

Regulating the New Financial Markets

Richard Dale

1. Introduction

Financial markets have been transformed over the past two decades by three key developments. Firstly, the dismantling of barriers to international capital flows and the process of globalisation have resulted in a massively increased volume of cross-border financial transactions. Secondly, the functional integration of hitherto discrete areas of financial activity has led to the emergence of financial conglomerates combining traditional banking with securities operations and other non-bank business. Finally, financial innovation has produced a vast new market in derivative products that simply did not exist 15 years ago.

These developments have no doubt raised the efficiency of financial markets. But they have also greatly complicated the task of regulatory authorities by increasing the potential for financial instability. The new global markets offer fresh channels for the transmission of financial shocks – both across borders and across market sectors. Furthermore, given the speed at which today's markets react to adverse news, the response time available to regulators in an emergency is drastically reduced. Finally, because financial institutions can adjust their risk exposures so easily, it is no longer possible for market participants to assess the risk characteristics of those with whom they deal – a problem of opacity that undermines the capacity of financial institutions to police each other.

This paper assesses the regulatory implications of recent financial market developments. The next section considers the underlying case for regulation of financial services; Sections 3 and 4 examine the new market environment facing regulators, drawing on the lessons of the Barings collapse; Section 5 assesses the regulatory response to recent financial market trends; and the final section provides a summary and conclusion.

2. The Rationale for Regulation

The case for regulating financial institutions can be made on three broad grounds. First, there is the consumer protection argument. This is based on the view that depositors and investors cannot be expected to assess the riskiness of financial institutions they place their money with, nor to monitor effectively the standard of service provided by such institutions. The consumer protection rationale gives rise to three categories of regulation: first, compensation schemes designed to reimburse all or part of losses suffered through the insolvency of financial institutions; secondly, regulation in the form of capital adequacy requirements and other rules aimed at preventing insolvency; and, finally, conduct of business or market practice rules intended to ensure that users of financial services are treated fairly.

The consumer protection rationale for regulation is closely related to another concern. If depositors or investors are to be reimbursed for losses incurred through the insolvency

of financial institutions then there will be little or no incentive to exercise care in the choice of depository or investment institutions. This in turn means that risky institutions will be able to attract business with the same ease and on the same terms as more prudently run firms, thereby undermining financial market discipline and increasing the incidence of insolvencies. The ensuing losses must then be borne by the deposit insurance scheme, investor protection fund, or ultimately, the taxpayer. Prudential constraints on financial institutions' risk-taking then become necessary in order to limit such losses and to offset the regulatory incentives in favour of excessive risk-taking. This 'moral hazard' argument is the one rationale for regulating financial institutions that commands general support in the academic literature.

Among supervisors themselves the rationale for financial regulation that gives most cause for concern is systemic risk – that is, the risk that the failure of one or more troubled financial institutions could trigger a contagious collapse of otherwise healthy firms. It is, above all, their alleged susceptibility to contagious disturbances that distinguishes financial institutions from non-financial firms. In the words of a member of the Board of Governors of the Federal Reserve System:

'It is systematic risk that fails to be controlled and stopped at the inception that is a nightmare condition ... The only analogy that I can think of for the failure of a major international institution of great size is a meltdown of a nuclear generating plant like Chernobyl. The ramifications of that kind of failure are so broad and happened with such lightning speed that you cannot after the fact control them. It runs the risk of bringing down other banks, corporations, disrupting markets, bringing down investment banks along with it ... We are talking about the failure that could disrupt the whole system.'¹

Increasingly, the danger of systemic disturbances and contagious disorders is invoked by regulators as the main justification for regulating financial markets. Yet among academic commentators there is an ongoing debate as to whether financial contagion is a real-world problem demanding remedial action in the form of preventive regulation (for example, capital adequacy requirements) and/or an official safety net (lender of last resort and deposit insurance). The more conventional view is expressed in the following remarks by the United States economist, Martin Feldstein:

'The banking system as a whole is a "public good" that benefits the nation over and above the profits that it earns for the banks' shareholders. Systemic risks to the banking system are risks for the nation as a whole. Although the management and shareholders of individual institutions are, of course, eager to protect the solvency of their own institutions, they do not adequately take into account the adverse effects to the nation of systemic failure. Banks left to themselves will accept more risk than is optimal from a systemic point of view. That is the basic case for government regulation of banking activity and the establishment of capital requirements.'²

However, other academic commentators challenge this view of the world. George Benston and George Kaufman argue that the US banking system is inherently stable, that contagion is not a problem and that the only justification for capital adequacy regulation is the need to limit losses to taxpayers through government-provided deposit insurance. The following quotations amplify the Benston-Kaufman rejection of systemic

