least one full economic cycle, due to the high correlation of loan defaults with the cycle. In contrast, data used in market risk models cover a shorter time horizon and are usually of a much higher frequency.

Prudential issues

Credit risk models are helpful in evaluating and pricing counterparty risk and in the overall portfolio management of a bank's assets. There seems little doubt that they will be a key business tool in the future. They are, however, still very much in the development phase compared to their more sophisticated cousins, market risk models, whose methodology is increasingly accepted by banking supervisors.

Similar recognition for credit risk models is therefore likely to be some way off. In addition the following implications of a system of credit risk models also need to be considered:

- Context — internal models offer an opportunity to measure risk more precisely and accurately. However, it remains vitally important that management fully understand the models and have

IN THE PREVIOUS ISSUE OF

FINANCIAL STABILITY

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THE FOLLOWING TOPICS WERE COVERED

Culture of regulation

Successful supervision depends not only on having the right rules and tools, but also on getting the culture right. The Deputy Governor of the Bank of England looks at the lessons from the Bank's review of supervision.

Building society conversions

Some building societies are becoming banks. What are the motives and mechanics of changing status and what supervisory issues arise?

The SIB review of the metals markets

The London Metal Exchange is the largest exchange trading metal derivative contracts. It is different in some key respects from other derivatives exchanges.

Electronic money: public policy issues

Many types of 'electronic money' are under development, promising more convenient and efficient ways for consumers to pay, but also with potential risks.

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

Bank failures are usually big news. But UK banks that have gone under were mainly small, with a low payout from the Deposit Protection Fund.

International regulatory co-operation

Banks and securities firms are becoming more global, and the distinction between their business more blurred. How can regulators respond?

CREST: its recognition and approval

London's new equity settlement system was launched on 15 July 1996. As well as the work on design and implementation, CREST posed issues for regulators.

Bancassurance: European approaches to capital adequacy

Banks and insurance companies are increasingly getting involved in each other's business. What capital treatment is appropriate for the banks?

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FINANCIAL SECTOR ISSUES

Pay levels in the City have been of recurring interest. An article in this edition of the Financial Stability Review examines a particular aspect — the way bonus structures can affect firms' overall risk profiles. But this is only one of a number of management challenges facing financial firms. Others relate to new techniques for assessing and handling credit risk; and to the effects of technology on traditional patterns of financial intermediation. All these developments raise issues for financial regulators.

Human resources

In many areas of financial business, revenue is highly variable from one period to another. Firms engaged in such business naturally seek to keep the ratio of fixed to variable costs as low as possible. If they can link costs closely to revenues, then the variability of net income will be reduced.

This is the rationale for the high levels of performance-related bonuses in comparison to salaries. Correspondingly, part of the high average level of remuneration can be regarded as employees' compensation for bearing this risk.

Some of this variability in remuneration, however, may be more apparent than real. It is often said that a company's most important assets are the skills and knowledge of its workforce, but these are 'assets' which the company does not actually own. This has led regulators to identify a phenomenon which might be called 'intellectual risk'. If a specialised team departs *en bloc*, its former employer must decide whether to stop dealing in a particular product until the team can be replaced — perhaps losing market share permanently — or to place less experienced staff in the front line.

Employers may also be reluctant to cut bonuses fully in line with a fall in revenues. This effect will be particularly pronounced if a firm has performed *relatively* badly and its competitors have fared better, and are able to offer bonuses. But if costs cannot fall along with revenues, then the risks of a volatile income stream fall on the employer. When looking at the quality of a stream of earnings, the management of a firm needs to consider what proportion of costs are fixed in practice rather than in principle. This could have a material impact on the financial assessment of a business area.

Beside their effect on the cost structure of a business, bonuses clearly also have an important role as a management tool. Here, common sense suggests that firms should reward only the kind of behaviour they wish to encourage. Schemes which emphasise revenue generation and pay less attention to the attendant risks may send the wrong messages to employees. This can put unnecessary strain on a firm's other management and control systems.

The seller of corporate loan securitisations, or other contracts written on credit risk, may well be better informed about that risk than the buyer

Managing credit risk

The ability to manage credit risk across a portfolio of loans has been an elusive goal, especially where the portfolio is illiquid and consequently difficult to value. The question then arises whether techniques developed for analysis of securities can be adapted for use with a loan book.

A number of recent developments bear on this issue. First, the establishment of a Secondary Loan Association in London, with the aim of promoting the transferability of loans, should improve liquidity. Second, NatWest launched an innovative sub-participation in a portfolio of their large corporate loans. Third, there has been expanded use (albeit starting from a low base) of credit derivatives. All these are opening up new ways for banks to manage their credit risk more effectively.

In the past, if banks wished to alter the balance of their loan portfolio, the main routes were through acquisition or movement into a new product area. There was also the opportunity to use securitisations, especially for mortgages, consumer loans and credit card receivables. But the sale of large corporate loans has been comparatively rare. These large corporate loans were considered too 'lumpy' — the risks could not be managed on an actuarial basis. The NatWest sub-participation is novel in many ways, not least in its acceptance of credit modelling techniques as an indicator of future default risk.

These various techniques for risk transfer do, however, have implications for the relationship between borrower and lender. This is particularly so in the case of the securitisation of corporate loans, where the relationship with each individual borrower is typically closer than for, say, a credit card loan.

This means that the seller of corporate loan securitisations, or other contracts written on credit risk, may well be better informed about that risk than the buyer. If the market for credit risk instruments is to develop, then prospective buyers will need to satisfy themselves that they have sufficient information to be able to make informed decisions.

Retail banking

The retail franchise of the large UK banks has traditionally been regarded as very strong. Barriers to entry were high because the costs of a branch network were regarded as prohibitive. In recent years, however, developments in technology have opened up new delivery channels.

It is also becoming more common for customers to have relationships with more than one financial services provider. They may keep transactions balances with one institution, savings with a second and have a personal loan provided by a third.

The combination of falling barriers to entry and the end of exclusive customer relationships has allowed a new kind of firm to enter the market. These new participants — who include some of the large retailers — often do not provide

a full range of loans and savings products. They concentrate instead on providing financial services which can be sold as discrete, standardised products, where a brand name can lend a competitive edge.

Some customers may feel more secure dealing with an established bank. But many new entrants to the retail financial services market have names which are just as familiar to customers as those of the high street banks. The experience of Marks & Spencer in consumer finance has shown that goodwill which has been built up in the retailing sector can be transferred to the provision of retail financial services. Several other retailers have announced their intention to move into this market, either by forming their own authorised institution, or through a joint venture with a bank.

Faced with a new injection of competition into their market, retail banks will need to think carefully about the nature of their competitive advantage. Whilst they have an existing customer base, many of their new competitors from the non-financial sector arguably have more experience in marketing and managing a retail operation.

Where banks do appear to have retained an advantage is in their ability to process and settle financial transactions. Over the last decade, banks have invested heavily in automating clerical procedures, and their transactions processing infrastructure would be hard for a new entrant to duplicate. In financial services it can also be necessary to reject custom, which rarely happens in retailing. So while the large banks' retail franchise is likely to become more heavily contested in the next few years, it is unlikely to be eroded completely.

Banking on the Net

Home and telephone banking have been around for some time, but the Internet and similar applications of information technology further widen the range of possibilities. This widening of choice is good news for the consumer, but it is not without risk. It may be difficult to establish the credentials of some firms. In some cases, it may not even be clear from which country they are operating. Compensation arrangements in the event of product failure may be weak or non-existent.

Some advertisements placed on the Internet offer deposit-taking or investment services, either in the United Kingdom or overseas. Anyone considering responding to such an advertisement is advised to check whether or not the bank or company concerned has been authorised. The Bank and the SIB will always be able to advise on whether a particular firm is authorised to take deposits or conduct investment business in the United Kingdom.

Advertisements may also be placed by overseas banks and other financial companies which have no physical presence in the United Kingdom, or where the UK entity is in another part of the group. In these

The combination of falling barriers to entry and the end of exclusive customer relationships has allowed a new kind of firm to enter the market

Widening of choice is good news for the consumer, but it is not without risk

cases, it is best to check with the relevant regulator in the country concerned. The Bank and the SIB will try to help identify the relevant regulator where this is unclear. Potential investors should also check the company's reputation and financial standing by, for example, requesting a copy of its most recent annual report and accounts. Finally, potential customers should try to establish what deposit protection or investor compensation applies, if any. These basic steps will not eliminate risk, but they at least give the consumer a basis for making informed decisions.

Further guidance is provided in the Bank's recently-revised leaflet 'Money in the Bank', which has been published on the Bank's web site (http://www.bankofengland .co.uk). The telephone number for the SIB's Central Register of authorised firms is 0171 929 3652.

Protection and disclosure

Technology is one force driving financial innovation. The widening of individual choice is another. The range of retail financial products now on offer reflects the increasing diversity of individuals' investment requirements. But to what extent do individuals understand the products they choose?

Improved communication of information by sellers of retail financial products is clearly beneficial, but it begs some questions. The answer to "How much information and of what kind?" depends not just on the product, but also on the customer. Can unit trusts, life assurance and personal pensions be sold on the basis of a simple index from 1 for the 'safest' to 7 for the 'riskiest'? Do all holders of corporate bond PEPs understand that their capital will fall if interest rates rise? As advice and information about products proliferates, how can investors make sense of the conflicting messages they receive?

Individuals who were mis-sold personal pensions typically left their employer's defined benefit scheme offering a pension based on final salary and length of service. They chose to make their own contributions to a fund offering an uncertain return, but one which they were encouraged to believe would be higher. A few of the first generation of personal pensioners have been unpleasantly surprised to find their retirement income lower than they had expected. In the worst cases, expectations of private pensions were plainly unrealistic, but the comparison between the two kinds of scheme is in principle difficult to make — complicated by diverse factors, but especially labour mobility and 'early leavers'. The level of state pension is more predictable, but has been declining as a proportion of average earnings over time.

The new regulatory requirements for disclosure have provided a stimulus to the development of new products which are designed to be more transparent than some of their predecessors. This has been exemplified in the promotion of 'no frills' products by compa-

nies which rely on telephone selling.

Open Ended Investment Companies, authorised since January, have the potential to supplant much unit trust and investment trust business. Being single-priced, rather than subject to a bid-offer spread, the disclosure of charges is arguably more transparent than on unit trusts; but, cynics may argue, all change risks greater confusion.

If successive generations rely more heavily on defined contribution pension schemes, or hold more of their savings in complex investment schemes, there is a collective as well as individual interest in promoting better consumer awareness of the nature of risk in retail financial products. In the meantime, institutions need to examine their products carefully, to ensure that the information provided is appropriate for the customer and properly reflects the risks involved.

The Bank's review of supervision

In February, the Bank published two of the papers foreshadowed in the Autumn 1996 issue of the Financial Stability Review. The first is on *The objectives, standards and processes of banking supervision*. It sets out the Bank's objectives in carrying out its supervision of banks, the standards the Bank sets itself to ensure that the objectives are met and the main processes used. The paper stresses that attempting to avoid all bank failure would be unhealthy for the economy, as it would inhibit competition, innovation, and the taking of risk, and increase the costs of supervision. It would also be virtually impossible to achieve.

The second paper is a consultation document on *Banks' internal controls and the Section 39 process*. This outlines proposals to improve the effectiveness of the Section 39 regime, which is one of the Bank's key tools of supervision. Proposals include the provision to the supervisors of annual statements by the Board of Directors of a bank, and formal confirmation from the reporting accountant and the auditor that nothing has come to their attention in the course of their work that causes them to believe that a breach in the authorisation criteria has occurred. There are also proposals for additional bilateral meetings between the Bank and the reporting accountant. Comments are requested by 18 April.

Among the other projects identified in the Bank's review, the rationalisation of the liquidity reporting requirements is under discussion with the British Bankers' Association. Further consultation papers are planned to cover *Risk-based supervision* (the RATE framework), as it might apply to banks incorporated in the United Kingdom; and *The supervision of branches of banks incorporated in non-European Economic Area countries*. The first of these may be ready before Easter.■

Prudence

There is a collective interest in promoting better consumer awareness of the nature of risk

THE EFFICIENCY OF REGULATION

By Andrew Winckler, the Securities and Investments Board

This year, the SIB and other Financial Services Act regulators will be giving priority to work aimed at improving the efficiency of regulation. Andrew Winckler, Chief Executive of the SIB, explains the background to this work and considers the major issues being addressed. What steps can regulators take to ensure proper consideration of the costs and benefits of regulatory requirements? Will efficiency be improved if more reliance is placed on firms' own internal compliance arrangements?

Andrew Winckler, Chief Executive of the Securities and Investments Board

During a recent meeting with stockbrokers in Manchester, one of them asked me: "Is all this regulation really worth it — endless rule books, fees to different regulatory bodies, long client agreement letters which nobody wants to read? What has it all achieved? Is the world better off?"

He is hardly alone in asking questions about the effectiveness and efficiency of regulation under the Financial Services Act (FSA). This is now a pretty topical subject in the industry, in the regulatory community and more generally. As a former practitioner myself, I share such concerns. My answer to the stockbroker's question is "Yes, but". Yes, the regulation of investment business has certainly produced identifiable benefits and improvements, but there is still much to be done to make regulation more effective and efficient.

Benefits of regulation

What do I mean by identifiable benefits and improvements? First, the admissions process — vetting firms at the entry gate before they are authorised to conduct investment business — has led to the weeding out of many dishonest and incompetent operators.

In addition, the obligations under the FSA which govern firms' dealings with their customers — for example, the requirement that where a client is relying on a firm for investment advice, that advice should be suitable to the client's needs and circumstances — have helped protect investors from sharp practices.

The compensation scheme to which investors have access when an investment firm fails is much wider in scope than before.

The overall system of regulation has made it more difficult for fraudsters to operate in investment markets and has increased the likelihood of detection if they do — since 1988 over 200 individuals have been convicted of investment business fraud as a result of information passed to the criminal prosecuting authorities by the SIB or other FSA regulators.

Costs of regulation

Of course regulation costs money — it would be naive to pretend otherwise. But it does, as I have said, bring benefits. There is much loose and rather inaccurate talk about 'costs of compliance'. We do not accept a number of the published estimates of compliance costs for firms. Some have been based on little or no proper research and rely

on tendentious arguments which materially exaggerate the true position. It is also notoriously difficult to distinguish costs which a firm would incur in running its business prudently, to provide a good service to customers, from costs arising from regulation.

There is some concern about the expectations which the public should have in this area. Investment firms are in the business of taking risk and no system of regulation can, or should even attempt to, prevent all failures. Equally, there will always be human greed and folly, and there is significant moral hazard if we do not make clear to investors their own responsibility for the decisions they take about what to do with their money: *caveat emptor* — let the buyer beware. The subject of investor education is gradually moving up the agenda.

The improvements brought about by regulation are frequently overlooked and need to be more widely understood. At the same time, there is a continuing concern that regulatory processes are too burdensome. This is in part a reflection of the ambitious scope of the changes introduced by the FSA ten years ago. It is scarcely surprising that a new regulatory regime, covering everything from broker dealers in global markets to insurance brokers operating in the high street, from institutional fund managers to solicitors advising individuals on their pension arrangements, should need to evolve and improve. We should expect no less.

Future improvements

In 1997, the SIB and other FSA regulators will be giving priority to some major pieces of work aimed at improving the efficiency of regulation. Efficiency, like charity, begins at home. As Chief Executive of the SIB, I am conscious of the need to run a tight ship. In the financial year just ending we froze our budget and headcount at the previous year's levels and in our Plan for 1997/98, published at the end of January, we announced that we have been able to hold our budget for the coming year at the same level as in 1996/97 in real terms.

> Investment firms are in the business of taking risk and no system of regulation can — or even should attempt to — prevent all failures

Last year we invited external consultants (KPMG) to review the cost effectiveness of three of our activities:

- Supervising frontline regulators.
- Dealing with allegations of unauthorised investment business ('policing the perimeter').
- Allocating our costs to our fee-payers (that is, mainly the organisations which we supervise).

KPMG's report on these three areas was published in full, with our Plan, at the end of January.

We have accepted the great majority of their recommendations and we will be working to implement them over the coming year. Full implementation depends materially on the ability and willingness of the frontline regulators to provide us, on a continuing basis, with adequate information on how they discharge their statutory responsibilities.

The FSA regulatory system consists, of course, of two tiers: the SIB and the twenty 'frontline' regulators — the Self-Regulating Organisations (SROs), the exchanges, the clearing houses and the professional bodies. In order to avoid the duplication of effort which such a system can produce, we have set up a number of 'operating groups' — working groups drawn from relevant frontline regulators and the SIB, which consider a subject of

mutual interest (for example, custody of investors' assets) and report in common form to all the relevant Boards. This is proving a more efficient way of dealing with such topics; we hope that it will develop further over the coming year.

We are determined to improve the efficiency of regulation further. The SROs have launched specific projects with a common theme of targeting regulatory effort more precisely on areas of risk. The Personal Investment Authority's Evolution Project is considering how the process of selling retail investment products to private investors operates — for example, whether full fact-finds are needed in all situations in which a financial adviser is attempting to sell a product to a member of the public. The Personal Investment Authority will then go on to consider issues about how to express regulatory requirements, for example through high-level principles or detailed rules. The third stage of the Evolution Project will consider aspects of monitoring of firms' business.

For its part, the Investment Management Regulatory Organisation is running a pilot project to examine what scope there may be for lighter monitoring of firms with an established record of good compliance. The Securities and Futures Authority is developing further its risk-based approach to supervising firms and to setting levels of regulatory capital, taking into account firms' own risk management systems.

The SIB will carry out two main pieces of work in this area in the coming year. First, we will review the arrangements which the SROs and the Professional Bodies have for complying with their obligations under the FSA to take into account the cost of compliance when making rules.

When we develop new standards of investor protection we want to know about their likely impact — the costs and benefits for firms, investors and markets.

Second, we expect shortly to issue a discussion paper on regulatory effectiveness and techniques. This paper is intended primarily to raise issues and stimulate debate, rather than to suggest firm answers. It will review experience gained over the last ten years, in relation to both the techniques which regulators use and the situations which are most likely to expose investors to risk. The paper will take into account work already in hand within the regulatory system to improve efficiency and will seek to identify any areas in which further work may be desirable.

When we develop new standards of investor protection (for example, for disclosure of information on products and charges) we want to know as much as we reasonably can about their likely impact — the costs and benefits for firms, investors and markets. Our cost-benefit analysis unit therefore undertakes research, which we frequently publish as part of the consultation process, on the costs and benefits of particular proposals.

Conclusions

All of this does not, of course, give an easy answer to the stockbroker's question with which I began this article. What it does show is that FSA regulators are working hard to deliver more efficiently our basic objectives:

- To protect investors from fraud and abuse.
- To promote clean and orderly markets.
- To guard against systemic risk.■

MODELLING AND PRICING CREDIT RISK

By Lyndon Nelson, Financial Structure, the Bank of England

Banks face a variety of risks in the course of their business but, for the majority, credit risk remains the most important. In the past decade, however, the development of tools to measure and control market risk has been the priority for many institutions. By comparison, control of credit risk has received less publicity. But now banks are developing new techniques to assess and manage credit risk.

Any bank engaged in lending needs to assess its credit risk carefully. Credit risk can be defined as the risk that a borrower will be unable to meet its obligations when they fall due. How a bank manages its credit risk will influence its profitability.

Most banks develop internal policy statements or guidelines, setting out the criteria that must be met before they extend various kinds of loan. Traditionally, banks have relied on experienced managers or underwriters to offer a subjective assessment of each loan within the framework of the bank's policy. The subjectivity of this process leaves banks vulnerable to the level of skill and experience of their loan officers. Decisions are often inconsistent from one part of a bank to another. In addition, because of the complex nature of many loan applications, subjective assessment is often time-consuming and costly.

Improvements in the techniques used to control credit risk are therefore intended to carry a number of potential benefits for banks:

- Less volatile profits, which should improve the bank's standing in the market.
- Lower costs.
- Greater speed and consistency in decision-making in turn leading to improved customer/bank relationships.

In practice, banks are using credit risk models to screen customer requests and improve decision-making principally in the following three areas:

- Credit risk pricing — where banks are looking to formulate pricing models that reflect all of the costs and risks they undertake.
- Allocating reserves and earmarking profit — a number of banks are considering using credit risk estimation to determine a "provision" or allowance against current levels of profitability, in order to provide a risk adjusted measure of performance.
- Capital allocation — credit risk models can also help a bank to determine the amount of economic capital it needs to hold, provided they are used with other models designed to measure market and other risks that the bank is running. In large banking groups, economic capital can then be notionally allocated to business units so that a risk adjusted return for that business unit can be calculated.

Lenders are developing credit risk models to help them decide what price should be charged for the risk of default

Credit risk pricing

The process of developing a credit risk model can be broken down into three distinct stages.

The first stage involves placing a loan into a portfolio, or 'risk grade', of loans carrying similar risk and then estimating the probability of default — for example, on the basis of historical averages of default behaviour of similar loans.

The second stage is to estimate the *expected loss* on the loan. This involves not only the amount of the loan and the estimated probability of default (taken from the risk grade) but also an estimate of the amount a bank expects to recover from any collateral taken to support the loan. (It is important to remember that a loan in default does not necessarily imply that the bank will incur a loss. If the collateral taken is estimated to be sufficient to cover the amount owed to the bank plus interest due, then the expected loss would be zero.)

The term typically used to describe the loss incurred from failing to recover the full amount of the loan is 'severity' (arithmetically, one minus the recovery rate). A bank would therefore need to model severity for different types of collateral, taking into account historical averages of recoverability, as well as the costs of such realisation. A bank should seek to recover the amount of expected loss directly through the price charged to the customer.

The third and final stage is to estimate the extent to which actual losses incurred on a portfolio will vary from the expected loss.

A bank can use its own experience of the past to determine the way actual losses have varied against the expected loss to estimate the variance. A bank must then choose, say by reference to its actual or its target credit rating, the proportion of less likely potential outcomes that should be covered by capital. In essence, this is equivalent to self-insurance. The cost of the amount of capital required to cover the unexpected loss associated with an individual loan, as part of an overall portfolio, would also be reflected in the price charged to the customer.

Loan grading

Banks have used 'credit scoring' techniques for many years to numerically weigh or 'score' various elements of their lending decisions.

Developing a scoring system usually requires a bank to consider the historic performance of its loan book. For this purpose, the loan book is often divided into two categories: 'good' accounts where the loan is repaid according to schedule and 'bad' where accounts have fallen into some form of default. The bank then analyses data from each loan, using a technique such as multivariate statistical analysis to identify which set of characteristics is most useful in identifying those borrowers who are likely to meet their scheduled payments and those who are not.

The statistical analysis provides weights (or scores) for each factor, according to its relative importance in predicting into which group an individual loan will fall. Lending decisions are then made on the basis of the score achieved by each loan.

Credit scoring techniques have generally been most successful in retail lending business, such as credit cards or mortgages, where standardised products and high volumes lend themselves to the statistical techniques used. Indeed, the analysis that underpins credit scoring models has now become so well established that it is extensively used in asset securitisation.

In a typical securitisation, potential investors must form a view on the future performance of a given pool of assets. Historical performance and the accuracy of credit scores as a predictor of default are often heavily relied upon in making this assessment.

Although the motives and incentives for asset securitisation are complex, it is not surprising that until very recently most securitisations have tended to be of consumer loans or mortgages. The techniques developed for standardised retail products are, by and large, unsuitable for handling lending to large corporates, but many banks have adopted loan grading systems for their corporate loan books.

These systems typically assign a numerical or alphabetical code to loans on the day they are written. More sophisticated models will also provide for this grade to be updated, using such information as account behaviour during the life of the loan. Loan grading systems tend to be more subjective in their assessment of credit quality than is typically the case with credit scoring systems.

Having classified its loan book into different grades, a bank will assign a probability of default to each loan grade. If a bank's loan grading system has been in place for some time, determining the probability of default may simply be a case of monitoring the historic performance of loans in each grade.

If a bank does not have an established loan grading system, it will need a large number of high quality observations to estimate the expected default probabilities successfully.

Expected loss

The next stage is to determine the expected loss that would occur on default. This will vary depending on the size of the loan and the likely recovery rate were the loan to go into default. The type of facility and the nature of the repayment schedule will have a bearing on the recovery rate, but the main influence is the value of any realisable collateral.

In estimating the likely recovery rate, a bank must take account of the state of the economic cycle, to determine the likely re-sale value of an asset, as well as give consideration to market liquidity so that the costs of recovery and funding costs can be incorporated.

A bank that tried to estimate its recovery rate on the basis of the

The techniques developed for standardised retail products are, by and large, unsuitable for lending to large corporates

high point in the market could well find itself under-estimating its expected loss and under-pricing the risks it was incurring. Hence, in circumstances where a bank is constrained in its ability to call for additional collateral during the life of the loan, it must take full account of the valuation and liquidity cycles of collateral at the time of writing the loan.

In reality, UK banks will usually be exposed most often to property as the collateral for small and medium sized companies. It is often this exposure that results in a high unexpected loss on such lending, since both the ability of customers to repay and the value of the collateral are highly correlated throughout the economic cycle.

It is possible to arrive at the same expected loss from a range of different values for expected default and recovery rate. For example, in a simple system in which only the collateral and expected default were considered, a loan with an expected default frequency of 0.32% would yield the same expected loss, with no recovery expected or 100% severity, as a loan with an expected default frequency of 0.64%, which was secured and had a severity of 50%. In expected loss terms, the bank would be neutral between the two combinations.

For the borrower, the trade-off is a simple one: offering higher quality collateral creates the same risk for a bank as a customer with a lower default probability. This can lead to a phenomenon termed 'credit drift'.

Credit drift occurs when a bank becomes progressively more reliant on collateral to ensure its return on a portfolio of loans. In the above example, the bank would need to resort to its collateral to compensate for the higher incidence of default, if it wished to achieve the same return on a portfolio of loans with lower default risk but no collateral.

'Credit drift' occurs when a bank becomes progressively more reliant on collateral to ensure its return on a portfolio

The realisation value of collateral therefore has an important bearing on a bank's overall return. It is equivalent to taking a long position in a security and, as such, the bank needs to be aware of the potential holding cost and the movement in market prices that may occur.

In assessing the risk of default, a bank will also need to consider the changing quality of counterparties and exposure over time. When developing models, assuming they have sufficient data, banks will be able to draw up migration paths that estimate the changing nature of loans over the full length of their maturity. If the estimate is that the counterparty and/or the collateral will worsen over time, then this additional risk should be factored into the price of credit, particularly if there is no scope for periodic reviews of the terms of the loan.

Unexpected loss

The expected loss on an individual loan can be estimated only by examining the loan as part of a portfolio of similar risk assets. The actual loss experienced will vary from this expectation and this variance is termed the unexpected loss.

In estimating this variance, most banks will turn to an analysis of historic performance of loans within a certain loan grade. It will be affected by the number of loans in a given portfolio, the size of those loans and the extent to which loans within a portfolio are correlated. If a portfolio is well diversified, the degree of correlation is likely to be small. With both an expected loss and unexpected loss figure, a curve such as the one shown on the opposite page can be derived.

Chart 1 shows the possible distribution of actual losses on a hypothetical loan portfolio. The area under the curve measures the probability of a particular level of loss occurring. The asymmetric tail is a result of occasional large losses

in the portfolio, and it is for this reason that the expected loss is greater than the most common loss amount.

In this chart, it is assumed that the bank wishes to use its capital to safeguard against all eventualities up to X standard deviations of default away from the expected loss. Capital is not a free commodity and will carry a cost so, if the portfolio is to be profitable, it should cover not only the expected loss but also provide an adequate return on the capital being used to support the portfolio. In most cases, the bank would set the "adequate return" in the form of its target return on equity. In certain circumstances, banks might choose to either relax or strengthen this target for certain businesses, depending on their overall strategic importance.

Capital allocation

This methodology can be used to price an individual loan, but it can also be helpful in determining the amount of capital that should be allocated to individual business units within a banking group. A number of banks are exploring this possibility. The aim is to assess contributions from business lines on the basis of returns obtained per unit of risk, and then invest more capital in those areas that provide the best risk adjusted return. However, banks remain some way from achieving this goal, for several reasons.

First the risks incurred by a business are not simply credit risk. Other risks such as market risk, operational and actuarial risk (where there are insurance risks) also need to be taken into account if the bank is to obtain a complete picture of the returns being earned for the risk undertaken.

In addition, the bank would need to estimate the correlation between the different risk types, although in practice the correlation may be low, because it is unlikely that a bank would face a simultaneous call on its capital from all the various categories of risk.

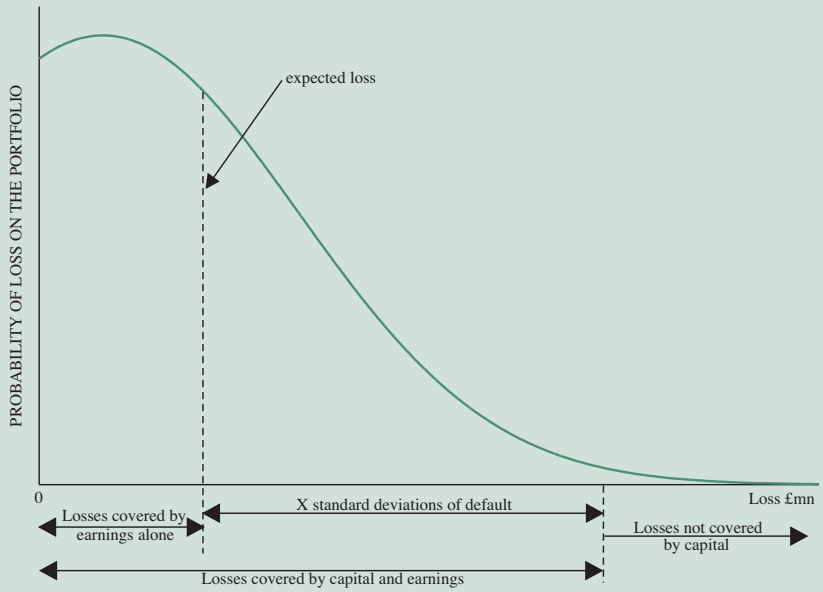
Second, some businesses are complementary to other products offered by a bank and may provide significant cross-selling opportunities in areas where higher profits can be made. Ideally, therefore, a bank needs to develop a system that can allocate income between its different businesses, so that a business line providing a flow to another area of the bank can be assessed on its overall contribution, rather than the return obtained on individual products.

Although a number of banks have strived to develop these systems in an attempt to calculate, for example, the returns made from individual banking relationships, few have succeeded in developing a comprehensive system.

Finally, banks are also subject to regulatory capital constraints, which may impose restrictions on the distribution of capital within a banking group.

Nevertheless, a number of banks are developing capital allocation and risk adjusted return models on the basis of their existing knowledge, the benefits of a partial answer being considered to outweigh the

Chart 1: Distribution of losses on a hypothetical loan portfolio



disadvantages. A number are also investing in further IT development to address the problems highlighted above.

Allocating reserves

A number of banks are considering extending the concept of expected loss further by making a separate and identifiable reserve to cover the loss predicted by their model. Proponents of identifying a reserve equal to the level of expected loss argue that, in terms of profitability, it presents a more accurate picture of the bank's performance, since it explicitly recognises that there are risks associated with some of the income earned.

Raising a specific reserve against a concept of expected loss has, however, sparked a debate within the accountancy profession as to whether this would represent a 'true and fair view'. Some have argued that it does not, because the losses by definition have not yet materialised. Others counter that creating a specific reserve is closer to the spirit of accrual accounting, whilst in the balance sheet it gets close to a net present value of loans rather than a book value.

Regardless of the final outcome of this debate, setting aside an explicit expected loss reserve could well be an option as far as internal management accounts are concerned or as a method of determining general provisions. In either case, banks would not receive tax relief, until the losses had actually materialised.

Possible drawbacks

One way in which credit risk models differ from market risk models, despite a shared ancestry, is that much of the necessary data will need to be constructed and may not cover a sufficiently long time series. Banks acquire a wealth of data on corporate loans in the course of their business, but it is likely to be deficient in some respects. These deficiencies typically fall into two categories: breadth and number of observations.

It remains vitally important that management fully understand the models

Breadth

Analysis of data can reveal key factors associated with a loan going into default at some period during its life. However some factors identified as good predictors of default may not be available in accessible form.

Redressing such problems can often involve much effort in manually correcting data so that there is a reasonable time series of key variables. If appropriate data are not available the bank must resign itself to an incomplete data set, whilst collecting such data for the future — or possibly buying them from elsewhere.

Number of observations

To be reliable, credit data should cover at least one full economic cycle, due to the high correlation of loan defaults with the cycle. In contrast, data used in market risk models cover a shorter time horizon and are usually of a much higher frequency.

Prudential issues

Credit risk models are helpful in evaluating and pricing counterparty risk and in the overall portfolio management of a bank's assets. There seems little doubt that they will be a key business tool in the future. They are, however, still very much in the development phase compared to their more sophisticated cousins, market risk models, whose methodology is increasingly accepted by banking supervisors.

Similar recognition for credit risk models is therefore likely to be some way off. In addition the following implications of a system of credit risk models also need to be considered:

- Context — internal models offer an opportunity to measure risk more precisely and accurately. However, it remains vitally important that management fully understand the models and have

in place mechanisms to check continually their validity and appropriate implementation.

In addition, supervisors should have in place systems and techniques to assess the process by which such models are constructed and the internal controls which support those models (eg record keeping, segregation of duties etc).

- Consistency — prescriptive capital requirements are very broad brush but, because they are based on an internationally agreed set of rules, they give market counterparties and other interested parties (eg rating agencies, investors, or depositors) a consistent benchmark against which to judge the adequacy of a bank's capital in relation to its peers.

  As credit models are to some extent driven by their assumptions and those assumptions may vary from bank to bank, it will be more difficult for the market to apply this consistency check.
- Accuracy and data quality — it is a truism to say that any model used for the purposes of managing a bank should be as accurate as possible. But indiscriminate and unthinking use of models could multiply slight errors across a whole portfolio of assets.

  Underpricing one kind of risk across the whole of a bank's business could have potentially disastrous consequences. As mentioned earlier, the quality and relevance of historical data also remains an issue. Again, there is an important role for management here in understanding the techniques, so that they can control those who work underneath them and minimise these risks.
- Impact on markets — deployment of these models raises a number of issues for the Bank, not least the implications of only a partial adoption of these models by the banking sector. There could, for example, be some incidence of adverse selection.

  It is conceivable that individual loans containing a high degree of idiosyncratic risk would not be accurately priced by a model based on average risks. A bank that relied exclusively on the model would under-estimate its expected loss and change the probability of higher unexpected loss outcomes.

  Equally, the model might be biased against certain transactions and so it would be reasonable to assume that those banks which did not have a model might pick up a disproportionate amount of this lending, which had been rejected by their model based competitors.

> Credit risk models can play a valuable role in helping a bank to systematise risks inherent in lending

Conclusions

Due to these and other difficulties, credit risk models have yet to win the degree of recognition and acceptance achieved by market risk models.

However, it is probably better to regard these drawbacks as limitations on the use to which credit risk models can be put at their present level of development.

Despite their limitations, credit risk models can play a valuable role in helping a bank to systematise the risks inherent in lending and to price those risks more accurately. From a business point of view, they should help banks to segment their customer base more effectively on the basis of risk as well as profitability.

Moreover, at an aggregate level, they allow a bank to assess its performance in a risk adjusted way and make management decisions with a greater understanding of the trade-off between risk and reward. As such, they are to be welcomed.■

REMUNERATION AND RISK

By Daniel Davies, Financial Structure, the Bank of England

Many employees in the financial sector receive a significant part of their income in the form of profit-related bonuses. They therefore have a personal stake in the outcome of the activities they carry out on behalf of their employer. If these employees have significant discretion, then a firm's overall risk profile may be influenced by its employees' attitudes to risk.

Every financial firm will or should have its own institutional policy on the appropriate balance between risk and return. In general, this will not match the preferences of all of its individual employees. Some will prefer more risk and more potential return, while others will be more risk averse than their employer. At the same time, employees and firms typically do not face the same trade-off between risk and return. Handling these differences is one of the major management challenges for financial firms.

There are two main ways in which the behaviour of employees can be influenced. This article focuses on the incentives created by the remuneration and compensation structures within a firm. Equally important, however, are direct management methods — for example, rules defining the discretion of employees to carry out particular actions. The two are clearly complementary. Effective controls on risk taking and measures to ensure the honesty of employees are essential, no matter how the bonus scheme is designed. But a remuneration scheme which gives perverse rewards to risk taking behaviour may put the control system under great stress.

This article draws on research undertaken in collaboration with Dr Margaret Bray (London School of Economics).The views are those of the author.

Remuneration schemes

The issue of risk taking and remuneration arises in many different kinds of activity. For the sake of discussion, this article focuses on a specific common case; that of a securities trader or similar employee who is paid a large, variable bonus dependent on some measure of value generation. These employees tend to have significant discretion in the risks they take with a firm's capital and monitoring these employees is typically difficult.

Money is, of course, not the only form of reward. But for simplicity it is convenient to assume that it is, and that all that matters is the expected value of an employee's compensation package and its variability. Under this assumption, Charts 1 to 3 opposite show how agents' preferences in relation to risk and return help determine the actions they take.

The three charts show how different combinations of risk preferences and reward schedules can be used by a firm which has decided upon its risk appetite. Chart 1 shows the firm's trade-off between expected return and volatility of return, and shows how the securities market line (the rate at which risk is rewarded in the market) meets the firm's indifference curve (the curve along which the firm is prepared to trade off risk and return) at the preferred volatility V. The other two

charts show employees' trade-offs between expected compensation and volatility of compensation. Chart 2 shows how an employee whose indifference curve is flatter than the firm's (indicating that the employee is prepared to accept more risk for the same expected return) can be made to choose a level of risk corresponding to the firm's preferred level by giving him a reward schedule which gives poorer rewards to risks taken. Chart 3 shows the opposite case — a risk averse employee who is motivated to take risks by being rewarded more generously.

Risk preferences

The rate at which an employee is prepared to trade off risk against return is not necessarily an intrinsic characteristic of that employee. It can be influenced by a number of factors, many of which are under the control of a firm's management.

These factors can be grouped into two broad categories — the 'psychological' and the 'managerial'.

Amongst the psychological are such intangible influences as the goodwill of employees toward their company and the 'culture' of the firm. If these are strong, it will be easier to adjust individual preferences so that they are more compatible with the firm's. There can also be unfavourable psychological factors; the desire to be a 'star' or to conceal a poor judgement can lead agents to take excessive risks.

Chart 1: firm's risk appetite

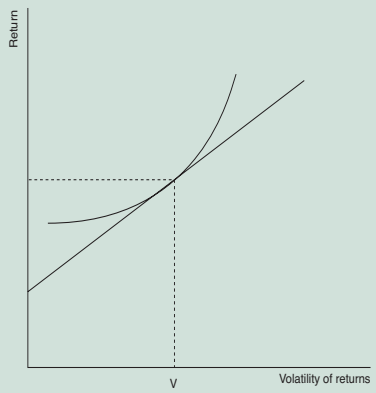


Chart 2: risk tolerant employee

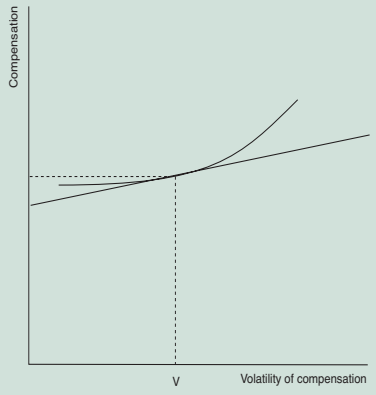


Chart 3: risk averse employee

Managerial factors relate to the way firms directly monitor and control their employees' activity. Examples are the daily marking to market of positions and position limits. If a firm has effective monitoring systems, and if it has a strong compliance policy which is rigorously enforced, then individuals will be less likely to regard an incremental trading risk (which might secure them a larger bonus, but might also get them sacked) as worth taking.

Rewarding risk

One insight into the way in which risk is rewarded is that only part of a compensation package is likely to affect risk taking behaviour — broadly, the part which is connected with the actions it is intended to influence. Thus a commission on trading profits will affect risk taking behaviour because its value almost entirely depends on the risks taken with the firm's capital.

Certain other common features of compensation systems may not feature in an employee's risk incentives. Guaranteed bonuses, for example, or bonuses which relate to a managerial assessment of potential, are not connected to the outcomes of risky actions and so should not affect risk taking. The absolute level of compensation should not have any incentive effects.

There are caveats. First, it is often the case that seemingly non-profit-related bonuses are in fact linked to profits. 'Guaranteed' bonuses may be linked to a profit target,

or a managerial opinion may in fact be based on revenue generation.

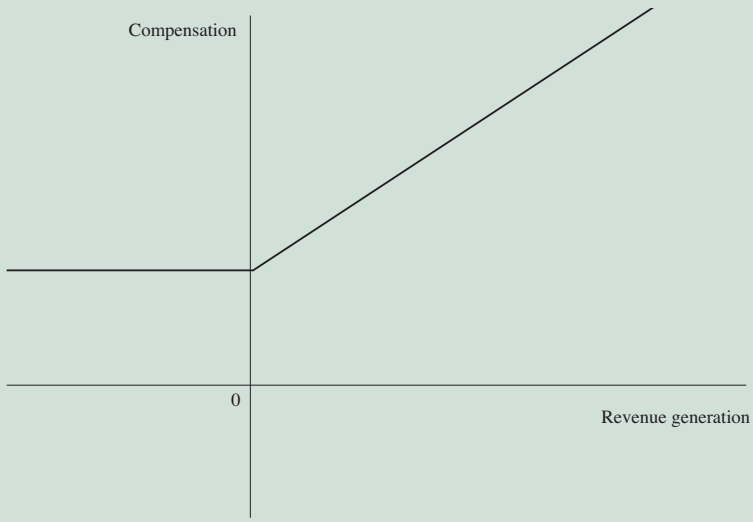
Second, there is the influence of psychological factors. Remuneration has a social role as well as an economic one; the highest bonuses usually go to 'stars', who may feel compelled to justify their status by taking greater risks in the hope of making higher and higher profits.

Limited liability

The simplified analysis of Charts 1 to 3 shows how employees' attitudes to risk are influenced by the rate at which it is rewarded. However, that analysis makes a simplifying assumption with an important effect on the conclusions, namely that the risks to employees' compensation are directly comparable with the risks faced by the firm. However, over the typical range of trading risks this is not the case. Employees' contracts almost always involve limited liability; they may share profits from favourable trading outcomes, but it is difficult or impossible to make them compensate their employer for losses.

... it is difficult to make employees compensate their employer for losses

Chart 4: Limited liability and the 'option-like' bonus structure



The compensation structure illustrated in Chart 4 therefore has option-like characteristics — specifically those of a call option written on a trader's revenue generation. One property of a call option is that the parameter (vega) which relates its value to the volatility of the underlying asset is always positive. This means that the fair value of the compensation package is greater when the trader's revenue generation is volatile. If the value of a financial compensation package was all a trader cared about, the incentive would be to increase the revenue volatility as much as possible — ie he would take bigger risks.

In practice, compensation in one year is unlikely to be all that an employee cares about. But the problem of limited liability is always in the background. For example, if an employee knows that there is a seller's market for his own form of specialised labour, the cost of dismissal may seem to be lower (unless circumstances involve some significant reputational damage). Such an employee may be tempted to gamble on the prospect of a big bonus at one firm, with the prospect of employment at another if things go wrong. Creditors of limited companies have the Companies Act to protect them but financial institutions need to protect themselves from the limited liability of their employees.

There are features of compensation schemes which can mitigate the effects of limited liability. Some firms place a cap on the total compensation which they are prepa-

red to pay to any one individual. This can be a powerful weapon against perverse incentives. Such policies can be difficult to maintain, however, particularly when staff can extract the difference between their perceived worth and the salary cap by moving to another firm.

Another approach is the 'deferred bonus', under which bonuses are allocated for a trading period but not paid until some time later. In principle, this gives firms the opportunity to pay negative bonuses by removing money from the deferred bonus if performance deteriorates. This would give the employee's compensation a moving average link to a number of years' performance and mitigate the limited liability problem. Perhaps understandably, this approach has not proven popular with employees. Its main use currently appears to be as a kind of 'golden handcuff' to prevent employees from moving from firm to firm so easily.

Discontinuities

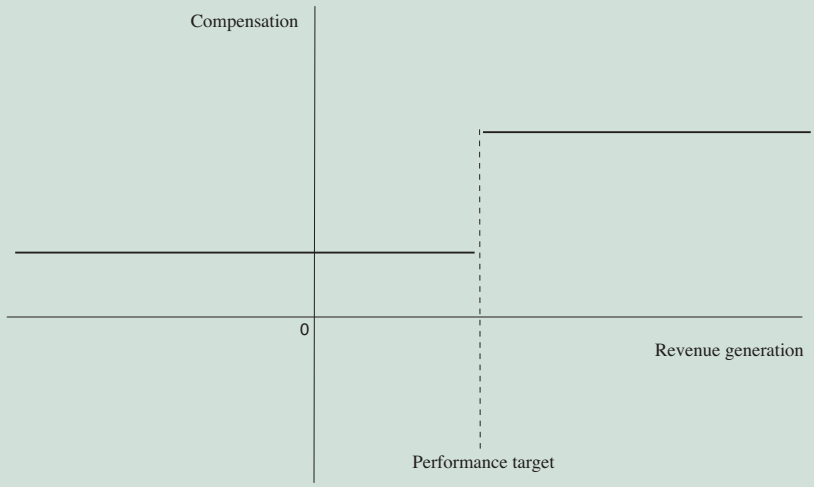
In some cases, an employee will be faced with a situation in which a small change in value generation will result in a very large change in compensation, for example where the award of a large lump-sum bonus is conditional on the achievement of a profit target. An employee with such a compensation package would face a remuneration schedule like the one in Chart 5.

This is more akin to a binary option, a security which is often very difficult to price. Its sensitivity to the volatility of the underlying asset can be positive or negative, depending on whether it is in or out of the money. Again on the assumption that all that matters is financial compensation, an employee's incentives will reverse whenever accrued revenues move above or below the target.

Immediately below the target, the employee's main concern will be to earn a bonus. There will be a greater propensity to take risks, as the possible benefits outweigh the downside. Immediately above the target, the employee will be more concerned to keep the bonus which has been earned and which will not increase, so he will tend to avoid risk. This means that for traders who are near the borderline it will be difficult to be sure on any given day whether the problem of management is to spur them on or to rein them in. This uncertainty complicates the monitoring effort.

A culture in which it is ... acceptable for traders to lose money once in a while may mitigate pressures to take excessive risk

Chart 5: "All or nothing" bonus structure gives discontinuous incentives



This problem can be alleviated by introducing some ambiguity into the payment of bonuses. If an employee who has only just missed a target may nevertheless get a bonus, and if an employee who has only just made a target may not get one, then the shift in incentives will be less sharp. Furthermore, if employees understand that factors other than revenue generation will be used to determine compensation, employees who are at the borderline will be easier to manage. Linking rewards to a good compliance record may be one possible approach.

Dismissal policy

One case in which a number of perverse incentive effects can come together is when an employee's record is such that he fears he may be dismissed. In this case, there is a limited liability effect, because, except in the case of dishonest or criminal behaviour, dismissal is the worst sanction an employer can inflict.

There are also discontinuity effects, as a large success will move the employee out of the dismissal zone. An employee in this situation may have little to lose and everything to gain by taking large gambles with the firm's capital. It is possible that psychological factors may make the employee reluctant to accept failure.

This is a difficult problem for management. Clearly, a firm cannot go on employing loss-making employees forever. But a culture in which it is regarded as acceptable to lose money once in a while (something which is almost inevitable if markets are efficient) may mitigate pressures to take excessive risks. Once employees are identified as underperformers, more effort can be expended to monitor their risk taking and restrict the amount of capital they can put at risk.

Psychological factors can make employees reluctant to accept failure

Measuring performance

All the remuneration schemes discussed so far have involved the simplest possible measure of value generation — essentially gross trading revenues. While the limited liability and discontinuity effects discussed do not depend on the precise measure, their impact can be modified by the use of more sophisticated performance measures which allow the risks taken to enter directly into the assessment of a trader's performance.

There are a number of ways in which this adjustment to trading revenues can be made. The two most common seem to be to use the standard deviation of trading returns as a proxy for risks taken, and to impute a charge for usage of the firm's capital in supporting risky positions and subtract that charge from trading revenue. The main benefit of using either adjustment is that it ensures that risk is brought into the equation. However, implementation of advanced performance measurement methods does require a firm to have sophisticated management information systems.

Remuneration policy

Apart from its direct effects, remuneration policy also has a broader role as a management tool. The amount someone is paid provides powerful signals to other employees about what is regarded as desirable behaviour. If large bonuses are paid to employees who make money but are perceived to have a cavalier approach to compliance, it is likely to encourage similar behaviour in others. This may particularly be an issue for firms which try too hard to retain their most profitable employees.

Remuneration policy has an important part to play in a firm's overall management of risk. It can contribute to, or make more difficult, the reconciliation of the firm's own risk/return trade-off with those of its employees. As such it is of increasing interest and concern to supervisors and regulators.■

OPERATIONAL RISK MANAGEMENT: WHERE TO START?

By Jeff Thompson and Chris Frost, Price Waterhouse

Management of operational risk is still in its infancy compared with the traditional credit and market risks familiar to banks and securities firms. But trends such as outsourcing and the growing complexity of payment and settlement systems are highlighting its importance. What are the main features of operational risk, and where should firms start in seeking to control it?

There is currently considerable discussion within the market about whether, and if so how, capital should be allocated to cover operational risk. Eventually, there seems little doubt that this will become a critical competitive and control issue and that the regulators, operating alone or in concert, will expect financial institutions to enhance their capital allocation models to include operational risk considerations.

But given the infancy of formal operational risk management functions, all but a few of the more advanced capital market participants face a more fundamental question: where to start in establishing an integrated operational risk management function that is responsive to business and management needs, without crea-ting an unacceptable overhead cost?

This article addresses the issues associated with establishing the function, rather than debating the various possible approaches to the calculation of capital.

Definitions

The first step is to find a practical definition of operational risk. There are as many definitions as there have been articles written about the subject. But in principle, one can view the risk faced by a typical financial firm as having three interrelated components:

- Strategic risks, which are associated with the way the institution is managed (eg competitor strategy, new product development).
- Financial risks, which cover credit and market exposures and liquidity.
- Operational risks, which cover the other aspects of day-to-day business processing.

It can be argued that the other risks associated with financial institutions, eg reputational risk, are consequences that arise from a failure in strategy, financial control or operational processes. From a practical perspective, if an institution starts from the above assumption, it can always extend its definitions further once the initial operational risk management framework is in place.

The Basle Supervisors' Committee has defined operational risk as "the risk that deficiencies in information systems or internal controls will result in unexpected loss. The risk is associated with human error, system failures and inadequate procedures and controls."

Taking this definition as a starting-point, operational risk has two key components: operational integrity, which addresses the

adequacy of operational controls, and service delivery, which refers to a firm's ability to perform business processes on an ongoing basis.

Most institutions start from a definition similar to that outlined above and then move on to consider threat probabilities and historical losses. Neither of these can usually be known with any degree of accuracy at this stage, owing to the general lack of available information.

Some institutions are actively engaged in trying to collect relevant information or identifying comparable information from other industries with similar business processes. But trying to ascertain probability or related loss information as a first step can delay the benefits that proactive management of operational risks is intended to achieve.

A more effective initial way of approaching operational risk is to look at the consequences to the institution arising from operational failure in respect of specific products. The consequences can be grouped under different headings, but the following categories are useful:

- Direct financial losses arising from failing to meet an obligation, for example penalty interest payments or restitution costs.
- Direct financial losses attributable to an absence of income, either from transaction fees, direct fees or commissions.
- Statutory or regulatory penalties ranging from censure to revocation of licences.
- Opportunity costs arising from adverse publicity or being unable to trade.

By asking what incidents, or collection of incidents, are likely to generate these consequences, regardless of historical experience, it is possible for an institution to focus its attention more accurately on those operational activities which are likely to create the greatest problems.

Historical information concerning the probability of threats occurring and the extent of losses can be taken into account later, but for a first analysis they can be set to one side, if only because the nature of firms' operations and product mix are substantially more complex than they used to be and historical information may be misleading.

If it is necessary to develop an initial view on likely losses, the simplest method is probably to analyse the volatility of earnings. A number of institutions adopt this approach. Once the effects of strategic and financial risk components have been excluded from the calculation, what is left over must represent the impact of operational risk.

Recent high profile cases, such as Barings, Daiwa, Sumitomo and Deutsche Morgan Grenfell, have served to highlight the importance of operational risk

Why has concern grown?

It is important to consider briefly the reasons for the growth in concern and publicity regarding operational risk. Recent high profile cases, such as Barings, Daiwa, Sumitomo and Deutsche Morgan Grenfell — a veritable who's who of major institutions — have served

OPERATIONAL RISK IN PAYMENTS AND SETTLEMENTS SYSTEMS

Each provider of a centralised service, be it a payments, clearing or settlement system, has to consider the operational risks associated with the participants of its service. The basic risk is that the participant will be unable to meet its obligations, either due to a statutory/regulatory issue (eg liquidation) or due to an operational failure. This may have implications for the level of capital required by the service provider if it is undertaking to guarantee the completion of a transaction. Effectively, there have been three basic methods used by service providers to address the risk of operational failure by a participant:

- **Formal participation criteria**. These criteria are intended to set a minimum standard of operational integrity and resilience which the participant's systems (both manual and computerised) must be demonstrated to meet.
- **Collateralisation of losses**. The participant must establish suitable collateral to cover the exposed positions, either by the use of variation margins or by guarantees from third parties (eg CREST settlement banks).
- **Loss-sharing arrangements**. The central service establishes a binding agreement for sharing the loss amongst participants, typically in some type of fixed proportion (eg credit card clearers).

Whilst shortening the settlement cycle and establishing legally enforceable netting arrangements are additional risk management measures, they have not yet achieved a sufficiently widespread basis. In addition to these controls, each service provider will have certain minimum integrity controls, or contractual arrangements, covering authenticity of accepted messages and non-repudiation.

Notwithstanding all of the above, participants should increasingly be ready to 'guarantee' their own operations, as the service providers gain an increasing appreciation of the extent of systemic risk exposure that they face from participants and become more aggressive in seeking to offset this risk.

to highlight the importance of the subject.

In each case, not only was there an explicit failure in basic operational controls or processes, but the consequences included substantial financial loss and increased regulatory scrutiny. Having this number of substantial incidents arise in less than two years has focused the thinking of both management and regulatory agencies.

Aside from the media and regulatory focus, there are at least three reasons why management is paying increased attention to operational risk:

- Increased institutional sophistication in relation to insurance is leading many institutions to the decision to self-insure, which requires that they understand the nature of the risks they face and their consequences.
- The trend towards outsourcing of services requires that operational risks be understood, since they affect contractual negotiations, penalties and service pricing.
- Central providers of payment, clearing and settlement services are toughening their operational participation criteria in recognition of systemic risk and the dependencies which exist within the markets (see box above).

What are the causes?

The recent growth of operational risk exposures can be attributed to a number of causes, including:

- The use of new technology (such as straight-through payments processing, whereby the payment is diarised, made and reconciled automatically), especially when coupled with the downsizing of clerical support groups. Traditionally these allowed problems to be identified and corrected at an early stage.
- Massively increasing volumes, arising not just from market activity, but also from the centralisation of back office functions. This can present special problems when coupled with geographical distances, such that the available business window for resolving problems (due to time zone distance) becomes restrictive.
- The introduction of new delivery channels which are designed to be cost effective, not necessarily control effective.

- The general growth of the market and the competitiveness of salaries for experienced staff, which results in an increased use of temporary staff, often where there is limited process or control documentation.

The recent wave of mergers and acquisitions also means that working practices, systems and corporate cultures which were never designed to work together may have to be integrated very quickly so that headcount reduction targets can be met.

From the above list, it is possible to identify three key, inter-related causes of increased operational risk:

- Reduced levels of experienced management supervision.
- Increasing volumes, which risk swamping the operational processes.
- Changes to overall business relationships, with increasing cross-organisational dependencies and the attempt to integrate working practices, systems and cultures which were never designed to work together.

Each of these root causes can be addressed, but only by looking at operational processes across the business (ie on an 'end-to-end' basis), crossing typical authority lines.

It is not possible to analyse the causes of operational risk within an institution without considering aspects of the environment that can influence operational risk (see box below). In particular, corporate culture must be considered, not necessarily because it increases operational risk but because certain cultures can encourage the overriding or dismissal of operational controls. Situations where over-trading is occurring need to be viewed as part of an underlying cultural problem as they tend to exhibit a number of the root causes (eg excessive volumes coupled with reduced supervision).

ENVIRONMENTAL ISSUES AFFECTING OPERATIONAL RISK

In establishing an operational risk management function, the following aspects of the working environment should be considered. Each can dramatically affect both the effectiveness of the risk management process and the extent of formality which should be introduced.

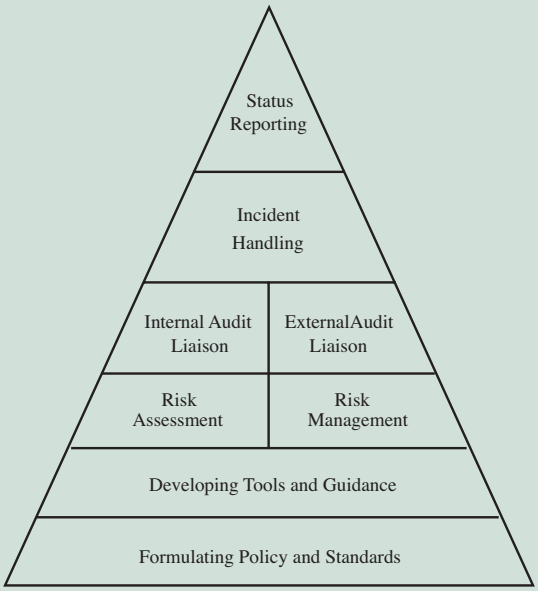
- **Corporate culture**. This factor may be the single most important criterion in establishing the effectiveness of the operational risk management function, as it will define the attitude staff and management have towards managing risk. For example, a culture that positively rewards aggressive risk taking and 'punishes' or ignores bad news will discourage upward reporting of problems. Weaknesses in corporate culture may be obvious or may be more subtle and derived from the focus on short term profits to appease the business analysts.
- **Outsourced services**. In the current marketplace for outsourcing and distributed services, it is easy to become dependent on third parties outside the normal span of control. Whilst the most common method for controlling outsourcers is via service level agreements, the penalty clauses in service level agreements may be ineffective for two main reasons. First, the service provider may be within the group companies and therefore any penalty merely transfers cost amongst the group companies. Secondly, the clause may be hard to enforce because of the outsourcer's size, be it too large or too small.
- **Extent of statutory/regulatory supervision**. While there has long been a history of oversight affecting financial and legal risks, the application of a formal structure to operational risk is in its infancy. However, operational risks are coming under increasing scrutiny by regulators, especially in the light of recent problems. Care needs to be taken that operational risk frameworks are not being established simply to meet a perceived statutory or regulatory requirement, rather than to meet an acknowledged business need.
- **Extent of risk management**. Given more mature methods of allocating capital to cover credit and market risks, there is an increasing desire to extend the capital allocation process to cover operational risk as well. Whilst a number of institutions have developed their own allocation models, the allocation of capital for operational risks is far from a science. However, the absence of a formal model should not be confused with the absence of a need to have basic risk management discipline or allocated ownership for risk management activities.

Having identified some of the root causes of increased operational risk, the next step is to consider possible obstacles to establishing an effective operational risk management function. In our experience, the obstacles are four fold:

- Inadequate authority to 'look across' the organisational boundaries and authority lines and view the operational risks on an end-to-end basis. For example, the 'chinese wall' between front and back office, whilst necessary from a control standpoint, may hinder effective operational risk management.
  This not only affects a traditional capital markets operation, but increasingly exists where retail branch activities (which previously may have dealt with a product on an end-to-end basis) are being centralised around differing delivery channels.
- Political 'turf battles' between the various organisational units over the role of the operational risk management function.
- A preoccupation with too much detail in performing risk assessments, which results in them not being focused on the prevention of undesired consequences.
- Inadequate management reporting, particularly stemming from a lack of agreement on common definitions (eg incident impact) and reporting thresholds.

In addition, there is a lack of any generally accepted standards for working practices or tools which can be consistently applied across various institutions and the individual organisational units within any given institution.

Operational risk functional 'pyramid'



Practical management

Assuming an institution understands the root causes and consequences of operational risk, and wishes to do something about it, what practical steps can it take? The first step is to recognise that no-one starts from a zero base. Most institutions have been managing operational risk effectively for years, or they would not be in business today. However, this is not a reason for complacency. The nature and complexity of operational processes is very dynamic, whilst the increasing desire to reduce costs can impair the effectiveness of operational controls if care is not taken. The intention should be to build on the base that already exists and to avoid creating a substantial additional bureaucracy.

Risk management function

The next step is to establish an operational risk management function, similar to those already established for credit and market risk. The establishment of this function should not, however, be used as an excuse for management to abdicate their direct responsibility for understanding and managing operational risks.

This function provides a mechanism for crossing authority lines (effectively obtaining an end-to-end view of the business) and performs a number of roles, as indicated in the operational risk functional 'pyramid' (see diagram left), namely:

- *Establishment of specific policies and standards*. There must be a clear and consistent basis for the development of detailed

During the risk assessment, a set of key risk indicators ... needs to be established

operational risk practices institution-wide, to which various organisational units within the institution can be made accountable. As such, they need to be approved by the Directors, having been developed or ratified by an Operations Committee.

- *Identification of relevant support tools and guidance*. One of the biggest logistical impediments to achieving efficient operational risk management practices is the lack of any common assessment or reporting tools.
  Whilst the uniqueness of each operational unit needs to be appreciated, it is usually possible to develop a consistent framework of working practices and reporting requirements which can be overlaid onto operational processes.
- *Initial structured risk assessment*. Aside from establishing the basic infrastructure, it often becomes the responsibility of the function to conduct the initial risk assessment.
  Whilst it is preferable for this responsibility to be directly assumed by line management, practicalities and politics may dictate otherwise.
  Whoever does the initial risk assessment, there is a basic set of integrity and delivery risks which needs to be addressed (see box below). During the risk assessment, a set of key risk indicators tailored to reflect the actual integrity and delivery risks faced

COMMON OPERATIONAL RISKS

Operational integrity risks

- Inadequate reconciliations, particularly across systems.
- No clear definition of how authority is delegated.
- Inadequate follow-up of audit issues.
- Inadequate segregation of duties.
- Lack of documentation of controls, especially when linked with inexperienced staff.
- Extensive use of spreadsheets.
- Significant use of temporary staff, especially in management positions.
- Inadequate or inexperienced supervision.

Operational delivery risks

- Inadequate scope of change management or new product processes.
- Informal process for managing third-party dependencies.
- Lack of integrated business contingency plans.
- Inadequate succession plans for key individuals.
- Incompatible systems sharing information via manual interfaces.
- Reductions in clerical staff, resulting in loss of flexibility to respond to problems.
- Lack of clear reporting, and escalation, process for problems and incidents.
- Matrix management which avoids direct assignment of responsibility for risk management.

needs to be established. Again, these have to be driven by the consequences which the institution seeks to avoid.

- *Co-ordination of risk management activities*. One of the most practical roles that the operational risk management function can perform is the co-ordination of risk management activities amongst the various organisational units, in order to eliminate duplication and to disseminate best practice information.
- *Liaison with Internal Audit*. This does not replace management accountability for addressing audit findings, but gives management a means and the chance to consolidate and understanding audit issues on an organisation-wide basis, as well as the means to monitor centrally the progress in resolving issues that have arisen.
- *Liaison with External Audit*. This performs the same function as liaison with Internal Audit. However, it should be noted that, for liaison with either set of auditors to be effective, there has to be an agreed set of definitions (eg a risk 'dictionary') which classifies the type of risks being monitored and provides a consistent assessment process.
- *Incident handling and monitoring*. There are two key issues associated with incident handling.

  The first is the need to get all parts of the organisation to agree to view incidents in terms of their potential consequences (as defined previously), rather than in purely financial terms.

  The second, which applies mainly to direct financial consequences, is to get all parties to agree to a common definition of incidents, and then to report them on a consolidated basis reporting in such a way as to provide information which is directly comparable.
- *Status reporting to Executive Management and Directors*. The first step in establishing credible reporting is to ensure that consistent, comprehensive incident reporting is available, particularly of non-financial consequences.

  Once that is available, summary reports covering the key risk indicators need to be prepared. For example, if a key risk indicator is nostro reconciliation backlogs, the reporting should include an aged analysis of the backlog.

The above list of roles is a very high level overview of the activities that the function should perform. In our experience, the main benefit to the institution arises from having an integrated, consistent focus on assessing, addressing and monitoring operational risk exposures. The function should have a direct reporting line into the level of management that possesses the authority to enhance operational integrity and delivery controls.

Risk classification

The reporting structure is critical as risk information must be filtered to the appropriate layers of manage-

The reporting structure is critical as risk information must be filtered to the appropriate layers of management

ment, such that each layer has sufficient data to evaluate and address the exposures, but is not swamped with ineffective information. For example, a typical risk classification might take the following form:

- Catastrophic risks are identified, with contingency plans passed for Director approval due, typically, to the outlay required to establish the contingency or the potential financial loss which is being accepted. These may or may not be insurable depending, in large part, on the difficulty of identifying consequential loss impact.
  The preparation of contingency plans for this type of risk typically follows the traditional, large disaster framework, with the establishment of crisis management teams and a recovery framework, based on sample catastrophic scenarios.
- Unacceptable risks are identified and monitored aggressively, with action taken by the equiv-

OPERATIONAL RISK AND BANKING SUPERVISION

Charlotte Gerken and Diane Hilleard, of the Bank's Supervision and Surveillance Division, explain how the banking supervisors assess and monitor operational risk.

The management of operational risk in banking is as important a challenge to institutions as managing credit and market risks. Identifying and quantifying operational risks may not have been given the 'scientific' approach applied by banks and regulators to credit and market exposures. However, the Bank considers an institution's exposure to operational risks and the way it manages them when assessing its risk profile, ultimately culminating in the supervisory programme set for the bank and its capital ratio.

Jeff Thompson looks at reasons why banks' management are paying greater attention to operational risks and why the Bank has also been focusing on these developments. In particular, the Bank is concerned that risks should be managed in an integrated manner: an end-to-end view of processes — the dependencies within them and their impact on third parties — is critical. Most processes contain inter-dependencies, and the failure of any one link in the chain may have an adverse impact on the bank's overall soundness.

The Bank's approach to operational risk management arises from the criteria for authorisation set out in the Banking Act 1987. These require banks to maintain adequate systems, controls and records to enable them to conduct their business in a prudent manner. The Statement of Principles and the Bank's guidance notice on reports provided under Section 39 of the Act (S&S/1996/6) give further information on the Bank's requirements in relation to records and systems.

The Bank deploys a range of supervisory tools to review operational risk and its management. High level control reviews conducted by reporting accountants, or by the Bank's own on-site review team visits, examine the adequacy of high level arrangements for the recognition, control and reporting of operational risks. More detailed Section 39 reviews and on-site visits focus on the detailed management and control of operational risk in particular business areas. Recent Section 39s have, for example, covered payments systems, segregation of duties, change management and disaster recovery.

Day-to-day contact with institutions, and regular meetings with senior management, internal audit and compliance functions enable supervisors to build a picture of how operational risks are addressed and managed. The provision of information such as organisation charts, management information, procedures and controls manuals can also be helpful in this respect.

Our approach continues to evolve and the work being done to develop a formal risk assessment model will contribute to the review of this important and complex area.

alent of divisional or product management, as their impact may lead to one of the four consequences noted previously. These risks typically cover aspects of operations such as introduction of new systems, substantial use of temporary personnel during periods of increased volumes etc.

- Residual risks are those which are charged to line management to address as they typically do not lead, in isolation, directly to one of the four consequences (although they may do so in aggregate). Instead, they tend to affect adversely operational effectiveness and revenues.

The operational risk management function will typically agree the reporting categories and process with representatives of both management and Internal Audit. In addition, external auditors will also want to understand, and possibly comment on, the risk profile template being created.

In order for the function described above to be effective, it must exist with sufficient authority to obtain information from all aspects of the business, although direct accountability for managing operational risk remains with the various layers of management.

Conclusions

The first steps presented in this paper are designed to demonstrate that an institution can apply common sense to the practical management of operational risk. There is a clear focus on the goal to be achieved and an appreciation that operational processes, and hence operational risks, are dynamic in today's markets.

In particular, dependence on external service providers, and obligations arising from participation in payment, clearing and settlement systems will increasingly dictate the extent to which operational risks need to be proactively addressed by management.

Once the initial goals have been achieved, it will be necessary to consider both threat probability and the scale of potential loss, possibly as a basis for allocating capital.

Until regulators reach a consensus on the setting of explicit capital requirements for operational risk, the extent to which institutions choose to hold capital against it will be determined in part by commercial considerations. Whilst there is an attraction to using a relatively straightforward approach to allocating capital, such as taking a percentage of fixed costs and non-interest expenses, in the belief that historical relationships will continue, this ignores the dynamics of change. But, for many institutions, this provides the easiest starting point.

However, the benefits of simply formalising the approach to operational risk management, in order to reduce operational exposures, should not be underestimated and should be the initial focus of activity.■

The benefits of simply formalising the approach to operational risk management should not be underestimated and should be the initial focus of activity

FRAUD: A PERSONAL VIEW

By Ian Watt, the Bank of England

Ian Watt joined the Bank from KPMG in 1992 to set up a Special Investigations Unit to help supervisors and others to investigate cases of suspected fraud. He was an adviser to the Bingham Inquiry into BCCI, and last year led the team which investigated the Barings collapse on behalf of the Board of Banking Supervision. Mr Watt is retiring from the Bank in March. Here he gives a personal view on the nature of financial fraud and the challenges involved in controlling it.

Ian Watt set up the Bank's Special Investigations Unit

Fraud is hardly a new phenomenon. As far back as (allegedly) AD 8, Phaedrus was constrained to write *"Whoever has even once become notorious by base fraud, even if he speaks the truth, gains no belief*". History recounts many earlier examples — on a national scale, coin clipping was a common crime for generations. Nor are corporate frauds a new feature, with a constant theme running from the South Sea Bubble scandal at the beginning of the 18th Century through to the present day. Methods change, circumstances change and opportunities change, so much so that it is impossible to judge how the present incidence of fraud compares with earlier experience. It is nonetheless undeniable that there remains a lot of it about!

What exactly is fraud? In fact there is no comprehensive legal definition. The Oxford English Dictionary defines it as 'the quality of being deceitful', then adding *"now rare"* which we must assume qualifies the definition rather than the subject. However, the Dictionary then provides a further rendering: "criminal deception, the using of false representations to obtain an unjust advantage or to injure the rights or interests of another". That is probably as close as one is likely to get, although I don't think that the lack of a formal definition need worry us unduly, as a narrow statutory definition on any topic normally provides a field-day for those seeking to circumscribe it — including the professional advisers! Fraud is ever changing, ever shifting and can quickly circumvent legally imposed boundaries. Unchecked, it can destroy commercial and investor confidence, undermine businesses and financial institutions, and of course ultimately destroy the fabric of society.

Since I joined the Bank in November 1992 to set up the Special Investigations Unit (SIU), which consists of a team of investigators and forensic accountants to assist supervisors, we have looked at some 300 cases. The recurring themes that we have encountered fall within one or more of the following categories:

- Failure of basic controls.
- Weakness of internal audit.
- Manipulation of documentation.
- Lack of understanding by management of the way the business operates.
- Acceptance of false explanations by others.
- Failure to 'know your customer'.

These categories could equally apply to all types of financial institution and to most of industry. They

can be inter-connected and require little by way of further explanation.

From experience, fraud tends to fall into two broad categories:

- 'Insider fraud' — fraud perpetrated on an organisation from within, either by an employee or, worst of all, by the actions of its own management.
- 'Outsider fraud' — inflicted on an organisation or individual by an outside party.

Sometimes these two categories will overlap, such as when there is collusion between an employee and an outsider. Additionally, an organisation may be used, unbeknown to itself, to facilitate fraud by others. For example, a criminal may operate a bank account through which he passes the fruits of his crime.

Insider fraud

When considering insider fraud there are generally two distinct categories of people involved — employees and management.

Employee fraud

Uncontrolled, the range of fraud available to employees, at the expense of their employers, is virtually limitless. Procurement fraud and unauthorised payments for goods and services not supplied, or supplied personally to the employee, are but two examples of the opportunities available. Dealers and traders in the investment market, if not properly controlled, have scope for unauthorised trading, front running and other self-seeking operations. Sometimes the motivation will be as much to demonstrate a false level of successful achievement as it is to achieve instant wealth. Employees may go for the big 'putsch'; equally fraud may start on a small scale and then build up into something far larger, either because the employee gets carried away with his own success or because he finds he needs to compound the fraud in order to hide his original deceit.

There are plenty of examples over the years of an employee boosting performance by the 'creation' of fictitious transactions, probably intended as a one-off, but then having to continue the process on an increasing scale, so as to cover up the original act of deception. Thomas Paine expressed it well, if unintentionally, in his 'Age of Reason', 1793; *"It is with a pious fraud as with a bad action; it begets a calamitous necessity of going on"*.

> ...every action should require the scrutiny and approval of at least one other official

The difficulty of detection is increased where an employee conspires with an outside party to defraud the employer, for example by sharing in excess payment for services supplied — ie the procurement fraud. If the employer's systems of internal controls are effective, they should detect such events. Collusion *within* an organisation is a different matter, because it can override the fundamental principle of any internal control system — that every action should require the scrutiny and approval of at least one other official.

Management fraud

The particular viciousness of management fraud is that someone in a position of power and influence within an organisation is able to abuse that power to override any internal controls, so as to commit and conceal his fraud. This type of fraud can have the most damaging consequences of all.

However, it will be difficult for one person, no matter how senior, to accomplish any significant fraud without others in the organisation becoming aware or at least suspicious. Often it involves a dominant personality at the top, and although active collaboration by others within the organisation is not necessarily an essential feature, passive and discreet acceptance by colleagues is normally present.

Any review of management fraud inevitably brings to mind the

Often fraud involves a dominant personality at the top ... passive and discreet acceptance by colleagues is normally present

case of BCCI. There the influence of the President, Abedi, was all-powerful and all-pervasive. But many other senior officials actively participated in the cover-up; indeed the fraud could not have been perpetrated had they not done so. A strong cultural allegiance of loyalty and obedience seems to have been an important feature.

Interestingly, the same feature of loyalty to management also emerges from the Barings affair, where local Singapore staff unquestioningly carried out the accounting instructions which helped Nick Leeson to conceal his unauthorised trading.

The 'circular transaction' is a favourite method of fraud, which was used by BCCI and is popular with management fraudsters. Funds are passed to another organisation for a falsely stated purpose, such as lending or investment,and are then moved through a number of associated entities, perhaps returning in whole or in part to the original company. By this means, the fraudster gets unfettered control over the funds involved, whether for private use, anonymous investment or fictitious bolstering of his own capital. A high degree of conspiracy is needed, but if achieved, these circular transactions can be particularly difficult to detect.

Outsider fraud

Whilst outsider frauds, in monetary terms, are often smaller than insider frauds, they can still be distressing and costly to the victim — especially if they involve individual investors losing money. A victim of this type of fraud will often be induced to part with his money in advance against the expectation of benefits to come, whether in the form of goods or services or investment benefits, which then fail to materialise.

Any type of business which normally enjoys a positive cashflow has always been an attractive base for the fraudster. A notable example in the 1980s involved the fraud committed on the investors in Barlow Clowes. Individuals were persuaded to deposit their savings with the company for onward investment in gilts. They believed they had an interest in secure low risk assets — providing them with regular income, at no risk to their capital. In reality funds were invested in private homes and luxury yachts.

The whole episode highlighted the need for investors, regulators and professional advisers to be aware. Investors cannot expect to out-perform the market whilst avoiding risk, regulators need to understand the business they are regulating, and professional advisers (such as lawyers and accountants) need to have healthy scepticism when accepting assertions whilst carrying out their work. Barlow Clowes was a clear case of fraud, and a successful criminal prosecution followed.

On other occasions the situation will not be so clear. For example, prosecutions of fraudulent

trading — where creditors have been put at risk — are rare, which highlights the thin line between management optimism and dishonesty.

In the financial sector we are now experiencing a plethora of 'advance fee frauds' in which fraudsters are once again demonstrating their ingenuity. Targeted victims are enticed by the promise of remarkable returns on dubious investments, often 'backed' by forged documents and crudely produced financial instruments.

For example, 'prime bank guarantees' are on offer, bearing the 'imprint' (and sometimes the thumbprint!) of widely respected institutions and individuals, whilst manufactured 'certificates of deposit', allegedly issued by central banks (including the Bank of England) and other institutions, are offered for sale at a fraction of their pseudo 'face value'. The Bank of England has written to all authorised banks in London, warning them of the risks these dubious investment schemes pose.

In similar vein, unsolicited letters, often from West African sources, and typically offering a share in funds 'diverted' from export contracts provided that the addressee makes an initial payment to cover 'expenses', seem to have reached near epidemic proportions.

Happily, caution and commonsense still appear to have the upperhand amongst those approached with such schemes. But occasionally the most shrewd and cautious of persons will act entirely out of character when confronted with an offer which on any rational basis must be both unrealistic and unbelievable. It of course requires only a few to be tempted in this way for the fraud to become hugely profitable for the perpetrator. Propositions which seem to be offering something for nothing, or which are otherwise not fully comprehensible, should be firmly shunned.

Use of technology

Fraudsters are adept at making use of the current state of the art technology. Before information could be transmitted electronically, a major fraud was unearthed when an alert investigator enquired how it was that an important verification document had apparently been received in London by post from North America in an unfolded condition. Such a basic test is unfortunately no longer available to us, although it remains a useful example of the application of earthy common-sense as a tool in fraud detection.

Nowadays there is the risk that the modern fraudster will make use of the sophistication of computer technology and electronic fund transfer systems, aided by the speed of completion and lack of a visible paper trail associated with such methods. Payments systems need to be constantly evaluated, tested and updated to deter the determined fraudster. Controls such as encryption are strong — but they should not be seen as a panacea.

Nowadays there is the risk that the modern fraudster will make use of the sophistication of computer technology and electronic fund transfer systems

Countering fraud

Prevention has to be the principal aim whilst detection is the essential second line of defence.

Prevention depends upon adequate systems and controls — a statement so obviously true as not to require discussion. Perhaps that is why quite often it isn't discussed! Every organisation accepts that it cannot function effectively without an accurate record of its progress and the means of controlling its operations.

Yet it is not unusual for protection against fraud to be treated as a thing apart, as something which is needed by others but not by us. I am unclear whether this attitude, where it exists, reflects a lack of understanding of the wide spectrum of fraud, or complacency on the part of senior management.

I am convinced that fraud must be as much a part of the control function as is the management of risk. Fraud is intertwined with risk, not separable from it. Nor can fraud be prevented by the attention of the few. Everyone in an organisation has to be on the alert, not in an obsessive way, but with as much application and vigilance as is given to all the other requirements of a successful business.

Systems, for example, should be tested out under actual operating conditions and re-tested frequently. By way of illustration, we recently saw a case in the Special Investigations Unit in which the systems, operating correctly, had revealed to a clerk in the back office that a market trader was entering off-market prices on his valuation sheet. Unfortunately the clerk then sought an explanation from, and only from, the trader concerned who, as he was perpetrating a cover-up, was only too glad of the opportunity to provide a 'plausible' reason. The control to detect the fault was adequate, the acceptance of the 'explanation' was, sadly, not. The fraud risk was not being managed.

> Fraudsters ... are not restricted to regulatory, jurisdictional or territorial boundaries. They are mobile

The events leading to the collapse at Barings have underlined the need for effective systems and controls being efficiently run. The Special Investigations Unit is spending an increasing proportion of its time in helping supervisors to assess the effectiveness of systems and controls and I see this trend continuing. How much better to prevent fraud in the first instance than to be left to detect and investigate later on.

The Barings case also supports the importance of the role of the internal auditor. In general, internal audit has not in my experience always been accorded the resources and the status it deserves and requires. The Head of Internal Audit should report directly to the top of the organisation. He should have responsibility for commenting on the *overall* control environment, in addition to individual specific control failings and the implications of those weaknesses. There have been many cases where individual weaknesses are recognised, but the implications of the aggregation of those issues is either missed or ignored.

However, Internal Audit should not be left to shoulder the whole responsibility; I again emphasise that everyone in the organisation should recognise that he or she has a part to play to counteract fraud and cannot just leave it to others.

I think it is commonly accepted by financial institutions that they should only act for customers who they know to be of good repute, and in whom they are entitled to have confidence. 'Knowing your customer' is an essential part of fraud prevention defences and not just for

institutions. No organisation or individual will want to deal in any significant way with parties of whom they have but a sketchy knowledge. Money laundering (which I can only touch on here) is of course the means by which fraudsters or other criminals (notably drug dealers) are able to benefit from their actions.

Consequently, the more effective the anti-money laundering controls, the less rewarding the crime. Knowing your customer is therefore of considerable importance in the field of anti-money laundering, but I do emphasise that it would be an integral part of any fraud prevention system, even if money laundering had not been invented.

Co-operation

Fraudsters and other criminals are not restricted to regulatory, jurisdictional or territorial boundaries. They are mobile and quick to probe for gaps in demarcation lines between the several authorities involved in the detection, deterrence, investigation and prosecution of financial fraud. Fraudsters thrive in dark, secluded places — by the same token, they are prone to the exposure of concerted action.

Therefore, all those with an interest in the struggle against fraud should combine forces to the fullest possible extent, whilst respecting the legal provisions governing disclosure.

Recognising this, senior representatives from the main regulatory bodies, investigatory and law enforcement authorities and Government departments meet regularly to share information about financial frauds and fraudsters, through the medium of the Financial Fraud Information Network (FFIN). FFIN was set up by the Treasury in 1992 after the exposure of the BCCI and Maxwell affairs and I was its first Chairman. Jeremy Orme, Head of Special Investigations at the SIB, took over from me at the beginning of this year. Through FFIN, we have been able, on a number of occasions, to piece together a previously unrecognised case profile which has led to further investigation and sometimes prosecution. It has been interesting to find how often 'known names' recur in otherwise unconnected incidents.

> We should find ways of establishing a better early-warning system between the private sector and the counter-fraud authorities

Some forty different bodies now take part in FFIN and the list is growing. Due to the fact that each body has its own web of contacts, FFIN's overall coverage has become quite considerable. Regulators and supervisors are also strengthening their co-ordination at both the national and international level.

I am encouraged by the increasing seriousness with which business is accepting fraud risk as a reality in all sectors, even if it has taken some nasty jolts to get this far. I hope that it will lead to uniform application of a rigorous control culture, with sound systems and a willingness to accept that fraud can happen for any business. Equally it is clear that we will never be able to relax in the fight; no-one is going to discover the complete antidote.

Finally, I think it most important that we should find ways of establishing a better early-warning system between the private sector and the counter-fraud authorities. The emphasis needs to be on an improved flow of information to enable the authorities to act more quickly and thereby more effectively to prevent fraudsters from continuing their activity. Protection for the financial community will be assisted by early notification of potentially fraudulent schemes and I am sure that there is still room for improvement in that direction.■

UK MORTGAGE MARGINS

By Niall Gallagher and Alistair Milne, the Bank of England

Over the past two years there has been intense competition for mortgage business, with offers of substantial interest rate discounts or cash payments to borrowers and the emergence of an active re-mortgage market. What impact have these developments had on the margins of mortgage lenders, and to what extent do they represent a general prudential concern?

Over the past two years borrowers have taken advantage of attractive cashback and discount deals

Over the past two years lenders have fought hard for share of a relatively static mortgage market, by offering either interest rate discounts or cash payments to eligible new borrowers ('cashbacks').

These incentives have fuelled an active re-mortgage market, with many borrowers switching from one lender to another so as to take advantage of the best deals on offer. Mortgage lenders themselves now talk about intense competition and both the Bank of England and the Building Societies Commission have reminded mortgage lenders that they need to take full account of the risks involved when competing for this business.

To assess the prudential implications of these developments, we have examined data on United Kingdom mortgage margins and considered the circumstances which might generate widespread and substantial losses for mortgage lenders.[1] Our findings are supported by a technical paper which explains the methodology and data sources. This is available on request.[2]

Building society margins

We begin by examining a measure of the mortgage margin for the building society sector as a whole, computed using published interest rate and balance sheet statistics. This appears, together with the underlying retail and wholesale spreads, as a solid line in Chart 1. The box on the next page gives definitions of these three measures of the interest margin.

There is a close relationship between retail spreads and the building society mortgage margin, due to the dominance of retail deposits, which accounted for 73% of total liabilities at end 1995.

Spreads and the mortgage margin widened during the early 1990s, as building societies altered administered deposit and lending rates in response to increasing problems of arrears and loan losses. Wholesale spreads subsequently narrowed by around 200 basis points, while retail spreads fell by around 30 basis points, partly because of the deliberate policy of 'committed' mutuals to pass on the benefits of mutuality to their depositors and borrowers. The overall mortgage margin for building societies has fallen by around 60 basis points since early 1994. But by end 1996 it was still close to its average during the second half of the 1980s and, according to the less comprehensive data available prior to 1985, wider than at any previous period back to the early 1960s.

The statistics in Chart 1 largely exclude cashback offers. Lack of

data makes it impossible to provide an accurate figure for the impact of these offers. We have made some illustrative calculations and examined accounting data (see box on p41 for details). This suggests that in 1995 cashbacks would have reduced spreads and the mortgage margin by between 9 and 13 basis points. Thus we find that the decline of building society margins, while slightly greater than shown in Chart 1, has still been modest and margins remain at a similar level to the end of the 1980s.

There is likely to be some further decline of mortgage margins, as 'locked-in' deposits are released following the demutualisation of several major building societies later this year. It is difficult to quantify the magnitude of this effect. We believe that the unwinding of the effects of conversion could reduce the retail spreads by 10 to 30 basis points. This would leave margins slightly below their average level during the second half of the 1980s.

Bank margins

We have also calculated a measure of bank mortgage margins. This allows broad comparisons to be made, although the series is not directly comparable with the building society calculations. The reason for this is that interest rates for the banking sector are not published in sufficient detail to construct an entirely reliable weighted average of funding costs.

According to our measure, bank mortgage margins have recently been around 1.0-1.5% higher than those of the building societies, despite the greater reli-

Chart 1: The building society mortgage margin

THE MORTGAGE MARGIN

Mortgage margin is sometimes used to describe the difference between mortgage interest and deposit rates. This is the retail mortgage spread — the difference between mortgage rates and the cost of wholesale funds is the wholesale mortgage spread.

The mortgage margin is an average of these spreads adjusted for the endowment effect — the degree to which mortgages are financed by non-interest bearing liabilities. It is defined as the average yield on mortgage assets, minus the average cost of interest bearing liabilities, plus the proportion of liabilities that are non interest paying, multiplied by the average cost of interest bearing liabilities. This means the mortgage margin is always wider than the average mortgage spread.

Spreads, the endowment and the mortgage margin cannot be calculated from accounting data alone; they must also use average interest rates.

The net interest margin is a broader accounting-based measure defined for all interest earning assets. It also takes account both of spreads between interest rates and of the endowment effect.

Unlike the mortgage margin it can be computed from annual accounts as the ratio of net interest income to interest earning assets. Both measure the average yield on assets less the average cost of total funding. As such margins will differ for each lender, depending on the individual lender's mix of assets and liabilities.

Chart 2: Bank and building society mortgage margins

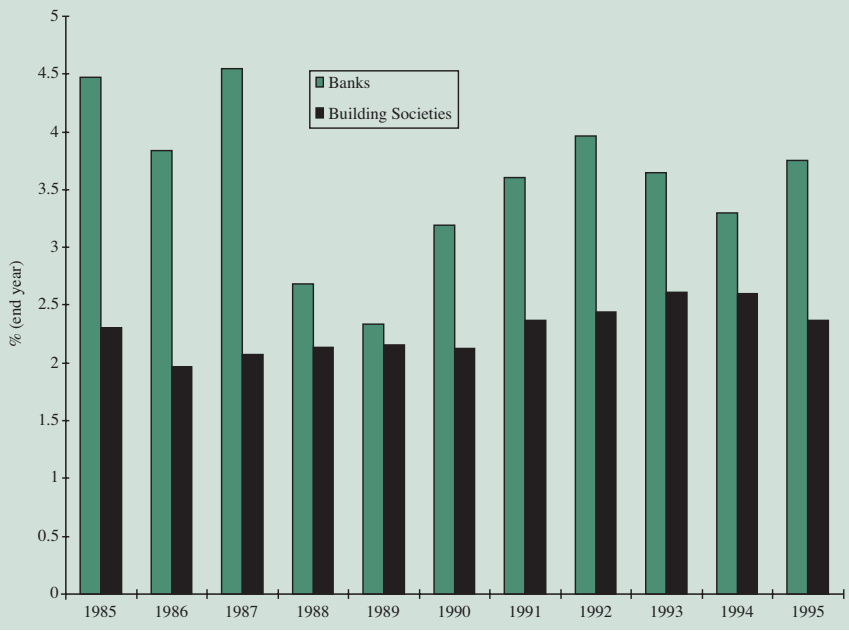
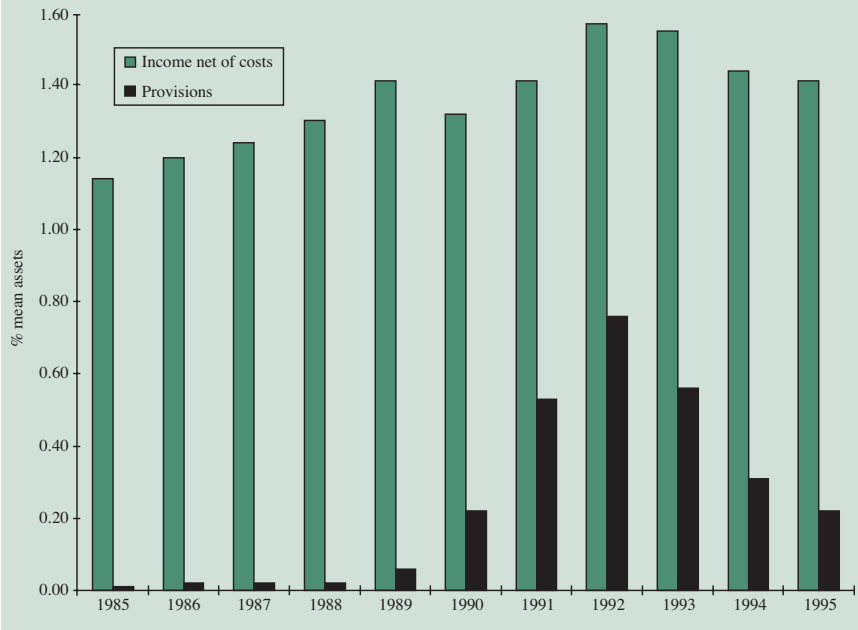


Chart 3: Building society sector income and provisions



ance of the banks on wholesale funding (illustrated in Chart 2).

Lower average retail deposit rates reflect banks' traditional role in providing liquidity and transactions services. In order to make a fair comparison with building society mortgage margins, the operating expenses associated with providing these services should be offset against the gross mortgage margin. In practice, we cannot do this because published statistics on costs are not sufficiently detailed. In 1995, bank and building society operating expenses were 2.7% and 1.4% of total liabilities respectively, but this difference reflects greater relative costs of managing non-mortgage assets as well as costs of providing deposit services. Overall, we judge that bank mortgage margins are broadly comparable to those of the building societies.

Bank mortgage margins have fallen over the past decade because of the decline in the proportion of non-interest bearing accounts from around 15% to 5% of total liabilities. Our weightings do not capture the corresponding increase in low interest chequeable accounts, which means that we may have overstated the decline in bank mortgage margins.

Bank mortgage margins are more sensitive than building society mortgage margins to the fluctuations in the wholesale mortgage spread, as wholesale funding accounts for more than 50% of bank liabilities compared to less than 20% for building societies. This is

THE IMPACT OF CASHBACKS ON MARGINS

Because they affect the interest charged to the borrower, mortgage discounts are usually taken into account in the published data on average mortgage interest rates, and hence are already included in the retail and wholesale spreads shown in Chart 1. Cashbacks do not involve a reduction in the average mortgage interest rate and are thus not reflected in these spreads. In this box we consider how much building society spreads and margins should be reduced in order to take account of the impact of cashbacks.

We have no direct measure of this impact. Nevertheless a rough estimate can be made using a combination of official statistics and a number of 'assumptions'. Anecdotal evidence suggests that around 20-30% of gross mortgage lending has been transacted on cashback terms over the past two years, whilst official data show that the annual level of gross lending has been equal to just under 15% of the average outstanding stock. If we assume an 'average' cashback equal to 3% of principal then it will be worth between 9 and 13 basis points of outstanding mortgage balances.

An alternative calculation of the impact of cashbacks on margins can also be made using annual accounts for individual lenders. The table below shows figures for lenders which amortise cashbacks over a period of years and report the unamortised balance in their accounts. By deducting this unamortised balance from the published net interest margin we obtain an adjusted figure for the net interest margin which takes full account of the impact of cashbacks. This adjustment is a measure of the impact of cashbacks on mortgage margins and on mortgage spreads. This is not a precise measure as unamortised balances include cashbacks offered prior to 1995 and exclude that part of the cashback treated as a first year expense. Nonetheless these figures suggest that an estimate for the effect of including cashbacks in published statistics of 9-13 basis points is plausible.

Net income as a % of mean assets	Based on published accounts (1)	Adjusted (2)	Impact of cashback adjustment (1)-(2)
Abbey National	1.76	1.64	0.12
Woolwich	2.08	1.98	0.10
Northern Rock	1.97	1.83	0.14
Chelsea	2.07	1.95	0.12
West Bromwich	2.17	1.96	0.21

Source: 1995 annual reports. Adjustment described in text.

the principal reason for the larger year-to-year variations in bank mortgage margins, compared to those of building societies.

Net income and provisions

Whether the current level of mortgage margins is adequate for supporting lending risks depends upon the potential scale of loan losses, the level of capitalisation of lenders, and their expected rate of growth of assets. We now examine the data on net income, loan loss provisions and capitalisation of retail funded mortgage lenders, as a yardstick for assessing future prudential risks. Again, we have a problem with data for banks, which prevents us from distinguishing that part of total income which can be attributed to their mortgage business, and are forced to rely primarily on data for building societies.

Chart 3 compares the net income of this sector (total income net of costs) with provisions for loan losses. Net income rose from around 1.2% of mean assets at the end of the 1980s to over 1.4% of mean assets in the early 1990s. This rise was, in part, a widening of administered spreads in response to the high level of loan losses. Net income has since fallen back slightly as loan losses have been reduced.

Loan losses themselves peaked at a little under 0.8% of mean assets in 1992; with cumulative loan losses, between 1990 and 1994, of around 2.5% of mean assets.

A striking feature of Chart 3 is that income net of costs has always been comfortably greater than provisions, leaving the sector in surplus throughout a period of unprecedentedly severe difficulties with mortgage lending. These surpluses amounted to around 0.8% of mean assets in the late 1980s and were still 0.54% of mean assets in 1992, the year of peak provisioning.

This continuing surplus of income over provisions was large enough to increase reserves from 4.4% of mean assets in 1985 to 5.8% of mean assets in 1995, despite relatively rapid balance sheet expansion.

A further factor increasing building society capitalisation was the issue of interest bearing capital, which was possible from 1988 onwards. By 1995, issued capital (permanent interest bearing shares and subordinated debt) amounted to 1.2% of mean assets, increasing total capital (reserves plus issued capital) to 7% of mean assets.

Computed on a risk weighted basis, the 1995 total risk weighted capital ratio for the building society sector was 14.1% and tier-1 capital ratio 12.7%.[3] These risk asset ratios compare with average 1995 ratios for the major United Kingdom banks, computed using the Basle 1988 risk weightings, of 10.8% for total capital and 6.6% for tier 1 capital. Building societies, like the banks, made particular efforts over these years to raise their risk asset ratios in order to comply with capital based regulatory regimes. But unlike the banks, they were under no pressure from shareholders to economise on their use of financial capital and many societies raised capital levels comfortably above their regulatory requirements.

Centralised lenders never held more than a small proportion of the market, but accounted for all the insolvencies amongst mortgage lenders

Examining the experience of other lenders would not lead to very different conclusions. The major banks also benefited from access to low cost deposits and their mortgage loan loss provisions were no greater, in relation to their stock of lending, than those of building societies. Like the building societies their mortgage income comfortably exceeded their levels of mortgage loan loss provisions in the early 1990s.

The lenders who got into most serious difficulties in the early 1990s were wholesale funded centralised lenders. These lenders never held more than a small proportion of the market, but accounted for all the insolvencies amongst mortgage lenders of the early 1990s. This is unsurprising given that they lacked a retail funding base, that their mortgage assets were often of below average quality and that they entered the recession with a relatively smaller proportion of mature low risk mortgages on their books.

Qualifications must be made about the use of this data as a guide to the security of mortgage lenders in the face of future loan difficulties. The loan loss provisions shown in Chart 2 were reduced by mortgage indemnity guarantees, which are now provided on much less generous terms than in the 1980s. The risks associated with mortgage lending have also increased because of a recent tightening of social security rules, restricting the ability of borrowers to claim mortgage interest payments on loans taken out after October 1995.

Nonetheless, this data still delivers a clear message: the profits from retail financed mortgage lending have comfortably exceeded loan losses even in exceptionally difficult economic conditions. This is a clear indication of the important

role played by the 'retail franchise', ie access to lower cost retail deposits, in cushioning lenders from the problem of loan losses during the early 1990s. Provided the retail franchise is not significantly eroded, prudential risk for retail-funded mortgage lenders remains low.

Worst case scenarios

In order to assess the potential scale of any future losses on mortgage lending, we have analysed the impact of some worst case scenarios on lender income. These scenarios all involve a major deterioration in asset quality for a 'typical' retail funded lender, which we take to be a lender with a portfolio composition and cost structure corresponding to the average of the present building society sector.

We first developed a baseline scenario for the years 1996-2004, which assumes market interest rates of 6%, loan loss provisions of 0.2% of mean assets per year and growth in the stock of mortgages and retail deposits of 6% per year. In this baseline, net income before provisions initially declines and then settles down at around 0.9% of mean assets, while the risk asset ratio of our typical lender rises to around 17.0% in 1997 and changes little thereafter.

There are a number of specific assumptions which underlie this baseline:

(i) No change in management costs as a proportion of total assets. This implies that we have taken no account of potential one-off increases in costs arising from, for example, the introduction of a single European currency.

(ii) Mortgage incentives spreading to 75% of the mortgage stock and eventually reducing the mortgage margin by 45 basis points a year.

(iii) One-third of any post-tax surplus paid out, either in the form of dividends (for a converted lender) or as 'quasi-dividend' paid in the form of bonuses or beneficial interest rates to members.

(iv) The retail spread declines by 25 basis points between end 1996 and 1998, to allow for the unwinding of the 'lock-in' of deposits with converting societies, and remains constant thereafter.

> Provided the retail franchise is not eroded, prudential risk for retail funded mortgage lenders remains low

Against this background, we have considered the impact of a short term interest rate shock, increasing interest rates from 6% to 12% over the period from mid-1997 to end-1999, with a consequent deterioration in loan performance.

Net interest income before provisions rises substantially (according to our calculations by around 45 basis points per annum as a share of mean assets). This is because of the increased value of the endowment of non-interest bearing liabilities when interest rates rise.

In the context of such an interest rate shock it seems reasonable to assume that loan losses are on about the same scale as experienced by the average building society lender in the early 1990s. The increase in net interest income then exceeds the rise in provisions in all but the peak year of provisioning. This, combined with slower growth in the stock of mortgages, increases the risk asset ratio to 20% in 2004.

The second scenario we have considered is a housing market boom and bust, repeating the experience of the late 1980s and early 1990s.

During the housing boom there is a period of 15% pa growth of the mortgage stock. This reduces the risk asset ratio to less than 12%, as the stock of assets outstrips capital reserves; and also increases average funding costs, as greater reliance is placed on wholesale funding.

The boom sows the seeds for further large scale loan loss provisions which, as a proportion of mean assets, are nearly twice as

STATISTICS ON INDIVIDUAL LENDERS

What do statistics for individual lenders add to our analysis of mortgage margins? The table shows 1995 accounting ratios for the eight leading United Kingdom mortgage lenders; these comprise four mutuals, of whom all but the Nationwide are converting later this year, and four banks. Together these institutions hold 66% of the stock of UK mortgages (the first column of the table records their individual market shares).The remaining shares of the mortgage stock are accounted for by smaller building societies (16%); other major banks (8%); specialised mortgage lenders, some of which are licensed as banks (8%); and other lenders (1%).

The second column of the table shows a measure of wholesale funds as a proportion of total liabilities. The institutions with the highest proportions of wholesale funding, Abbey National, Barclays and NatWest, are also the institutions with the most significant involvement in treasury and investment banking activities. This is confirmed by the lower proportion of loans and advances to customers in their balance sheet (column three of the table).

There are several significant differences between these lenders. There is a contrast between the four mutual institutions and the Abbey National, whose lending is dominated by mortgages, and the other three banks which conduct substantial non-mortgage lending business (column 4 of the table). Another contrast is between those institutions which provide substantial money transmission services (Lloyds TSB, Barclays, NatWest, and the Alliance and Leicester, the latter having acquired this business through its purchase of Girobank in 1992) and those which do not. The former group have higher interest and non-interest income, in relation to the size of their balance sheets, but also higher costs.

For all these lenders their retail deposit franchise allows them to earn a healthy level of net income (column five of the table). In the case of the four mutuals net income is close to the average for the present building society sector. There is greater variation amongst the banks, reflecting their different asset mixes.

The final column of the table shows the total risk-weighted capital ratio computed using the standard Basle 1988 weightings. On this measure it is apparent that the mutual institutions are particularly well capitalised, but the banks also all comfortably exceed the 8% international minimum capital standard.

%	Share of UK mortgage stock	Wholesale funding/ total liabilities	Loans and advances/ total assets+	Mortgages/ loans and advances+	Income net of costs/ total assets	Risk weighted total capital ratio
Halifax	19.8	16	81	97	1.4	15.0
Abbey National	12.3	36*	52	93	1.3	11.7
Lloyds TSB	9.6	21*	54	48	2.4	9.6
Nationwide	7.1	20	81	91	1.6	13.7
Woolwich	5.6	19	80	97	1.4	14.8
Alliance &Leicester	4.1	22	76	93	1.6	15.9
Barclays	3.8	31	49	19	1.5	10.9
NatWest	3.8	28*	53	20	1.7	10.7

Source: computed from IBCA database. All accounts are year ending December 1995, except Nationwide (March 1996).

* For these three banks, figure shown is other deposits/total liabilities and thus excludes some wholesale time-deposits.

+ For the societies, loans and advances are the total of class 1, 2 and 3 commercial assets.

great again as those experienced in the early 1990s. Loan loss provisions exceed net income for three years in succession, but even so the risk weighted total capital ratio of our typical lender still remains just over 9% in 2004.

Even with such a housing market boom and bust, the risk asset ratio of our typical lender remains above the Basle international minimum of 8%. Nevertheless it is still worth asking the question: what extreme circumstances, in the absence of any response by lenders or regulators, would reduce capitalisation to well below required minimum levels?

We find that the circumstances which would create such a substantial decline are a 'triple whammy' combining the spread of discounting which features in all our scenarios; a housing market boom and bust; and a substantial erosion of the retail franchise due to increased competition in retail deposit markets. To reflect this erosion, we assume that retail spreads fall a further 20 basis points per year after 1998, until by the year 2003 they are 100 basis points below the level of our baseline.

In this case, the total risk weighted capital ratio of our typical lender falls to around 3%. While the lender would still be solvent, such an outcome would severely shake the confidence of depositors and the markets.

We cannot assign a probability to such an extreme combination of events. Moreover, if capitalisation threatened to fall below the required level, regulators would be likely to insist on the lender putting in place management plans to increase net interest income and restore capitalisation.

Nevertheless, a comparison of these last two scenarios supports our main finding: provided the retail franchise is not significantly eroded, the possibility of loan losses triggering widespread and substantial deterioration in capitalisation of retail-funded mortgage lenders seems remote.

We should, of course, point out that this reassuring conclusion does not rule out the possibility of an individual lender getting into difficulties, especially if they rely to an unusual degree on wholesale funding, have particularly low quality assets, or enter new and unfamiliar areas of business.

Prudential concern could still arise over individual institutions ... who pursue a strategy of aggressive wholesale funded expansion

Conclusions

Despite intense competition for business, mortgage margins are in fact only slightly narrower than in the 1980s. Although there has been considerable contraction in the spread between mortgage lending rates and wholesale funding rates, the spread between mortgage lending rates and average retail deposit rates remains higher than in the 1980s. The impact of cashbacks and interest rate discounts has not been enough to alter the fact that, for most lenders who have access to a large pool of retail funds, mortgage lending remains a safe and profitable business.

BEYOND GLASS-STEAGALL: REGULATORY CHANGE IN THE UNITED STATES

By Peter Brierley, Supervision and Surveillance, the Bank of England

The US financial scene has been dominated in recent years by the gradual dismantling of old barriers to geographical and product diversification by US banks. In some cases, as in interstate banking, this has involved legislation. In other cases, such as Glass-Steagall reform, it has involved more flexible interpretations of existing laws. What impact will these changes have on the structure of the US financial services industry and how should the emerging financial groups be regulated?

Since the late 1970s, there have been major changes in the regulatory regime affecting banks operating in the United States, in at least four main areas:

- Definition and tightening of capital requirements.
- Relaxation of rules governing interest rates payable on deposits and on types of account.
- Expansion of bank powers.
- Liberalisation of interstate banking and branching rules.

In what follows the focus is on the final two areas, which have dominated recent discussions in Congress and amongst regulators.

Interstate banking

The most far-reaching legislative change of recent years was the passage of the Riegle-Neal Interstate Banking and Branching Efficiency Act in September 1994. This Act overturned the venerable McFadden Act of 1927, which in effect prohibited interstate branching, and the Douglas Amendment to the 1956 Bank Holding Company Act, which prohibited bank holding companies from expanding across state borders unless specifically authorised by states. The Riegle-Neal Act enabled:

- Bank holding companies to acquire banks across state lines as from 29 September 1995 (ie one year after enactment of the legislation).
- Federal Deposit Insurance Corporation (FDIC) insured banks to branch across state lines after 1 June 1997, through acquisition, merger or de novo (in the latter case, a state must affirmatively 'opt in' to such a provision).
- A bank holding company to consolidate its affiliated banks in different states into a single bank with interstate branches, again with effect from 1 June 1997.
- States to 'opt out' of the interstate branching (but not banking) part of the legislation although there was also provision for states to opt in early (ie allow interstate branching and consolidation to take effect before 1 June 1997).

In many respects, this Act was an attempt by Congress to formalise more general developments already in progress at state level. Since the late 1970s, bank holding companies have been allowed to own banks in more than one state, through regional agreements approved by the legislatures in adjoining states. Riegle-Neal extends these agree-

Riegle-Neal is likely to accelerate the current trend towards consolidation and concentration in US banking

ments to the country as a whole, and goes further in authorising interstate branching as well as banking (note that the Bank Holding Company Act only allowed interstate ownership of separate banks). This has generally been welcomed: of the major states, only Texas has opted out of interstate branching, while several others have opted in early.

Most US banking analysts agree that Riegle-Neal is likely to accelerate the current trend towards consolidation and concentration in US banking. Indeed, several large banking groups are already planning to consolidate by rolling up many of their separate banks into branches of a single bank. The motive is usually a desire to reduce costs and the burden of supervisory and legal reporting requirements, by rationalising the number of charters and eliminating as much legal structure as possible.

Banks are also engaged in a spate of mergers and acquisitions, which seem likely to be further stimulated by the ability to bank and branch fully across state lines.

Recent research in the United States[1] suggests that, within five years of full implementation of the Riegle-Neal Act, the number of US banking organisations could fall from around 8,000 to some 3,500, and perhaps only 2,000 in the longer-term. At the same time, the proportion of total US banking assets accounted for by banks with over $10bn in assets could rise from 63% currently to perhaps 84% in 5 years' time and 92% in the longer-term, assuming trend growth in gross domestic banking assets. Most of this growth is initially predicted to be at banks with over $100bn in assets, whose share of total assets is forecast to rise from 19% currently to 44% in five years' time.

The table (left) illustrates the growing trend towards larger banks through a process of mergers and acquisitions in the United States. This trend towards concentration reflects not only interstate banking and branching but also a number of other factors currently stimulating increasingly large mergers and acquisitions in US banking. Most notably these include:

- The need to address increased competition from mutual funds,

SELECTED LARGE US BANK MERGERS ANNOUNCED/COMPLETED IN 1995 & 1996

Purchaser	Assets ($bn)	Company Acquired	Assets ($bn)
ABN Amro North America	27.3	Standard Federal Bancorp	15.5
Bank of Boston Corp.	47.0	Baybanks Inc.	11.5
Corestates Financial	29.0	Meridian Bancorp	14.9
Chase Manhattan Corp.	118.6	Chemical Banking Corp.	178.5
First Chicago Corp.	72.4	NBD Corp.	47.8
First Union	86.8	First Fidelity	35.4
Fleet Financial	50.9	NatWest Bancorp	33.7
		Shawmut National Corp.	32.4
HSBC Americas	22.7	First Federal S&L	7.2
National City Corp.	34.6	Integra Financial Corp.	14.8
NationsBank Corp.	182.1	Bank South	7.4
		Boatmens Bancshares	40.5
PNC Bank Corp.	62.1	Midlantic Corp.	13.6
US Bancorp	21.4	West One Bancorp	8.7
Wells Fargo	50.3	First Interstate	58.1

finance companies, investment banks and other financial service providers.
- A desire to maintain returns on equity by cutting costs.
- A predominant view among US bankers that the pace of technological change has become so rapid, especially in areas such as electronic banking, that only large banks can afford the investment required to keep up.

The US market, however, will probably remain sufficiently large and diverse to ensure a continuing role for regional and smaller community banks.

Riegle-Neal also raises some interesting questions about the future regulatory framework in the United States. Many of the larger US bank holding companies plan to take advantage of the Act by rolling up their banks into branches of a single bank. If the bank were to operate on, or shift to, a federal (or'national') charter, this would also involve a shift from regulation by the Federal Reserve Board or FDIC and state banking departments, to regulation by the Office of the Comptroller of the Currency (OCC), the supervisor of national banks.

But if these banks remain within an overall holding company framework, the Fed would still be involved as the sole US regulator of bank holding companies. There might then need to be further discussions among the regulators on how best to arrange the supervision of these entities.

Following several failed attempts to amend or repeal Glass-Steagall, Congress is likely to make a renewed effort this year

Glass-Steagall reform

Having overturned the McFadden Act, Congress next turned its attention once again to an almost equally ancient pillar of US banking, the 1933 Glass-Steagall Act. This Act separated commercial from investment banking.

There have been previous attempts to reform or repeal Glass-Steagall, some of which have passed the Senate, but the House has thus far failed to pass a significant measure of reform in this area. After protracted negotiations in the last Congress, the bill introduced by Representative Jim Leach, Chairman of the House Banking Committee, collapsed at the end of the Congress, having never succeeded in reaching the House floor.

The reasons for this failure are very complex. In practice, the bill's proposed relaxation of barriers separating commercial and investment banking had become part of a more general reform package, which included provisions relating to banks' insurance powers. These proved particularly contentious, since bankers were pressing for greater ability to engage in new insurance activities, whilst representatives of the insurance lobby were opposing any such relaxation or, indeed, any attempt to allow banks and insurance companies to affiliate.

Another attempt to repeal Glass-Steagall is likely in the new Congress and, indeed, several bills have already been introduced in the House and Senate to that effect, including a new version of Leach's bill.

It now seems almost inevitable that Glass-Steagall will be revised, either through legislative action or further regulatory reform. Its not entirely straightforward drafting is becoming increasingly subject to more flexible interpretation by the various federal and state regulatory agencies. This in turn reflects a growing perception that Glass-Steagall almost certainly undermines the efficiency and competitiveness of

THE US REGULATORY SYSTEM

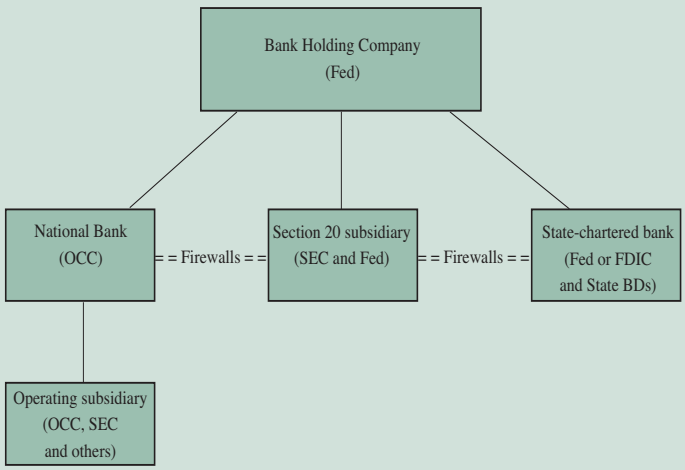
US regulatory system - commercial banks

Office of the Comptroller of the Currency	The Federal Reserve	Federal Deposit Insurance Corporation	State Banking Departments
Regulates federally chartered banks and supervises federal branches of foreign banks.	*Regulates bank holding companies and state-chartered banks which are members of the Federal Reserve System. Also has primary regulatory responsibility for foreign banks and the foreign operations of US member banks.*	*Runs deposit insurance system and regulates state chartered banks which are not members of the Federal Reserve System.*	*Regulate state chartered banks (domestic or foreign) in conjunction with either Federal Reserve or FDIC.*

US regulatory system - investment banks

Securities and Exchange Commission	Commodity Futures Trading Commission
Regulates stock exchanges and markets; intermediaries including broker-dealers and investment advisers; and SROs.	*Regulates futures exchanges and markets; intermediaries including Futures Commission Merchants; and SROs.*
SROs *National Association of Securities Dealers and registered securities exchanges.*	**SROs** *National Futures Association and registered commodity and futures exchanges.*

Example:



the US financial services industry in today's global markets, without offsetting benefits in terms of reduced risk or enhanced safety and soundness.

The first major relaxation of the Glass-Steagall constraints by the regulators occurred in 1987. Section 20 of the Glass-Steagall Act outlaws affiliations between institutions 'engaged principally' in underwriting securities and member banks. But the Fed interpreted its language as permitting bank holding companies to establish securities subsidiaries — so-called Section 20 subsidiaries — provided the latter did not derive more than 5% of their revenue from 'ineligible' securities activities (mainly underwriting and dealing in common equity). This 5% limit was increased to 10% in 1989 and more recently to 25% last year, to take effect from March this year.

The Fed also announced last year a relaxation of three of the 'firewalls', or prudential restrictions, designed to separate an insured bank from its Section 20 affiliate. More recently it proposed a relaxation of most of the other firewalls.

The OCC, meanwhile, has adopted a process under which it may consider allowing national banks to carry out securities activities, including those which may be prohibited for the parent bank, in direct 'operating' subsidiaries.

The OCC is also continuing to interpret the National Bank Act in a way which clarifies the position

on national banks' insurance activities. This approach gained support from a series of unanimous Supreme Court rulings in favour of the Comptroller, for example the recent ruling which confirmed the OCC's interpretation of Section 92 of the National Bank Act, authorising the sale of insurance by national banks located in towns of 5,000 or fewer persons. Such rulings may undermine the ability of individual state insurance commissioners to resist growing incursions by national banks into a wider range of insurance businesses.

Regulatory implications

On the face of it, these developments seem likely to enhance financial stability in the US. Just as geographical diversification in the post-McFadden era will make it easier for US banks to reduce their dependence on one particular state or region, so product diversification by banks into areas such as securities, insurance and fund management could, if properly managed, bring with it risk reduction benefits.

But the resulting growth of larger and more diversified financial conglomerates in the United States has implications for the regulatory structure. It seems likely that an increasing number of the major regulatory agencies in the United States will be involved in supervising the activities of any one of the new financial conglomerates. This will require an agreed and co-ordinated approach to the regulation of these more complex groups. A simplified depiction of the very complex US regulatory structure is set out opposite.

The growth of larger, more diversified financial institutions with global operations is raising similar issues for regulators in other countries. There is a growing mismatch between the way complex global firms organise themselves manage-

> Product diversification by banks into areas such as securities ... and fund management could bring with it risk reduction benefits

rially, with matrix structures and global risk management, and the legal entity structure through which they engage in business and are supervised. Awareness of this challenge is continuing to lead to close co-ordination between regulators in the United States, United Kingdom and other financial centres.

One of the major regulatory issues in the United States arises because the US federal securities laws require that activities involving products defined as 'securities' be transacted in registered 'broker-dealer' firms, subject to regulation by the Securities and Exchange Commission (SEC), although there is an exemption for commercial banks. The definition of securities has been widened over the years, to include not only traditional capital-raising instruments, such as equities, bonds and notes, but also other products, most recently options on individual securities and on groups of, or indexes of, securities.

But that still leaves certain products outside the definition, including, for example, interest rate swaps and certain foreign exchange products. Such activities can be carried out by affiliates of registered broker-dealers, but such entities are not subject to direct regulation by the SEC. An extension of the SEC's authority to regulate such entities, or other parts of an investment banking group containing a registered broker-dealer, would either involve legislation to amend the federal securities laws, or changes in SEC rules governing the activities of broker-dealers and other affiliates. Proposals to this effect are already being considered for the OTC derivatives market.

Similar issues also arise in the futures markets, where the regulation by the Commodity Futures Trading Commission (CFTC) focuses on registered 'futures commission

merchants'— firms that trade in futures contracts on organised exchanges as agents for customers — but generally does not extend to these firms' affiliates.

How will these issues be handled in a post-Glass-Steagall world? Some might speculate that the Fed would support the hypothesis that any investment banking group which enjoyed access, even if that access were indirect, to the discount window, payments system and deposit insurance scheme should be subject to consolidated supervision on the same basis as a commercial banking group. Such an argument might suggest that, as guardian of the payments system and lender of last resort, the Fed should be the overall consolidated supervisor of such an institution.

But Arthur Levitt, Chairman of the SEC, has argued strongly (for example in Congressional hearings) that the additional securities business permissible to groups that combine banking and securities activities in a post-Glass-Steagall environment should be subject to the sole jurisdiction of the SEC. Indeed, he has intimated that securities activities currently carried out within banks should ideally be shifted to separately capitalised firms subject to SEC oversight. This would represent a more 'functional' approach to regulation in the United States, but would still leave open the question whether there should be a primary regulator of financial conglomerates and, if so, which of the various regulatory agencies it should be.

This could also in principle vary, depending on the mix of different financial activities carried out by the conglomerate. At present, there is little evidence of a consensus emerging in the United States on these issues.

A further, but perhaps second-order, issue arises because the US federal banking regulators themselves have different views on the corporate structure through which banking and securities activities should be combined.

Federal banking regulators have different views on the corporate structure through which banking and securities activities should be combined

The Fed has traditionally adhered to the view that securities and any other expanded activities permissible to banks should be carried out within a holding company framework, in which new activities are concentrated in affiliates separate from the insured bank. This view was also embodied in Chairman Leach's proposals in the last Congress. The argument is that risks to the deposit insurance fund (ie the taxpayers) are minimised by ensuring that expanded securities and insurance powers are concentrated in separate holding company affiliates, which are structurally distinct from the banks covered by deposit insurance within the group.

This would also ensure that what is known in the United States as the federal safety net (including not only the extensive deposit insurance arrangements, but also discount window lending and payments system access) was not extended to banks' securities activities, thereby providing them with what could be argued as an unfair competitive advantage vis-a-vis securities firms.

But Comptroller of the Currency, Eugene Ludwig, has argued publicly in a number of speeches that a preference for the holding company approach rests on certain presumptions that need to be more fully debated:

- Securities and insurance activities are inherently riskier than banking.
- Allowing banks to engage directly or through operating subsidiaries in such activities is itself risky.
- The holding company framework does not impose unreasonable costs and inefficiencies.

He believes that evidence from the securities activities that US commercial banks are permitted to undertake outside the United States and from the wider securities powers usually allowed to non-US banks in their own domestic markets, does not provide support for the first two of these assumptions. The fact that, when many banks have the opportunity, (especially small banks) they avoid the holding company structure calls into question the third assumption.

This explains why the OCC would allow banks the choice of conducting activities that are part of, or incidental to, the business of banking in direct (or 'operating') subsidiaries of the banks themselves. In the OCC's view, this would encourage greater diversification within the bank itself, thereby potentially helping to reduce risk.

Some might think that the OCC would argue that it should be the primary regulator of the additional activities carried out in direct subsidiaries of national banks, not withstanding that the Fed, of course, is the overall regulator of bank holding companies in the United States. The SEC, however, tends to favour the holding company structure, as it facilitates the functional approach to supervision which the SEC supports, whereas the operating subsidiary route is consistent either with a functional or an institutional approach to supervision.

Another issue is whether the OCC can already allow national banks to carry out more wide-ranging non-banking activities in operating subsidiaries, using the language which allows banks to engage in activities incidental to banking, than is permitted for Section 20 affiliates given the 'principally engaged' language of Glass-Steagall. The OCC has said that it is not trying to breach the walls of Glass-Steagall through its new approach. It argues that there is nothing in its recent proposals which will allow national banks to carry out securities activities in operating subsidiaries which they cannot already do via Section 20 affiliates.

Even if this were the case, it would be possible for the states and other federal banking agencies to ensure that any expansion of powers for national banks was also made available to state-chartered banks. So even in the absence of legislative action, it is likely that the rules relating to Glass-Steagall will continue to be relaxed.

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Conclusions

Given the complexity of these issues, what conclusions can be drawn?

Other things being equal, it seems likely that de-regulation and liberalisation will lead to a stronger US banking sector, in which geographical and product diversification are utilised constructively to manage and reduce risk.

But financial stability may be enhanced further if the banking, securities and insurance regulators in the United States are able to reach a common position on how best to regulate the new more complex financial conglomerates. In doing so, they may well decide to build on the work being carried out in international fora on how best to supervise such groups on a global basis.■

NOTES

1 'The transformation of the US banking industry: what a long strange trip it's been', Allen N Berger, Anil K Kashyap and Joseph M Scalise, Brookings Papers on Economic Activity, 1995.

LLOYD'S: CURRENT DEVELOPMENTS AND THE CHALLENGES AHEAD

By Stephen Walton, the Department of Trade and Industry

Lloyd's lost £8bn between 1988 and 1992. Few institutions have lost sums on this scale and lived to tell the tale. Matters were made worse by widespread litigation between capital providers (the "Names") and their agents. The external environment had also changed. Lloyd's urgently needed to deal with its immediate problems but also required a strategy for the longer term. How has Lloyd's — and those involved in regulating Lloyd's — met this challenge?

In response to the difficulties Lloyd's found itself in, the Council proposed a Reconstruction & Renewal plan ('R&R'), finalised last year. This aimed to deal with the losses by recapitalising the market, reinsuring the old 'long-tail' risks into a newly created reinsurance company (Equitas Reinsurance Limited) and providing a financial settlement for Names which would bring the litigation to an end.

Maritime disasters contributed to Lloyd's problems in the late 1980s and early 1990s.

During August 1996, the members of Lloyd's gave their overwhelming support for the Council's proposals. With R&R now firmly in place, Lloyd's can build its future without a sense of imminent crisis and can learn from past problems.

Recent history

In order to avoid the risk of repetition, the first question to answer is "How did the huge losses occur?" There were two main contributory factors.

First, a series of disasters in the late 1980s and early 1990s — severe hurricanes in the United States, storms in Europe and a number of maritime catastrophes — hit Lloyd's when excess capacity in the worldwide market had forced down premium rates.

Second, a large number of losses from old general liability policies written in the United States between 1940 and 1985 began to emerge and had to be provided for (known as long-tail business). The losses, related mainly to asbestosis and pollution, were substantially increased by changes in the US social, judicial and legislative climate, including some retrospective legislation, which significantly increased the exposure of Lloyd's underwriters to risks which were not contemplated when the policies were written.

The combination of natural disasters and growing long-tail liabilities was bound to lead to losses. However, the situation for some underwriters was made worse

because the losses were concentrated on certain Lloyd's syndicates and companies in the London market. This was the so-called 'LMX spiral' where risks were reinsured over and over, with the chain of reinsurance often passing back through the same companies and syndicates. In some cases negligent underwriters failed either to estimate or to cover their aggregate exposures adequately.

It has also been alleged that fraud played a part in the losses. While there are certain exceptions, such as the fraudulent practices of the syndicates managed by Peter Cameron-Webb, these allegations rest mainly on hearsay evidence. Various investigations undertaken, in Lloyd's and elsewhere, have not produced evidence in a form that would be acceptable in a criminal prosecution. In any event, these allegations concern the distribution of losses between Names, not the scale of their total losses.

All of these developments led to a situation in which a significant number of the capital providers at Lloyd's could not pay their debts. Due to the way members are reinsured and their ultimate reliance on the Central Fund for additional security on policies they have underwritten, this led to the risk of the entire market being brought down.

Future challenges

From the events of the recent past, it is clear that future action has to be focused in two areas. First, there are commercial issues. Although some businesses will fail despite being well managed, in the majority of cases failure is closely correlated with poor management. If Lloyd's is to be successful in future, the first requirement is for the businesses to be managed with skill and good judgement that matches or beats the competition.

Second, regulators need to ensure that the policyholder protection arrangements at Lloyd's are fully effective, that the regulation of the system of capital provision works effectively and that the market as a whole is seen to be a fair and clean place to do business. While effective regulation can help improve the quality of management and can provide protection against poor management, it is not a substitute for good management.

These issues have to be addressed at a time when the markets in which Lloyd's operates are becoming increasingly global and ever more fiercely competitive.

In some ways this offers new opportunities, which have been reflected in the growing volumes of business from continental Europe and the Asia/Pacific region. But this has to be balanced against the competitive impact of new market entry from reinsurance companies based in, for example, Bermuda, as well as continuing strong competition from more traditional sources such as Germany and Switzerland, which have been reducing the importance to Lloyd's of its more traditional markets, notably in the

Losses were concentrated on certain Lloyd's syndicates and companies. This reflected the "LMX spiral" where risks were reinsured over and over ... often passing back through the same companies and syndicates

United States. Even on its home ground, Lloyd's has seen growing competition for its general insurance business, in areas such as motor insurance.

Commercial issues

There are a number of areas where there are lessons to learn from the past:

- Underwriters need access to the relevant information to enable them to understand and manage their aggregate exposure to all categories of risks and in particular major catastrophes.
- They must be sure that the policy wordings avoid any ambiguities which lead to exposure to risks which were never contemplated when the policies were written.
- Underwriters must price risks on a well informed and rational basis, and avoid the temptation to maintain higher volumes of business at times when there is over capacity in the market forcing premiums down.
- As with any financial business, there must be effective control systems in place such as separating the front and back offices to protect against fraud, negligence and poor commercial judgement, avoidance of a situation where major decisions are taken by one person unaided and formulation of clear business plans which are properly monitored, reviewed and updated.

However, there is the further management challenge of responding to the changing structure of the market. In both the London market and internationally there has been a move towards a smaller number of larger underwriting entities in the more complex areas of commercial insurance and reinsurance. This is seen in the reduction in the number of syndicates at Lloyd's and in the reduction in the number of companies and syndicates sharing any given reinsurance risk. It remains to be seen exactly how far this trend will go within the Lloyd's marketplace, but it seems unlikely that the process is yet complete.

There has been a move towards a smaller number of larger underwriting entities in the more complex areas of commercial insurance and reinsurance

Furthermore, the events of the last few years may well lead Lloyd's customers to demand much more transparency about the financial security underpinning Lloyd's policies. While Lloyd's underwriters and policyholders have the additional benefit of the Central Fund, there could be commercial pressures to raise the minimum funds that Lloyd's requires of its members, quite apart from the external regulatory requirements of the day.

There is a similarity here between the situation in the London reinsurance market and elsewhere, where the minimum levels of capital now required for a player to be credible are substantially above those laid down in statute. Following R&R, Lloyd's exceeds its statutory solvency requirements at a Society level by a factor of five.

Lloyd's needs to maintain a structure which keeps it abreast or ahead of its competitors. Traditionally, the international network of brokers, with London at its centre, brought international business to London cheaply and efficiently without the need for underwriters to organise and manage expensive distribution systems.

However, in an effort to cut costs, there has already been an emergence of direct selling insurers, for example, for motor and home insurance, cutting out the need for intermediaries. If Lloyd's is to be successful in the future, it will need to look for innovative ways of keeping its costs down while at the same time ensuring that risks are properly assessed and that customers

receive an excellent quality of service. Lloyd's must also look at the best ways of deploying its brand image, which remains valuable despite the recent problems.

Precisely how Lloyd's and its businesses will address these issues is likely to depend to a large degree on the future nature of capital provision at Lloyd's.

It is only a few years since corporate capital was first admitted to the Lloyd's market, but it has been growing in importance every year (representing some 45% of the total capital for the 1997 year of account) and there is every reason to think that this trend will continue. At the same time, well over half of the individual Names who have supported the market over the decades are now set to leave. It remains to be seen whether and for how long the traditional form of an individual Name with unlimited liability will continue and to what extent limited liability capital will become the main or even the only basis of underwriting capacity.

It is difficult to predict how far recent trends will go. It is certainly conceivable that Lloyd's could develop into a series of independent medium-sized (by international standards) insurance businesses trading under the Lloyd's umbrella. If that were to happen, the question would arise of whether such businesses would continue to want to trade under the single brand name and single set of licences that Lloyd's currently enjoys (with the associated costs). They might prefer to become a series of genuinely independent businesses each with their own set of United Kingdom and international licences.

It remains to be seen whether and for how long the traditional form of an individual Name with unlimited liability will continue

Regulatory issues

Regulation of Lloyd's and at Lloyd's covers essentially three strands: protection of policyholders, protection of capital providers and the effective management of the market.

Long-term measures

The Government has announced that it proposes to undertake a review of the statutory basis of regulation at Lloyd's. The start of the review has been deferred until summer 1997, essentially for two reasons: first, to allow for the completion of R&R and second, so that the likely future capital structure of Lloyd's could be gauged more accurately.

If there is to be a change to the statutory basis of regulation at

THE REGULATORY FRAMEWORK

Lloyd's operates in a unique regulatory framework. For most purposes, it is self-regulating, under a series of Lloyd's Acts passed between 1871 and 1982.

The main exception is prudential insurance regulation, where the Secretary of State for Trade and Industry has responsibility for supervising the solvency of individual Lloyd's members (who act as sole traders with unlimited several liability) and of the market globally. The Secretary of State's wider intervention powers are available only if Lloyd's or its members fail to meet the statutory requirements set out in the Insurance Companies Act 1982.

The special arrangements can largely be justified by the existence of the Central Fund,which is held as a safety net for policyholders in the event that underwriters prove unable to cover their personal insurance liabilities. In parallel, and with similar justification, international markets have licensed Lloyd's as if it were a single insurance company.

As regards investor protection, Lloyd's agents have a wide-ranging exemption from the provisions of the Financial Services Act 1986.

As underwriting entities become larger and more capital is dedicated to particular lines of business or syndicates ... the spread of risk bearing will diminish, as may the willingness of one part of the market to support another

Lloyd's then the new arrangements must address the nature of the market in the next century and not simply be a knee-jerk reaction to past problems.

Few would dispute that the interests of policyholders must take priority, in the same way that the primary concern in the regulation of banking is to protect depositors. However, due to the traditional way capital at Lloyd's has been provided, by individual Names with unlimited liability, there has always been a concern about how the interests of the Names can be protected.

At the time of the Financial Services Act 1986, the report of a committee of enquiry headed by Sir Patrick Neill QC sought ways in which Names could receive protection similar to that introduced for investors. While Lloyd's implemented all the recommendations made, Names have often expressed dissatisfaction about the effectiveness of the regime from that viewpoint.

Whether or not the difficulty will remain in the medium or longer term will depend on whether the trend from sole trader, unlimited liability to limited liability corporate capital continues. In an exclusively corporate market, the problem may largely disappear because of the wider legal framework in which companies have to act. However, as long as individuals continue as underwriting members, the challenge will be to establish the correct balance between these competing interests in a way that meets public expectations.

Short-term measures

Whilst it would be inappropriate to make substantial changes to the existing arrangements before the outcome of the Review is known, there is scope to make improvements within the existing regulatory

The underwriting floor at Lloyd's of London

framework. The DTI's responsibility is principally to protect policy holders. Since the completion of R&R and the reinsurance of pre-1993 liabilities into Equitas, the DTI has introduced Regulations which make a number of changes to the regulatory arrangements for Lloyd's. These include improving and updating the solvency reporting requirements and clarifying the arrangements for regulating former Names, particularly in the event that Equitas were ever unable to pay outstanding claims in full.

Beyond that the DTI is reviewing the present solvency regime at Lloyd's to see whether there is scope for improvements. As underwriting entities at Lloyd's become larger, and more of the capital provision is dedicated to particular syndicates or lines of business — moves which commercially have some benefit — there is also a downside in that the spread of risk bearing across the market will diminish, as may the willingness of one part of the market to support another in times of difficulty. Taken to its extreme, compartmentalisation of the business could put into doubt not only the ability to undertake a future financial reconstruction of the market, but also the extent to which stronger units within the market would be prepared to contribute to the Central Fund for the benefit of weaker rivals.

In advance of the review, the DTI and Lloyd's need to work together to minimise the risks arising from the compartmentalisation of the market into a smaller number of larger units, by using the mechanisms available for setting solvency requirements at a level which will provide acceptable comfort to customers that their claims can be met.

More generally, the advent of corporate capital and creation of integrated Lloyd's vehicles, means that an insurance business wishing to do business in London now effectively has a choice between setting up as a DTI authorised company, in the usual way, or setting up as a business within the Lloyd's market.

In this situation, it will become even more important to ensure that the substance of internal regulation by the Lloyd's regulatory authorities at least matches the requirements and effects of the DTI company regime, both as regards new authorisations and ongoing business monitoring.

Lloyd's too has an important role in the short term. For the foreseeable future Lloyd's will continue to have wide-ranging powers and duties to regulate the market. An important goal of Lloyd's self regulation is the protection of capital providers. However, if Lloyd's is successful in protecting capital providers, this will also benefit policyholders.

As foreshadowed by Lloyd's first regulatory plan, recent months have seen the introduction of a range of new measures. For example, introducing a registration scheme for market professionals which will help raise the standards of those agents writing business and those looking after the interests of the membership.

New disciplinary arrangements have also been introduced which include powers to fine agents and members who break the rules. Lloyd's has established a regulatory review group (drawing its membership from market regulators, practitioners and Names, as well as elsewhere in the City). A successor to its regulatory plan, setting out its regulatory priorities for 1997, has been published.

Conclusions

While the importance of effective and timely regulation cannot be overstated, insurance supervision, as with other forms of financial regulation, must remain a backstop to what are in the first instance management responsibilities.

It is important that the protection provided by the backstop continues to be reviewed against a wide range of potential dangers.

But for Lloyd's, as for any other insurance or financial services business, keeping just inside the thresholds of regulatory intervention is unlikely to be adequate in today's fiercely competitive markets. Managers within Lloyd's will need to write business on terms which will generate a profit and demonstrate that their strength goes well beyond the statutory minima. Failure to do so could cause the capital supporting the market to move elsewhere and lead customers to lose confidence.■

CREDIT EXPOSURE IN OTC DERIVATIVES: A RISK MANAGEMENT CHALLENGE

By Andrew White, Financial Structure, the Bank of England

Over-the-counter derivatives give rise to credit exposures which are sensitive to changes in market prices, even in fully hedged portfolios which generate no market risk. This is an important risk management issue for banks whose OTC derivatives activities account for a significant part of their credit exposures. How can banks model and manage these exposures, and what options do they have if they wish to reduce them?

Background

The main instruments traded in the over-the-counter (OTC) derivatives markets include currency swaps and options, interest rate swaps and options and forward rate agreements (FRAs). Such instruments are distinct from exchange traded derivatives (such as futures and exchange traded options) because they are negotiated privately between the counterparties rather than traded on an organised exchange.

Globally, the notional value of outstanding OTC derivatives contracts totalled $38.3 trillion at the end of March 1995, according to the 1995 BIS Derivatives Markets Survey[1]. According to data from the International Swaps and Derivatives Association, OTC derivatives markets have grown significantly in recent years: at the end of 1995, global outstandings totalled over five times the 1990 figure.

The main reason for this growth has been the increased realisation among both financial and non-financial institutions of the benefits of OTC derivatives as a risk management tool. Because they are bilateral agreements privately negotiated between counterparties, they are inherently flexible and can be tailored to meet the risks that they are designed to manage. Moreover, margins payable on OTC derivatives have reportedly fallen significantly in recent years, making them more attractive to end-users who have in turn become more sophisticated in their use of these instruments[2].

How credit exposures arise

OTC derivatives can create credit exposures over which a firm has little direct control. The reason for this is that changes in market prices of the underlying instrument on which the derivative is based change the value of the expected future cash flows to which the derivative contract gives rise.

These cash flows can readily be hedged, so there is no net effect on the total payments to be made and received. But because the realisation of cash flows depends on each counterparty's performance, credit exposures can still change even if the contract is fully hedged against market risk.

Although other factors, such as volatility in an options portfolio, can have similar effects, the problem is best illustrated by looking at interest rate swaps, which — according to the BIS Survey — account for almost half of the gross market values of OTC derivative transactions.

A swap in which one counterparty (known as the 'payer') pays fixed (ie a fixed interest rate) and receives floating (ie a floating interest rate) acquires positive value to the payer as interest rates rise above their initial level because the coupon outflows remain unchanged but the prospective inflows increase.

The payer therefore becomes exposed to his counterparty, because he depends for the realisation of that profit on continuing to receive the floating rate payments. Other things being equal, this exposure falls as the contract approaches maturity and the remaining payment dates become fewer. For a given change in interest rates, deals with longer to run create more exposure.

If on the other hand interest rates fall, the payer becomes indebted to his counterparty: it is the counterparty who then has the credit exposure. So across a range of interest rates, the profile of credit exposure on a single swap is analogous to the value of an option: nil below the 'strike price' (ie the level of interest rates at which the deal was done — its inception rate), but rising steadily above it. Sloping yield curves and timing mismatches between the fixed coupon outflows and floating rate inflows complicate this analysis, but the essential features of this simple example remain valid.

Of course, it is possible to hedge these cash flows so that market movements have no net overall cash flow effect. One way would be to hold government bonds (to create an assured inflow of fixed-rate funds) and use the floating rate inflows from the swap to service the deposit liabilities which fund the bond holdings.

But other swaps can also provide a good hedge: for example, the bank may enter into a pay floating/receive fixed swap of the same size and at the same level of interest rates. The BIS Survey showed that *in aggregate* banks do build up portfolios of this kind, perhaps using securities for some hedging — where those securities provide the more liquid hedge — but generally having swaps portfolios which are quite well matched in themselves.

A portfolio can be fully insulated from the cash flow effects of market movements

A portfolio can therefore be fully insulated from the cash flow effects of market movements. But adding a swap to the portfolio to serve as a hedge will itself create new potential credit exposures. The firm then faces credit exposures whichever way interest rates move: if they rise, the exposure is to the counterparty from whom the floating rate cash flows are due; if they fall, the exposure is to the counterparty to whom the variable payments are made.

As swaps initiated at a range of interest rates are added, forming a large portfolio of deals, this simple example translates into a profile of current credit exposure which is likely to be fairly stable within the range of rates at which deals have been done but to rise quite sharply outside that range. The effect can be calculated precisely, given the specifics of each deal.

The exposure-creating potential of interest rate changes can be quite marked: for a five-year swap paying the fixed rate of 6%, for example, each percentage point change in interest rates creates a credit exposure of approximately four percent of the notional principal of the deal.

Over time, as deals mature and payments are exchanged, the credit exposure created by movements in market rates will fall; and if the initial movement in rates is quickly reversed, exposures will return to close to their previous levels. But if rates remain at their new level, deals undertaken at the new level of rates

will start to predominate in the portfolio and a reversal of rates would again tend to increase credit exposure.

It is also worth noting that an increase of credit exposure on currency swaps, which include a substantial element of long dated exposure because of the final exchange of principal at maturity, will be far more persistent than it would be for interest rate swaps.

UK banks' exposures

Recent trends in the OTC derivatives credit exposures of UK-incorporated banks illustrate the effects outlined above. Table 1 below shows the sharp variations in the relationship between aggregate notional principal — a standard measure of the size of portfolios — and the exposures to which they gave rise, particularly in the first half of 1995.

It is clear that these fluctuations do not represent anomalies amongst the banks concerned: the share of credit exposure accounted for by each of the six largest players — who together account for around 80% of UK banks' credit exposure — showed little variation; so the explanation clearly lies in general market factors.

In the case of interest rate derivatives, a key factor was the sharp fall in some major market interest rates — notably, yen in the first half of 1995 — and the lack of similarly sharp changes in major market interest rates thereafter (see Chart 1).

This demonstrates how a substantial change in rates will create large unrealised profits. In the absence of netting, which is discussed further below, this will not be offset by unrealised losses on the rest of the portfolio: only contracts with unrealised profit represent credit exposures.

Understanding the changes in credit exposure associated with foreign exchange derivatives is complicated by the fact that an exchange of principal at maturity makes the products' market value sensitive to changes not only in interest rates, but also in the underlying foreign exchange rates, so currency swaps are more sensitive to changes in the underlying markets than other derivatives instruments: currency swaps had the highest ratio of positive market value to notional outstandings (12.7%) in the BIS Survey. So above-average volatility in some of the major exchange rates in the first nine months of 1995, followed by a period of relative stability thereafter, is probably an additional explanatory factor in their case (Chart 2).

Why does it matter?

Credit exposure on OTC derivatives has two distinct components: current exposure and potential future exposure.

Current exposure is simply the replacement cost of the deal: its current mark-to-market value. This replacement cost constitutes 'exposure' only if it is positive and is treated by banking regulators in a similar way to other exposures (ie

Table 1: Aggregate notional principal and exposures

	1993 H1	1993 H2	1994 H1	1994 H2	1995 H1	1995 H2	1996 H1
Interest rate contracts							
Notional principal (£bn)	1,849	2,333	3,300	3,356	3,927	3,783	4,374
Current credit exposure (£bn)	34	44	37	38	51	61	51
As percentage of notional principal	1.8%	1.8%	1.1%	1.1%	1.3%	1.6%	1.2%
Foreign exchange contracts							
Notional principal (£bn)	1,141	1,066	1,447	1,400	1,428	1,404	1,644
Current credit exposure (£bn)	31	23	39	27	39	32	25
As percentage of notional principal	2.7%	2.2%	2.7%	1.9%	2.7%	2.3%	1.5%

Chart 1: Ten year government bond yields and current credit exposure in OTC interest rate derivatives

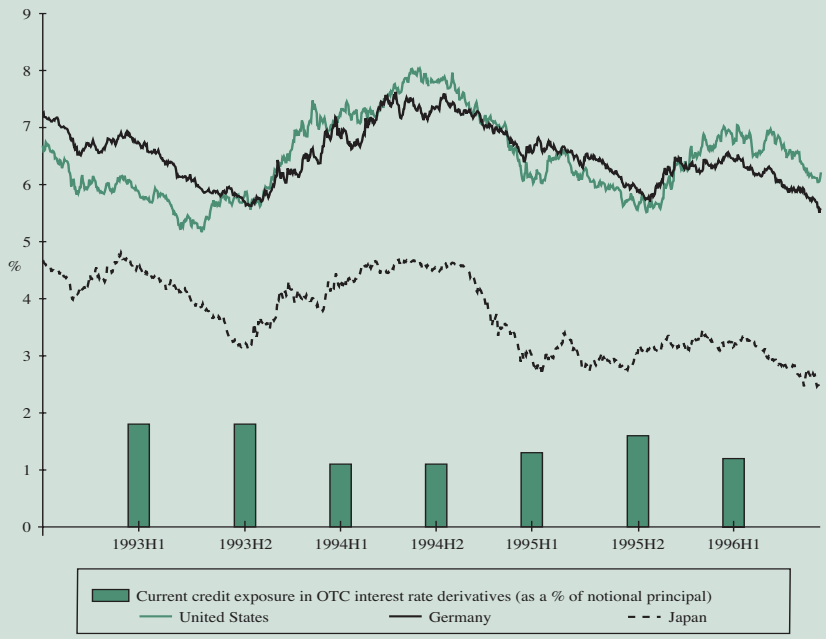
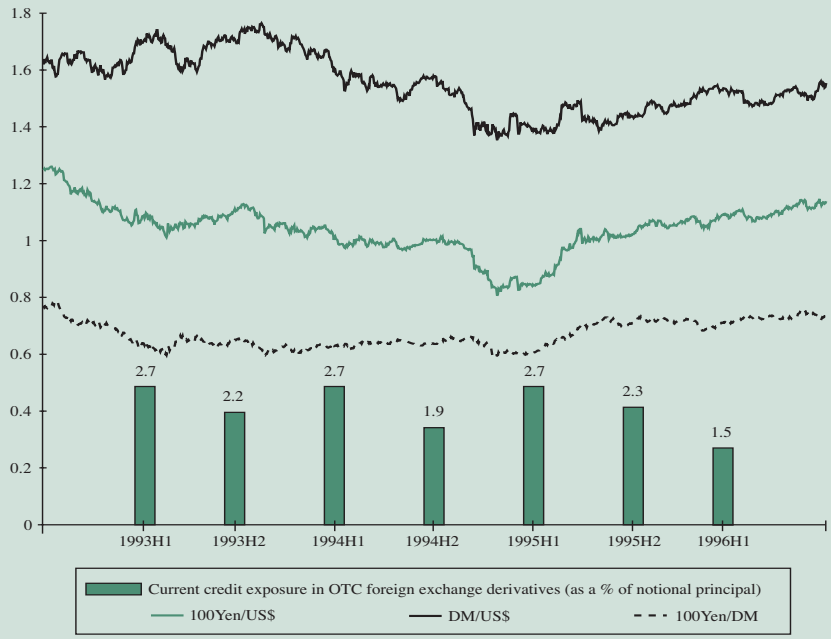


Chart 2: Major exchange rates and current credit exposure in OTC foreign exchange derivatives



by weighting it in terms of counterparty risk). The second element — potential *future* exposure — is a measure of the additional exposure to which the deal may give rise during its remaining life, and is calculated by banking regulators by applying an 'add-on' based on the notional principal of the deal. The add-on depends on the nature of the contract and its remaining maturity: short-term interest rate contracts have a lower add-on than long-term foreign exchange or equity derivatives.

Banks active in the OTC derivatives markets measure replacement cost of portfolios by marking their positions to market on a daily basis, and attempt to estimate their potential future exposure by revaluing their derivatives portfolios under different scenarios of market rates. Banking supervisors monitor credit exposures through quarterly prudential returns and regular meetings with banks; they may also ask for further information on derivatives exposures as they see fit.

In addition, the Bank of England's Traded Markets Team conducts visits to banks and makes recommendations about best practice, taking account of the size of a bank's OTC derivatives portfolio.

The capital held against the potential future exposure component provides additional comfort in a winding-up or transfer of business. But it does not provide a cushion for a going concern against changes in exposure which may occur during a contract's life. It is a

fixed amount irrespective of a contract's current market value, reducing only with remaining maturity, and it cannot be 'used' to offset increases in current credit exposure. These therefore feed through directly — after application of the appropriate risk weight — to a bank's capital requirements.

This means that, if OTC derivatives account for a significant part of a bank's business, market movements have the potential to push the bank against its large exposure limits and capital requirements. To remain within these regulatory constraints, banks may need to set lower internal limits or create capital 'headroom' by disposing of other realisable assets.

Although credit risk in OTC derivatives accounts for only a small percentage of most UK banks' risk-weighted assets (the market average was about 7% in 1995), it represents a larger proportion for derivative specialists: in 1995, seven banks had over a quarter of their risk-weighted assets accounted for by credit risk in OTC derivatives.

The risk that market movements will create prudential problems for banks affects these derivatives specialists most acutely because their business is substantially committed to the very contracts which create the additional credit exposure. The flexibility of their balance sheet is correspondingly more limited because they have fewer non-derivatives related assets.

Managing credit exposures

There are a number of steps banks can take to manage their credit exposures. Broadly speaking, these are of two kinds. They can:

- Dispose of those contracts which contribute most to the exposure (through termination or reassignment of contracts).
- Offset their exposure by various means, including bilateral netting and collateral.

Bilateral netting agreements... allow for the offsetting of profits against losses and so can reduce exposure and variability

Termination of contracts

One obvious method of reducing an OTC derivatives portfolio's credit exposure is by terminating contracts with positive replacement cost (ie positive mark to market value). In other words, banks can reduce credit exposure by realising profits which would otherwise only crystallise over the remaining life of the contract.

There are, however, a number of reasons why banks may be unwilling or unable to take this step. First, a contract with unrealised profit may be a direct hedge for a contract with an unrealised loss. Second, the counterparty to the contract may be unwilling to terminate the contract. For example, their expectation of likely market developments may lead them to the view that, while the contract is loss making at present on a mark-to-market basis, it will in fact turn out to be more profitable for them. Alternatively, the contract may be a hedge for another contract, a liability or an asset.

Third, a bank may not wish to incur the transaction costs involved in terminating contracts. This may seem implausible, given that the direct transaction costs of terminating a contract are low. But the costs of agreeing a valuation of the contract, together with the opportunity cost of terminating old contracts when a firm could be capturing new business, may be more significant. Finally, termination of a contract crystallises tax liabilities which the bank or its counterparty may wish to defer.

Reassignment of contracts

Another obvious — but less used — method for a bank to reduce its credit exposure in OTC derivatives is to reassign (to another bank) or sell-on contracts with positive replacement cost. This too realises profits

BILATERAL NETTING OF OTC DERIVATIVES

There is scope for banks to reduce their credit exposures on OTC derivatives through legally enforceable netting arrangements that provide for the set-off — in the event of the counterparty's insolvency — of claims arising out of profitable contracts against obligations due as a result of unprofitable contracts.

A key determinant of whether two parties can successfully reduce counterparty risk in this way is the legal status of netting in the jurisdictions in which they operate. This will vary from jurisdiction to jurisdiction: in many, the concept of netting by set-off violates the pari passu principle in respect of creditors' rights in insolvency. The United Kingdom is, however, generally seen as having a "netting friendly" legal system which recognises set-off by close-out provided appropriate contractual arrangements are in place

As well as providing a valuable risk management tool, netting agreements can also help banks and securities firms reduce their supervisory capital requirements. The Basle Capital Accord of July 1988 accepted that netting by novation could be risk reducing, but delayed recognising other agreements, such as set-off, because at the time there was no consensus as to whether they were robust. However, in July 1994 the Accord was amended to include the possibility of bilateral set-off by close-out. As the Basle Paper states: "Under this amendment the primary burden rests on banks to demonstrate to their supervisors the legal enforceability of netting arrangements in all relevant jurisdictions". In practice, this means that banks must obtain positive legal opinions in relation to:

- The law of the jurisdiction in which the counterparty is incorporated, and — if a foreign branch of a counterparty is involved — the law of the jurisdiction in which the branch is located.
- The law of the jurisdiction chosen as governing law for the agreement.
- The law of the jurisdictions governing the individual transactions.

In addition, agreements are not allowed to contain 'walk away' clauses. (ie provisions allowing a non-defaulting counterparty to make only limited payments to the estate of a defaulting counterparty).

The July 1994 Basle amendment was incorporated into the EU Solvency Ratio Directive in April 1996. The Bank's requirements are contained in Policy Notice S&S/1996/3. In addition to the legal requirements, the Bank has a number of system requirements to ensure that banks reporting exposures on a net basis are actually eligible to do so. Banks must also be able to monitor and control roll-off risk (i.e. the potential for sudden increases in exposure when short-dated obligations, which have been netted against longer-dated claims, mature).

By the end of 1996, some half a dozen banks had netting arrangements which met the requirements of S&S/1996/3 and were therefore entitled to report their derivatives exposure on a net basis for capital adequacy and large exposures purposes.

Thus far, it is only the current exposure (ie mark-to-market replacement cost) of a derivatives portfolio to which the netting provisions apply: the calculation of regulatory capital to support potential future exposure continues to be on a gross basis. Basle rules adopted at the end of 1995 allow these requirements to be reduced, though not eliminated, but these changes have not yet been transposed into EU legislation. It is hoped that the necessary amendment to the SRD will be made during 1997.

which would otherwise only crystallise over the remaining life of the contract.

Such reassignments are apparently not made frequently; when they are, they are typically reassignments of whole portfolios. The pricing of such reassignments is usually conducted through a kind of competitive tender process, with bids from banks active in the OTC derivatives market.

Bilateral netting

Where a bank has a number of swaps with a single counterparty, entered into at different times in the normal course of their business, as is typical of the most active market makers, it is quite likely that its overall net exposure to that counterparty will be much lower — and much less variable — than the sum of the exposures on the in-the-money contracts (see box above). In such cases, the establishment of legally enforceable bilateral netting agreements can have

COLLATERALISATION IN THE UK OTC DERIVATIVES MARKET

At the start of 1996, the Bank of England visited a number of firms active in the OTC derivatives markets to assess the level of collateralisation in the United Kingdom. At that time, approximately 3% of these firms' mark-to-market exposure was collateralised. It is generally expected that this percentage will increase.

Banks and securities firms are increasingly using collateral in the OTC derivatives market because the growth of this market has created substantial bilateral credit exposures, especially between larger dealer firms. This reflects the view that collateralisation makes credit risk more controllable, while nevertheless involving a certain amount of administrative, legal and operational risk (which must itself be managed); that it expands the potential counterparty pool, by making it possible to trade with weaker credits, thus diversifying a firm's portfolio; and that it frees up credit lines, allowing more business to be transacted with individual counterparties.

Many of the major firms have already developed, or are in the process of developing, in-house collateral management systems. Mostly, they are stand-alone systems that receive deal valuations and other information from other in-house systems. Their main functions are to value collateral, to make collateral calls to check that collateral has been delivered, to monitor re-hypothecation — the ability to re-pledge collateral received - and reporting.

The initial method of collateralisation in the OTC market was 'one-way' collateralisation — where only one counterparty (traditionally the one with the lower credit rating) pledged collateral — of the mark-to-market value of the transaction. However, 'two-way' deals — where both counterparties pledge collateral — are now reportedly the norm between major OTC firms and sophisticated end-users, such as hedge funds. Most arrangements include thresholds (i.e. levels of mark-to-market value, often related to the counterparty's credit rating, above which collateral is callable) and some also include minimum call amounts and trigger clauses (i.e. clauses which detail events which would 'trigger' a collateral call). Due to these complications, some firms active in the OTC derivatives markets are not yet comfortable with two-way collateral arrangements.

A number of institutions — including Cedel Bank and the Chicago Mercantile Exchange — have developed, or are in the process of developing, systems which offer third-party collateral management and depository services such as deal valuation and position administration but do not go as far as guaranteeing trades (i.e. they stop short of providing a function usually associated with a clearing house). Depositories can assist collateral management by reducing its cost, by managing the credit, legal and operational risks involved and by providing independent valuations. However, depositories may be limited in terms of the range of participants involved and range of products covered.

Despite its attractions, collateralisation could have some negative consequences. It may, for example, reduce vigilance with regard to counterparty credit status. It undoubtedly adds to administrative, operational and legal risk which must itself be managed. Also, because the volume of potential collateral is finite, an increase in the collateral given in one part of the business inevitably reduces the assets available to support the rest of the business. It can increase liquidity risk by tying-up marketable assets. Another potential issue may be that trigger clauses — activated, for example, by a downgrade in credit rating — may exacerbate the problems a counterparty is already facing (ie in this instance, the repercussions of the downgrade itself). Nevertheless, provided market participants and regulators are fully aware of these risks, the OTC markets should benefit from an appropriate mix of collateralised and uncollateralised credit exposures.

considerable benefits: such agreements allow for the offsetting of profits against losses — in the event of a counterparty's insolvency — and so can reduce the resultant exposure and its variability.

EU legislation on supervisory standards has only recently been amended to recognise the validity of bilateral netting agreements in the calculation of banks' capital requirements but bilateral netting could have a significant impact on a bank's credit exposures. Estimates from the United Kingdom suggest that netting could reduce banks' current credit exposure by approximately one-third. As yet, there is no

clear evidence of its effect on the variability of exposures, but this too may be substantially reduced.

Multilateral netting

In recent years, there have also been industry initiatives to extend the benefits of netting beyond bilateral netting to multilateral netting, covering deals with different counterparties. This is typically achieved by interposing a central clearing house between the parties.

Two foreign exchange multilateral clearing houses have been established to date: the London-based Exchange Clearing House (ECHO) and the New York-based Multinet. In April 1996, the Basle Capital Accord was amended to recognise multilateral netting of forward value foreign exchange contracts. The allowance of multilateral netting under the EU Solvency Ratio Directive is currently under discussion.

The use of collateral

Another option is for banks to collateralise their exposures (see box opposite). This effectively provides realisable security to cover losses which might otherwise arise if the counterparty defaults. Whilst reducing the credit risk, this can give rise to administrative, legal and operational risk — which must then itself be managed[3]. As long as the collateral held is adjusted regularly in line with changes in current exposure, it also protects against the variability of exposure.

Use of collateral may of course be designed to free up capital so that additional business can be undertaken and to free up credit lines. But it also has the effect of minimising problems caused by market movements.

Collateralisation ... effectively provides realisable security to cover losses which might arise if the counterparty defaults

At the start of 1996, only 3% of OTC derivatives transactions in the United Kingdom were collateralised, but it is generally expected that this percentage will increase over the next few years.

Conclusions

Even with a hedged portfolio which generates no position risk, OTC derivatives give rise to credit exposures which are sensitive to changes in market prices and which need to be actively managed from a credit perspective. Firms generally recognise this and there are a number of ways in which these risks can be managed.

Contract termination or reassignment, bilateral netting and the use of collateral all allow firms either to pass on the exposure to others or to limit its size and variability.

The development of other techniques — including the recognition of multilateral netting, the netting of potential future exposures ('add-ons') and, possibly, centralised clearing for OTC derivatives — will add to the range of options. So the risk of hitting large exposure or capital constraints is one that, correctly managed, can largely be eliminated.■

NOTES

1 A world-wide survey of derivatives markets co-ordinated by the Bank for International Settlements (BIS) in April 1995 (See 'The OTC derivatives markets in the UK', BEQB February 1996). NB figures quoted from this source exclude FX forwards and FX swaps.

2 Further sources of background information on OTC derivatives can be found in: "Recent developments in the swap market" (BEQB, February 1987); "Potential credit exposure on interest rate swaps" (Bank of England Working Paper, January 1994); and "Statistical information about derivatives markets" (BEQB, May 1995).

3 See "Operational risk: where to start?" (Price Waterhouse) in this issue of the Financial Stability Review (pgs 23-31).

REGULATION AND MARKET DESIGN: THE STOCK EXCHANGE'S ORDER BOOK

By John Whitmore, the Securities and Investments Board

Just over ten years ago, 'Big Bang' opened up the London Stock Exchange to the forces of competition. Now, the Exchange is fast approaching what may well be a second Big Bang. In October this year, it is scheduled to launch its new electronic order book for trading in the shares of the United Kingdom's top 100 quoted companies. What regulatory issues has the SIB had to address as part of this reform?

Traditionally, share trading in the United Kingdom has been conducted through Stock Exchange market makers. Under this system, securities firms can register to stand in the market as principals, quoting prices at which they will buy or sell shares — eg 249p bid, 251p offered, in a size up to, say, 50,000 shares.

Market makers conducted their business on the Stock Exchange floor until. Today, they are based in their offices and feed their quotes electronically to the Stock Exchange Automated Quotation (SEAQ) system which combines all the quotes in a security on a single (screen) page for relay to all exchange members (and anyone else who subscribes for the service). Trading takes place bilaterally over the telephone, between brokers acting as agents and market makers acting as principals.

Market making currently provides the core trading mechanism for two of the world's major markets: the London Stock Exchange and the NASDAQ Stock Market in the United States. Most other markets trade by some form of order-matching. Here, the idea is to match the orders of end buyers and sellers without needing the intermediation of a principal. But in many order-driven markets exchange members still act as principals, committing capital to facilitate customer trades or contributing more generally to liquidity through proprietary trading.

In simple terms, the main advantage advanced for the market making system is that it ensures continuous liquidity — at least up to a certain size. This is usually achieved by exchanges placing obligations on market makers to quote prices and trade at those prices throughout trading hours.

The major benefits of order-driven trading, on the other hand, are perceived to be the bringing together of all order flows centrally, the elimination of the 'turn' (between bid and offer prices) which the intermediary makes in offering a principal service, and opportunities for increased automation.

So, does the Stock Exchange's decision to alter its system of trading matter to the regulators? The answer to that is 'no' and 'yes'.

Market design

In principle, we do not see it as part of our remit to lay down the system by which securities markets should trade. That should be for the markets themselves to decide.

However, any market design needs to deliver a trading process

that is both fair and orderly — not least because it is human nature for market users to try to achieve the best outcome for themselves, possibly to someone else's disadvantage. That is why standards and rules are required to ensure fair play and to maintain confidence in the market as a whole.

Competition can, of course, go a long way towards protecting investor interests by delivering choice of trading provider and trading mechanism. The possibility of competing trading systems is certainly one that was envisaged in the Financial Services Act. The Act does not lay down that there should be a single central market; nor does it say that trading should be by one means rather than another, eg order-matching rather than market making. Instead, it gives the Office of Fair Trading a specific remit to ensure that an exchange's rules are not anti-competitive. The Act does not give the SIB discretion to turn down an applicant for exchange status on the grounds that there is no need for another exchange, provided the applicant meets criteria designed to safeguard investor interests.

Those criteria, set out in Schedule 4 to the Act and summarised in the box on this page, aim to afford basic protections to investors when trading on a recognised investment exchange. In addition, we set out in our Equity Market Report (June 1995) what we consider to be the key criteria that any exchange should meet to ensure that high standards of integrity are maintained across the marketplace as a whole. These set out in particular that markets should:

- Be as transparent as is consistent with maintaining liquidity.
- Treat all market users fairly.
- Provide a reliable price-formation process.
- Be free from misconduct and abuse.

How, then, have we applied these principles in assessing the Stock Exchange's proposals for its new trading system?

The proposed system

The first thing to say is that the London Stock Exchange has presented a considerable challenge to everyone, including regulators, by proposing a market system so far untested in the United Kingdom. As regulators, we have experience of pure market making — the system which the London Stock Exchange currently operates. And since September 1995, we have also had experience of an electronic, order-driven exchange, Tradepoint.

However, what the Exchange is proposing is considerably more complex than the system operated by Tradepoint. On Tradepoint, trading takes place solely through the electronic order book. Buy and

RECOGNISED INVESTMENT EXCHANGES

Because investment exchanges arrange deals, or deal in investments, they require authorisation or exemption under the Financial Services Act (FSA). Under section 36 of the FSA, they are exempt from authorisation if they are recognised by the Securities and Investments Board. The criteria which exchanges must satisfy in order to earn this recognition are set out in Schedule 4 to the the FSA (as amended by Schedule 21 to the Companies Act 1989). In summary, these criteria require an exchange to:

- Have sufficient financial resources.
- Ensure that business is conducted in an orderly manner.
- Limit dealings to investments in which there is a proper market.
- Ensure that issuers provide adequate information to enable those dealing to determine the investments' current value.
- Have satisfactory procedures for the settlement of exchange transactions.
- Record on-exchange transactions.
- Have adequate arrangements for monitoring and enforcing compliance with its rules.
- Have effective arrangements for the investigation of complaints.
- Promote high standards of integrity and fair dealing.
- Co-operate with other regulators.
- Have, where relevant, default rules to enable action to be taken in respect of unsettled market contracts, where a member firm defaults.

The SIB supervises UK Recognised Investment Exchanges to ensure that they continue to satisfy the criteria set out in the Act.

Electronic order book trading could herald a second 'Big Bang' — in the 1986 reforms, traders moved from a floor-based system to screen-based trading

sell orders are listed by price and participants execute a trade by 'hitting' the most competitively priced order(s).

From a regulatory viewpoint, such systems are relatively straightforward: all orders input are visible to market users, making for good price-formation; the most competitively priced orders are executed first, ensuring fair treatment for market users; and the electronic system provides instant information capture, precision and easy audit — all of which is good for the speedy public dissemination of information and for cost-effective regulatory monitoring.

The London Stock Exchange's proposals, on the other hand, will also permit trading outside the electronic order book. So in addition to trading through the order book (either in an agency or principal role), broker-dealers will be able to trade with clients and other exchange members bilaterally.

The Exchange has chosen this structure for three main reasons. The first is to enable broker-dealers to continue to provide a principal service to clients who want immediacy of execution but who consider (for their larger orders in particular) that they may not be able to achieve that through the order book, or that they may turn the price against them. It is argued that it is better to let these orders be dealt away from the order book but still be on-exchange under Stock Exchange rules, rather than risk their being traded off-exchange.

A second reason for permitting dealing outside the order book is to widen the options for trading on non-standard conditions. Clearly, anyone who trades on the order book will want to know in advance when their counterparty will settle. That is why all order book trades are for standard settlement. Currently this is the fifth business day after the trade. However, some market users may want to trade on different terms, which could involve shorter or longer settlement periods. Whilst the brokers could still execute a non-standard order through the order book, putting up cash or stock on the clients' behalf, the parties may find it more convenient to conduct such trades bilaterally away from the order book.

The third reason is to cater for a separation of smaller and larger trades operationally. This is not simply because retail investors often need longer than the standard 5 days to settle. More specifically, it reflects the Exchange's decision that all order book trades, once executed, should be settled bilaterally by the individual parties to the

trade rather than through the Exchange in the role of a central counterparty.

A consequence of the Exchange's decision to opt for member to member settlement is that a party executing a large trade against a number of smaller orders would face greater complexity and cost in the settlement process. That is why the Exchange has proposed that broker-dealers should be able to handle retail orders as principals independently of the order book, so long as their prices at least equal the best bid and offer prices currently on the order book.

Reliable price formation

Given these options for trading, the key regulatory question is how and where price formation is to take place, and whether the result will be visible and reliable pricing for the market as a whole.

In its initial consultation on introducing an order book, one of the options put forward by the LSE was that the order book and market maker quotes should operate in parallel and appear on the same screen, effectively offering market users a straight choice of trading method. Since market making firms rejected that idea as unworkable, the Exchange has focused on developing the order book alone as the core price formation mechanism.

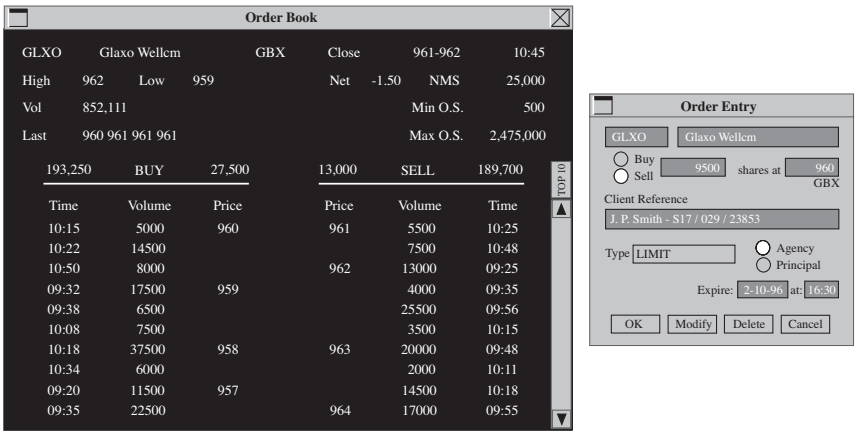
That has been made easier by the Government's decision, on the advice of the SIB, to extend stamp duty exemption from market makers to all exchange intermediaries. This removed any residual pressure on the Exchange to design a new structure with a view to sustaining tax advantages as they currently stood, rather than focusing on its longer-term interests.

However, if the order book is to be the central price-formation mechanism, it is clearly critical that users should have confidence in its reliability.

First, they need to know that the rules for order book trading will give them precedence in order execution if theirs is the most competitively priced order — or, when there are other orders at the same price, if theirs is the longest-standing order at that price. Equally importantly, they need to know that any competitively-priced order they place on the order book will not be left unexecuted while less competitive orders are executed outside the order book.

For example, if an investor had a bid for 10,000 shares at 285p on the order book, he would not expect any broker-dealer subsequently to be allowed to bid a client for shares at 285p, or less, while leaving his order unexecuted. He will want to be confident that in such circumstances his bid will take precedence. This is why the SIB has supported the Exchange's proposals to require those who deal away from the order book to recognise the precedence of the order book by simultaneously filling any orders that are more competitively priced (or equally priced but of longer standing). This process is commonly referred to as 'interaction'.

There are two circumstances in which the Exchange has proposed exemptions from mandatory interaction with the order book. The first is in the case of the smaller trades already mentioned. The second is in the case of very large orders and risk trades. The issue here is the continuing role of broker-dealers in putting up capital to facilitate such trades. At present, those committing



The Exchange's new-look trading screen for the order book

capital to 'risk' trades are granted a delay, generally of up to 60 minutes, in publishing the price and size of those trades. This is to give them the opportunity to unwind their position and rebalance their book without turning the market against them.

This kind of arrangement can make mandatory interaction difficult. If interaction were to be required at the time of the large trade, the dealer would almost certainly be giving his position away, so defeating the purpose of publication delay.

On the other hand, delaying interaction to the point of trade publication may also prove problematic. For example, investors who would have benefited if the interaction had taken place at the time of the original trade may lose out if they have unwittingly removed their orders before interaction occurs.

In the opposite direction, delay creates time for news of the original trade to leak and for those who come to learn of the trade to place orders on the order book in time to benefit from impending interaction.

One key way to minimise complications in this area, and to ensure that investors are as well informed as possible about trading trends, is to keep the number of trades qualifying for delayed publication to a minimum. The Director General of Fair Trading has said that he considers trade publication delays to be anti-competitive, because one party holds an information advantage over others.

The SIB has an open mind about whether delayed publication for very large trades is needed in the interests both of market liquidity and keeping business on-exchange (and thus ultimately publishable). Its approach over the past couple of years has been to require the Exchange to produce empirical evidence to justify delays in trade publication. This process has already resulted in a significant increase in the proportion by value of trades (in leading domestic equities) that are published immediately, from around 50% in 1995 to more than 80% today.

One way to minimise complications in this area ... is to keep the number of trades qualifying for delayed publication to a minimum

The London Stock Exchange recently commissioned further research in this area, both looking at trading patterns since the January 1996 changes in the trade publication regime and investigating what further changes to the trade disclosure regime may be appropriate on the introduction of order-driven trading. This should help all parties in assessing whether it is necessary to hold back from immediate publication for all trades. It should also prove helpful in developing the Exchange's proposals for a formal regime that could allow some 'working' of orders before a completed trade is published.

Counterparty credit

The other main issue raised by the order book relates to the creditworthiness of its users. Member firms should, of course, be financially sound. But whilst they are subject to detailed capital requirements, these are mainly aimed at ensuring an orderly run-down if the firm ceases trading. The requirements do not make it impossible for a firm to fail. More fundamentally, some firms are much bigger than others and many traders will be less concerned about having a large exposure to this kind of firm than they would be to a smaller firm.

At present, a market maker is obliged to trade with all-comers up to a specified level, but above that his freedom to negotiate trades means that he can limit his exposure to a firm. The order book, on the other hand, constrains that flexi-

bility. It would simply become unworkable if, for instance, each member wished to restrict the counterparties against whom their orders would execute or to set, unilaterally, limits on the size of trades they were willing to conduct with specified firms.

So a solution is needed, from both a commercial and regulatory viewpoint, that will allow the market to operate efficiently and with maximum safety. There are various ways the problem could be addressed.

At one end of the spectrum, the Exchange could take on the role of central counterparty to all trades, effectively assuming the role of guarantor and the central setter of any exposure limits it considered necessary for individual member firms — a solution that might also resolve the 'multiple fill' problem referred to earlier. At the other end of the spectrum, the Exchange could simply find a formula for setting certain order size parameters according to size of firm.

The difficulty in finding a satisfactory solution is partly one of cost: to act as guarantor requires substantial capital. In that sense, the cheapest solution is one which allows trading to gravitate to the players who are already strongly capitalised. At the time of writing, a final solution had yet to be agreed.

Sub-FTSE 100 shares

Beyond the current order book proposal, a further important issue to be considered concerns the future trading arrangements for the shares in more than two thousand UK companies that will not be traded on the order book. The Exchange may well decide to extend its order book very rapidly to the next two hundred and fifty companies. But beyond that, it may wish to maintain some form of market making.

> The idea of an exchange providing incentives ... for the provision of liquidity already occurs in some overseas markets

In that case, it will need to consider any adjustments to the present structure and, in particular, the case for any incentives for market makers. These might be needed to replace the market makers' relative loss of competitive advantage vis-a-vis other broker-dealers when stamp duty exemption is extended to all qualifying intermediaries later this year.

Any such arrangements will need to be discussed with both the SIB and the OFT. But the idea of an exchange providing incentives, such as lower charges, for the provision of liquidity in less liquid stocks is something that already occurs in a number of markets overseas.

An evolutionary process

Overall, the Stock Exchange has set off down an exciting and challenging path. It would be unrealistic to expect that the way forward will be other than evolutionary. Both the Exchange and the SIB recognise that there is going to be a learning curve, and that as we march up it some adaptations and adjustments to the system will be necessary.

But many, including the House of Commons Treasury Committee, consider the proposed changes to be of huge importance for the future health of the UK equity markets. The ultimate prizes are both a secondary market that will continue to underpin the primary markets on which much of UK industry depends and a further strengthening of London as an international equity trading centre.■

REGULATORY DEVELOPMENTS

Compiled by the Bank of England and the Securities and Investments Board

UK SUPERVISORY DEVELOPMENTS

Banking supervision

Are banks still special?

The Governor of the Bank of England, Eddie George, gave a speech on this subject at the IMF's 7th Central Banking Seminar on 29 September.

The Governor noted that although 'bank' refers to a range of very different institutions, they have some key distinguishing characteristics. Banks take unsecured deposits from the public at large; bank deposits are the predominant repository for the immediately liquid asset holdings of the economy and the main form of 'money'. They typically function with a mismatch between their highly liquid liabilities and their less liquid, non-marketable assets in the form of bank loans, which historically have provided a principal source of finance to the corporate and household sectors. These distinctive characteristics make banks particularly dependent upon public confidence. Any suggestion that a specific bank may not be in a position to meet its liabilities is likely to lead to the panic withdrawal of its deposits. This can precipitate a liquidity crisis or even insolvency as a result of forced realisation of illiquid assets. Runs of this kind can spread through contagion.

The Governor argued that although banks have increasingly diversified the products and services they offer, this has not fundamentally altered the 'banking' part of their balance sheets. The vast bulk of banks' liabilities remain in the form of unsecured, short term deposits and a high proportion of banks' assets continue to be illiquid loans. Banks remain at the heart of payments systems. Moreover, taking the United Kingdom as an example, the share of bank (and building society) deposits in households' liquid assets has declined only slowly. There has, however, been some change (albeit still fairly gradual) in banks' importance in providing finance: their share of all financial sector assets has fallen to some 55%, from nearly 70% a decade ago, reflecting disintermediation of large corporate financing, but not of that for smaller businesses or households.

The Governor said that the distinction between banking and non-banking financial functions has not been eroded. Life assurance and pension fund business is clearly different and has to be conducted on ring-fenced balance sheets, even when transacted by a banking group, reflecting the distinctive risks involved. A number of other types of institution which may appear to be bank-like do not, in fact, share all of the distinctive features of banks. For example, money market mutual funds do not make illiquid loans; non-bank finance companies do not offer capital certain, immediately available liabilities; and the free-standing US and Japanese securities houses hold only a small proportion of assets in illiquid form, still borrow a high proportion of their funding on secured terms and do not take deposits from the public at large.

The Governor concluded that banks continue to perform special economic functions, their liabilities and assets still have distinctive characteristics and that there is still a special public interest in banking. He noted that non-bank financial institutions and markets clearly perform economically important functions, which may be equally special in their own distinctive ways and there are a range of reasons for public oversight of these institutions and markets. But, the Governor said, he would be very cautious about extending last resort liquidity provision to financial institutions not engaged in banking activity and where the particular justification for it was not based upon the banks' distinctive functions and distinctive balance sheets. An unduly liberal interpretation of systemic risk would increase moral hazard and ultimately weaken the safety and soundness of the financial system as a whole.

Legal status of electronic money schemes

An article in the first issue of the Financial Stability Review (Autumn 1996) looked at electronic money schemes and the public policy issues to which they give rise. These schemes are still in the developmental stage in the United Kingdom and the question of whether they should be subject to specific regulations — and, if so, what form these regulations should take — is still under discussion. Whether or not a particular scheme is going to be covered by the Banking Act 1987 and Deposit Protection Fund as the law now stands depends on the particular features of the product. The Bank's current view is some electronic money schemes may be caught by the Act, whereas others will not.

Against this background, the Bank has been advising companies with proposals to set up electronic money schemes that they need to take account of this legal uncertainty in developing their products. Members of the public who are considering using an electronic money product, whether on a 'smart' card or PC, are advised to examine the terms and conditions of usage of the product carefully in order to establish their contractual rights.

Policy issues raised by electronic money are currently under discussion in a number of international fora, including the Group of Ten countries and the European Monetary Institute.

Credit derivatives

Many commentators are predicting a significant expansion in the market for credit derivatives — a relatively new range of financial products being pioneered by larger banks and investment firms. In November, the Bank issued a discussion paper on 'Developing a supervisory approach to credit derivatives' intended to initiate a wider debate on the appropriate risk management of these products and to invite comments on possible capital adequacy treatment. The paper sets out the current interim capital adequacy treatment for UK incorporated banks. The Bank has also invited comments on alternative approaches which would be consistent with the relevant European Directives and the Basle Accord, as well as on more radical solutions which might require the supervisory capital framework to be changed.

Credit derivatives are designed to allow market participants to transfer credit risk. The Bank's objective in developing a supervisory approach is to consider how best to match the capital treatment to the risks involved — the more effective credit derivative products are in transferring risk, the lower the capital requirements which may be set.

The issues raised by some forms of credit derivative are quite complex and the Bank has already consulted market practitioners, as well as other banking and securities regulators in Europe and the United States in an effort to develop a broadly consistent approach.

For further information contact: Bank of England Regulatory and Supervisory Policy Division (0171 601 5088)

Consultative notice on deductions from banks' capital

The Bank is considering comments received on the draft Policy Notice, sent to banks for consultation in December, on deductions from capital in respect of holdings in credit and financial institutions' capital instruments and in non-financial companies. Under current Bank policy, banks' physical holdings of credit institutions' and investment firms' capital instruments may only be held without deduction when a 'market maker's concession' has been granted

to banks who have demonstrated that they make markets in these instruments. Banks have argued that this policy, which dates back to 1986, now constrains their growing equities businesses. A number of amendments and clarifications were proposed in the consultative Notice, including that holdings taken in the trading book up to a certain limit could be held without deduction.

For further information contact: Bank of England Regulatory and Supervisory Policy Division (0171 601 3155).

Securities and investments regulation

Insider trading and derivatives: the SIB confirms conflict with its principles of conduct

On 12 December, the SIB issued advice confirming the circumstances in which its Principles do not allow firms to make a profit for themselves or their customers by trading in derivatives on the basis of inside information.

The main message of the advice is that, in order to comply with the SIB Principles, a firm should have internal controls to ensure that it does not use derivatives to enable a customer to buy or sell an indirect stake where the firm knows, or has reason to believe, that as a result of inside information the customer could not properly buy or sell an indirect stake on the open market.

The advice is partly based on the SIB's understanding of the standards set in the criminal law on insider dealing, which applies to individuals. In addition, it also explains that authorised firms are required under the Principles to meet a higher standard in some areas than may be imposed on individuals by the criminal law.

The SROs as front-line regulators have day-to-day responsibility for the enforcement of the Principles. Authorised firms are expected to observe the spirit, as well as the letter, of the Principles and to read the advice in the same vein. Should firms need further clarification, they should first seek guidance from their own regulator.

A copy of Guidance Release 4/96 is available from the SIB's Publications Unit (0171 638 1240) at a cost of £5.

Equity stock borrowing and repo

The SIB has proposed that no significant additional regulation needs to be introduced following the government's liberalisation of the present fiscal arrangements covering stock borrowing and repo activityin UK equities.

In advice to the Chancellor, 'The fiscal liberalisation of stock borrowing and repo in UK equities: regulatory recommendations' (published on 10 February), the SIB stressed the importance of the proper protection of customer assets, robust contractual arrangements and good practice in these transactions. The Economic Secretary announced on 7 February that the Government fully accepts the SIB's key recommendations and considers that the proposed light regulatory touch allied to proposed tax liberalisation in this area should enhance the competitive development of this market.

The SIB is working closely with other regulators, practitioners and the principal forum for the industry, the Stock Lending and Repo Committee, to ensure that adequate arrangements are in place and will issue guidance to front line regulatory bodies if it considers this necessary. It is also consulting with the Market Conduct Group to develop a cross-market approach to market abuse involving stock borrowing.

In respect of short selling, which may increase as a result of wider access to stock borrowing, the SIB considers that there may be value in a disclosure regime for such sales and it is undertaking further work to assess the practicalities and cost-benefits. To the extent that short selling may on occasion contribute to disorderly markets, it believes that this should be addressed by general measures — such as trading halts — rather than by attempting to establish specific controls on short selling. The SIB will, however, be consulting further with interested parties to determine whether there is any case for different arrangements in respect of short selling and stock borrowing in less liquid stocks.

The SIB's advice to the Chancellor was given following public consultation. Consultative paper 100, 'Stock borrowing and short selling: implications for the UK equity markets', was issued on 7 November.

Revision of AIM rules

The London Stock Exchange has introduced a number of new rules for its Alternative Investment Market ('AIM') following a review of the market after its first year. These provide for :

- New issuers to issue a public statement at least 10 days ahead of the date on which they seek to have their securities admitted to the market.
- New issuers to include in their admission document a statement that they have sufficient working capital for present requirements.
- Admission documents to list all those with interests of 3% or more in the company's capital.
- Issuers to seek shareholder approval for reverse takeovers and to re-apply for admission where such takeovers involve companies not already admitted to AIM or listed on the Exchange.
- Increased transparency by requiring risk trades to be published after 3 days rather than 5.
- Clarification of the circumstances in which the Exchange would take action against a Nominated Adviser.

The new market, which was launched in June 1995, currently trades the securities of more than 250 companies, with a market value of approximately £5 billion. Flotations on the AIM market have raised more than £900 million. The Unlisted Securities Market, which the AIM superseded, was officially closed on 31 December.

Morgan Grenfell

The Investment Management Regulatory Organisation (IMRO) announced on 20 December that it had finalised with Morgan Grenfell Asset Management Limited the basis for calculating compensation for investors in three of its European funds.

IMRO has been investigating irregularities in the three funds since August 1996, following actions by former fund manager, Peter Young, since dismissed by the company. The Morgan Grenfell European Growth Trust, Morgan Grenfell Europa Fund and Morgan Grenfell European Capital Growth Fund were all suspended on 2 September, following the discovery of irregularities in the funds relating to the level of investment in unquoted securities. Deutsche Bank AG, the parent company of Morgan Grenfell, purchased certain securities from the funds for £180 million and the funds resumed trading on 5 September.

Investors will be compensated for the difference between the investment return from their Morgan Grenfell fund and the investment return provided by a specially compiled index of comparable funds drawn from Micropal data.

All investors in the funds at any time between 1 August 1995 and 5 September 1996 will be considered for compensation. Morgan Grenfell has written to around 90,000 investors to inform them that they may be eligible, with the final total cost estimated to be in the region of £200 million.

Review of London Metal Exchange and the metals markets

On 19 December the SIB published its review of the London Metal Exchange, which was conducted at the request of the LME and with its full co-operation. The report draws on a global consultation exercise, launched last June following Sumitomo Corporation's disclosure that it had lost US$1.8 billion due to the alleged unauthorised trading activities of its employee, Mr Hamanaka.

The purpose of the review, which was led by David Pritchard, the SIB's Head of Markets and Exchanges, was to ensure that confidence in the metals markets was maintained and that the LME continued to meet the needs of its users and to satisfy statutory requirements as a recognised investment exchange. The review pinpointed a number of areas where the LME needs to strengthen and develop its regulatory structure to reflect changes in the market.

The report outlines a seven-point plan to enhance the standards of market integrity delivered by the LME. The LME has agreed to take appropriate action and an implementation timetable has been agreed.

The SIB's consultation exercise, involving market participants around the world, raised issues concerning warehousing arrangements and the transparency of inter-office trading and option prices. In addition, the SIB's own assessment of governance issues suggested that

changes were needed to make more clearly seperate the commercial and regulatory roles of the Exchange.

The SIB is also proposing a programme of work in conjunction with the SFA and the trade associations to improve customers' understanding of a number of trading practices, including the risks they run in relation to the non-segregation of their assets. In the light of its assessment of costs, benefits, risks and the consultation results, the SIB has rejected calls for it to impose changes on the practice of non-cash clearing.

'A Review of the London Metal Exchange: Conclusions and Recommendations' is available from the SIB Publications Unit (0171 638 1240) at a cost of £10. Also available is 'A Review of the Metals Markets: An Analysis of Responses to the SIB's Consultation Paper' at a cost of £20.

Commodity futures conference

On 25-26 November, the SIB hosted and co-chaired with the Commodity Futures Trading Commission of the USA, the Japanese Ministry of Trade and Industry and the Japanese Ministry of Agriculture, Forestry, and Fisheries, an international meeting of regulators of commodity futures markets in London.

The meeting was convened following last summer's events on the copper markets. These highlighted specific regulatory issues arising in connection with futures markets where the underlying asset is an internationally traded physically deliverable commodity, including issues concerning international regulatory co-operation, which needed to be addressed collectively.

Regulatory authorities from 17 jurisdictions participated in the meeting, which brought together regulators from emerging and developed markets who had not previously worked together. Matters discussed included contract design and specification, market surveillance and information-sharing. The conference culminated in the agreement of a forward work programme aimed at increasing the understanding of existing market practices and procedures in these areas and at developing standards of best practice. This should be completed by the next meeting, scheduled for Tokyo in the autumn of 1997.

The pensions mis-selling review

In November, the SIB issued new guidance aimed at speeding up the provision of redress to people wrongly sold personal pensions.

The SIB indicated that progress in the pensions review over the last two years had been unacceptably slow. This has been caused by the perceived need to obtain substantial volumes of data, case by case, from occupational schemes in order to quantify loss. Most schemes have found it impossible to cope with the number and detail of enquiries received from personal pension providers and intermediaries. The guidance is aimed at breaking this impasse.

The central objective of the new guidance is to help all sectors of the industry to complete reviews as quickly as possible, whilst ensuring a fair deal for investors. It sets out a straightforward way to proceed, including a much simplified approach to obtaining information.

The new approach, tested by consultants, has been shown to deliver broadly the same results as the original October 1994 guidance, with no systematic bias in favour of either investor or investment firm. The SIB believes that this should enable a significant acceleration of the review to take place.

Once firms have had time to assimilate the guidance, front line regulators will be determining with their firms realistic new target dates which will then be monitored. Firms failing to carry out their responsibilities must expect disciplinary action from their regulators.

Copies of the guidance, the statement of policy (which was issued at the same time, following extensive consultation with the Personal Investment Authority) and the consultants' reports can be purchased from the SIB Publications Unit.

IMRO fines five firms for pension transfers

At the beginning of January, Lloyds Bank was fined £325,000 for breaches of IMRO's Rules and the SIB Statement of Principles relating to its pension transfer business. The breaches occurred between April1988 and June 1993.

Lloyds agreed to a settlement of disciplinary proceedings brought on the grounds that: it did not obtain, or have the systems in place to obtain, all the relevant facts about the personal and financial circumstances of its customers that it needed to advise them properly about pension transfers. Lloyds also agreed that it did not provide certain customers with all the information needed to enable them to make a balanced and informed decision on whether to carry out a pension transfer.

Lloyds has already offered redress to some customers. The review of Lloyds pension transfer cases is well advanced and will be substantially completed by 31 December 1997.

Four other firms (all independent financial advisers) have already been fined by IMRO (in mid-October) for rules breaches in respect of pension transfers. The firms concerned were Alexander Consulting Group Limited — £40,000; Godwins Limited — £200,000; The Heath Consulting Company Limited — £70,000; and Willis Corroon Financial Planning Limited — £95,000.

Foreign exchange dealing services

The SIB has followed up its recent Guidance on rolling spot foreign exchange contracts. Firms offering dealing services in such contracts now require authorisation under the Financial Services Act. The SFA is dealing with a number of applications from firms already established in the United Kingdom, and regulators in other EU countries are also considering the fitness and properness of applicants in the field of 'retail forex', who are seeking European authorisation, providing a 'passport' back into the United Kingdom.

One such firm, Scandex, a Danish registered company, had its application refused by the Danish regulators. At the same time, the SIB brought UK legal proceedings to injunct Scandex and its principal, Mr Bartholomew-White, in relation to allegations of conducting unauthorised business from Denmark into the United Kingdom, cold calling UK clients and making misleading statements. The writ also seeks restitution of clients' funds by Scandex.

The case has produced unusual orders by the English Court for the company to repatriate investors' funds to the United Kingdom and for Mr Bartholomew-White to be cross-examined in the interlocutory proceedings about the whereabouts of some £1.5 million of investors' assets.

The case has demonstrated the very practical value of the close co-operation between the SIB and the Danish regulators. It has also encouraged the SIB to begin work with its counterparts in Europe to discuss national approaches to assessing fitness and properness, and explore the scope for further agreed standards in this area.

EU SUPERVISORY DEVELOPMENTS

Amendment to the Capital Adequacy Directive

As reported in the Autumn Issue of the Financial Stability Review, the European Commission has held a number of meetings to discuss a proposed draft amending directive to amend the Capital Adequacy Directive to incorporate two elements of the Basle Supervisors' Committee's market risk amendments to the 1988 accord. The main proposals relate to the scope to allow supervisors to permit firms to use Value At Risk (VAR) models to calculate capital requirements for market risk and the introduction of a framework for allocating capital to cover commodities risk.

Discussions have focused on the extent to which the VAR criteria should be specified in detail in the Capital Adequacy Directive, the ease with which it could be amended in the light of developments in banks' and investment firms' risk measurement techniques; and on the degree of detail required on commodities risk — where the United Kingdom is arguing for an approach which sets different coefficients for each category of commodity to reflect varying price volatilities between classes of commodities.

At the time of going to press, the draft amending directive was still under consideration by Directorate General XV of the European Commission and had not been formally adopted by the Commission for submission to the Council of Ministers.

DEVELOPMENTS IN OTHER INTERNATIONAL FORA

Basle Supervisors' Committee

Interest rate risk management

The Basle Committee on Banking Supervision issued a consultative paper on 22 January entitled 'Principles for the management of interest rate risk'. It sets out twelve principles of interest rate risk management, falling into five broad categories. The paper notes the importance of the board in setting the strategy, policies and procedures and of senior management in managing, controlling and limiting the risks via an appropriate independent risk management function. It also discusses the importance of clear and appropriate policies and adequate procedures, controls and risk assessment for new products.

The paper goes on to consider the need for comprehensive, timely and accurate exposure monitoring systems, where the underlying assumptions are clearly understood by management and vulnerability to loss is tested under stress conditions. Finally, the paper points out that G10 supervisors will seek information from banks to gauge their exposure to interest rate risk, eg by maturity and currency.

The Bank believes the proposals represent a sound basis for discussing the principles of managing and supervising interest rate risk.

The paper remains a consultative proposal at this stage and comments from banks and other interested parties are invited, to be received by the Bank (directed to Regulatory and Supervisory Policy Division) in advance of 31 March 1997.

For further information contact: the Bank of England's Regulatory and Supervisory Policy Division (0171 601 3853 or 0171 601 4154).

Basle market risk package

In January 1996, the Basle Committee on Banking Supervision released the amendment to the Basle Capital Accord (1988) to apply capital charges to banks' market risks. Banks will be able to calculate capital charges according to either a standard approach similar to the CAD calculations currently made by UK-incorporated banks, or a method based on internal value-at-risk models.

Subsequent work by the Committee based on the actual portfolios of a number of major banks indicate that the internal models approach will, as intended, generally produce a lower capital charge than the standardised approach, even after the application of the three-times multiplication factor to the value-at-risk calculations. The internal models approach does, then, appear to encourage risk diversification and provide incentives to develop sound internal models. Consequently, in December the Committee announced that the proposed quantitative parameters set out in the January 1996 paper will be retained, including the application of the 'three-times' multiplication factor.

While the modelling of specific risk, and indeed credit risk more generally, is clearly evolving, the Committee is not yet convinced that it has evolved sufficiently to capture all elements of specific risk in an empirically-proven manner. For the time being, a floor on banks' specific risk capital charges will be retained, at 50% of the charge calculated under the standard approach. However, the Committee is ready to review the situation promptly if and when the industry can provide convincing evidence that specific risk is being modelled adequately. This work may also have a bearing on the Bank's work on credit derivatives, where one of the key issues in framing capital requirements is banks' ability to model credit default risk (see section on credit derivatives on page 75). The Bank will communicate the responses to its concepts paper on credit derivatives to the Basle Committee.

'Amendment to the Capital Accord to incorporate market risks', Basle Committee on Banking Supervision, January 1996.

Regulatory co-operation

Following the G7 summit in Lyon last year, international supervisory authorities have been continuing their work on effective means to enhance co-operation in the super-

vision of major financial conglomerates, both in emergencies and on an on-going basis. The Joint Forum of banking, securities and insurance supervisors has discussed this subject on the basis of detailed work by a Task Force which has studied how major conglomerates operate in practice, coupled with a survey of individual supervisors' powers and approaches to supervision. It is hoped that this will help to identify the core supervisory needs for information in these circumstances. In addition, following a review of medium term strategic objectives, the Basle Committee has decided to re-focus its work to examine risk management and disclosure issues in more detail, emphasising the importance of both as a supplement to more traditional forms of regulation.

REGULATORY DEVELOPMENTS IN OTHER COUNTRIES

United States

The OCC allows more flexible organisation of non-banking business

On 20 November, the Comptroller of the Currency, Eugene Ludwig, ruled that national banks would be allowed to conduct non-banking operations in main (or lead) bank subsidiaries, rather than having to conduct them in separate affiliates of the bank holding company. The rule established the procedure for the Comptroller to assess banks' applications on a case-by-case basis for any activity which is part of or incidental to the business of banking, or otherwise authorised by statute. The OCC regulates over 2,800 national banks in the United States and has long favoured an operating subsidiary approach to the conduct of non-banking business.

Federal Reserve relaxes section 20 restrictions

The Federal Reserve Board has relaxed certain restrictions on the operations of Section 20 affiliates of banks, raising the limit on the proportion of revenue that such affiliates can earn from "bank-ineligible" securities business and eliminating certain firewalls between a bank and its affiliate. A number of further changes have now been proposed to eliminate most of the remaining firewalls and to try to reflect the change in emphasis from a regulatory to a risk-based approach. These include allowing Section 20 firms to secure credit enhancements and guarantees from the bank, for example in underwriting an equity issue and allowing banks to make collateralised loans to Section 20 firms.

For further information on these and other changes in the US supervisory framework, see Peter Brierley's article 'Beyond Glass-Steagall: regulatory change in the United States' (pages 47-53).

Fed tightens audit requirements for foreign banks

On 12 November, the Federal Reserve Board issued mandatory guidelines to implement special audit procedures on US branches and agencies of foreign banks, in situations where significant internal control weaknesses are detected. The trigger event will be when both the O (operational controls) rating, and the composite ROCA (risk management, operational controls, compliance and asset quality) rating, are 3 or worse. State banking departments may impose further requirements and the New York State Banking Department has proposed mandatory external audits of foreign bank branches and agencies, regardless of regulatory rating.

Canada

Canadian task force membership finalised

The White Paper published in June 1996, concerning this year's review of the Canadian Bank Act, stated that a Task Force would be established to look at all aspects of the Act and asked to submit a report to the Minister of Finance by September 1998. It was intended that this body would be in place by the autumn of last year, but that proved to be too optimistic and the personnel have only recently been appointed. The major question that the Task Force will be looking at is whether banks should be allowed to sell insurance through their branches and enter the leasing market.

France

Credit Lyonnais

Following the approval in October 1996 of Ffr3.9bn of emergency funding to cover a shortfall in Crédit Lyonnais' interim results, the French government is preparing a final rescue package. The total sum of funds required to cover asset disposal losses and recapitalisation ahead of privatisation is now rumoured to be in the region of Ffr30 billion, exceeding the estimated Ffr16 billion previously reported. The plan, to be presented to the European Commission by end-February, is unlikely to be approved before the bank's 1996 results are published on 20 March.

Crédit Foncier de France

As expected, the state-owned Caisse des Dépôts et Consignations (CDC) bought over 90% of Crédit Foncier de France (CFF) shares in December of last year. The government has stated its intention to transfer ownership to a new state-owned body, the Caisse Nationale de Crédit Foncier, while much of CFF's business is to be taken over by a private company, Crédit Immobilier de France. However, employees and politicians have lobbied the government to allow CFF to continue as an on-going concern, rather than to commit it to the planned long-term (10 year) cession of its activities. In January 1997, protests culminated in a siege of the headquarters of CFF by employees which lasted until early February.

De-regulation in the banking sector

Prospects for de-regulation in the banking sector appear to be improving. In July 1996, M. Trichet, Governor of the Banque de France and President of the Commission Bancaire, called for the removal of monopolies on certain products and distortions linked to the legal status of certain market players. The proposed demutualisation of the Caisses d'Epargne and a recent report by the Senate finance committee suggesting changes to working practices (including the removal of restrictions on paying interest on current accounts), offer further support for de-regulation and structural change.

Italy

Restructuring of Banco di Napoli

A joint bid for the Treasury's 60% stake in Banco di Napoli by Banca Nazionale del Lavoro (BNL), the 85% State owned bank and Instituto Nazionale delle Assicurazione (INA), the insurance company, has been accepted. The sale will be finalised in March. As part of the deal, some Lira 12bn of bad loans are to be transferred into a specially created debt vehicle, Reviban. BNL/INA reportedly offered Lira 60bn ($39m) for the stake, but are expected to have to inject a further Lira 1-2trn to cover Napoli's 1996 losses. BNL and INA propose to set up a holding company (in which INA will have a 51% stake and BNL the remaining 49% stake) to own the 60% stake in Napoli. In a related deal, BNL and INA announced just before Christmas that they will exchange control of their insurance and banking units: INA has agreed to buy BNL Vita, BNL's insurance company and BNL will purchase INA Banca. The Treasury has said that its remaining 40% stake in Napoli will be sold as soon as possible. The European Commission is still examining the deal.

Australia

Wallis Inquiry into the financial system

The Wallis Inquiry was set up after the Coalition government came to power with a remit to focus on two general issues: the structure of regulation, and competition within the financial system. It published an interim report in November 1996 which was carefully drafted to avoid any indication of preferred solutions. Final recommendations will be made to the Treasurer at the end of March 1997.

The interim report discusses the approach to a wide range of financial regulatory issues, including consumer protection and regulatory co-ordination. It focuses on the structure of prudential regulation rather than the content of financial supervision. The Inquiry suggests four possible models for a prudential framework, including the possibility of no change.

The three other options involve the establishment of a single national regulator of deposit taking institutions.

One possibility is to incorporate this single regulator with the regulators of insurance companies and superannuation funds. Another is to use the single regulator to cover prudential regulation of any institution or activities considered to constitute a systemic risk or to require 'safe haven' status. The report also discusses the possibility of separating the monetary and financial stability departments within the Reserve Bank. The paper debates the pros and cons of each of these different arrangements, but does not give any indication of which approach the Inquiry is likely to recommend.

The report also considers the competitive environment, focusing on the financial services sector and restrictions on the entry of foreign financial institutions. At present, laws and arrangements governing mergers and acquisitions are complex. However, current policy dictates that mergers between any of the four major banks and the two major life insurance companies would not be allowed. There are also restrictions on the entry and operation of foreign banks. Currently the Treasurer has power of approval when a foreign investor wishes to acquire a substantial interest in an Australian institution. Government policy in recent years has specified that foreign owned banks will not be precluded from bidding for smaller banks (eg Bank of Scotland acquired the Bank of Western Australia in mid-1995). However, the policy of the previous government was that it would not approve the foreign takeover of any of the four major banks. The Inquiry will consider whether these policies should remain in place. The interim report gives little indication of the likely result.■