1. LaWare (1991), p. 34.

2. Feldstein (1991), p. 15.

risk as a basis for financial market regulation:

‘We do not view banks and the banking system as inherently fragile ... Nor ... do we find that bank failures are any more contagious or any more costly than failures in other important industries ... The evidence shows that runs were not a major cause of bank failures ... depositors appear capable of differentiating between solvent and insolvent banks, just as they can differentiate between tampered and untampered drug and soft drinks products, and dangerous and safer modes of transportation ... the lender of last resort should provide liquidity to the banking system as a whole through open market operations (macroliquidity) rather than directly to individual banks through the discount window (microliquidity) ... banking appears to be no more unstable than most other industries, whose failure rate is no less than that of banks ... The cost of individual bank failures is relatively small and not greatly different from the failure of any non-bank firm of comparable importance in its community ... Government should be no more concerned with the failure of individual banks than with the failure of any other individual firm in any industry.’³

The Benston-Kaufman belief in the robustness of the financial system and their rejection of the need for official safeguards against systemic risk, runs counter to regulatory practice throughout the industrialised world. In the words of Mr Alan Greenspan, Chairman of the United States Federal Reserve Board, ‘there will always exist a remote possibility of a chain reaction, a cascading sequence of defaults that will culminate in financial implosion, if it is allowed to proceed unchecked’.⁴ It is the fear of such an implosion, as well as lesser contagious disorders, that has shaped recent international regulatory initiatives in banking, securities and derivatives markets. It is also the basis for the lender of last resort function as exercised in the United Kingdom and elsewhere.⁵

These, then, are the main considerations behind the regulation of financial institutions: consumer protection, moral hazard (a consequence of consumer protection) and systemic risk. In addition it should be noted that a further major regulatory objective is to achieve competitive equality – between financial institutions from different countries, between functionally distinct financial firms (banks, securities firms and insurance companies) that carry on the same kinds of business, and between rival financial centres. Concerns about competitive equality do not provide an independent justification for financial regulation but they do often provide an important impetus to international regulatory co-ordination initiatives. For instance, the European financial market directives have been framed with the explicit objective of achieving a ‘level playing field’, and the original motivation behind the Basle Accord on minimum capital standards was the perceived need to avoid competitive distortions associated with uneven national capital requirements.

The three main justifications for financial regulation described above apply in different ways to different segments of the financial services industry – that is, to banks, securities firms and insurance companies. The basis for the regulation of each of these segments of the financial services industry is considered below.

3. Benston and Kaufman (1995), pp. 211, 227, 233-235.

4. Greenspan (1996), p. 8.

5. Dale (1995b), pp. 326-333.

Banks are subject to deposit insurance and other forms of consumer protection, in part because banks' balance sheets are opaque and depositors are therefore not in a position to assess the riskiness of their deposits. Depositor protection in turn gives rise to moral hazard. But the case for bank regulation also rests heavily on systemic risk – that is, the alleged potential for destructive bank runs that can endanger not only individual institutions but the stability of the banking system as a whole. According to this view, bank runs are caused by depositors seeking to withdraw their funds in response to the fear of bank asset losses that could lead to insolvency. Given the nature of the deposit contract (that is, a fixed nominal claim) those who run first can expect to be repaid in full, while those who delay withdrawals risk losing some or all of their deposit balances. Therefore, depositors have a (rational) propensity to run at the first sign of trouble.

The more recent academic literature does not rely on any loss in the value of a bank's underlying assets to explain the occurrence of bank runs.⁶ The focus instead is on a bank's transformation services – specifically the conversion of illiquid assets (bank loans) into liquid claims (bank deposits) – and the fact that a bank's loan portfolio is worth significantly less in liquidation than on a going concern basis. All that is required to make a run possible – and rational – is that the liquidation value of the loan portfolio is less than the value of the liquid deposits. This approach explains how runs can occur even in the case of healthy banks, since the victim institution will be forced to dispose of its assets at liquidation prices, thereby threatening insolvency.

For investment firms the case for official regulation is much less clear.⁷ The traditional approach has been to focus primarily on the risk to investors. However, investment firms can be (and often are) required to segregate investors' cash and securities in special accounts, so that in the event of a firm's insolvency its clients' assets are protected from the claims of general creditors. If that is done, it is difficult to see why additional protective measures are required in the form of capital adequacy requirements. The investor protection argument for regulatory controls becomes even less persuasive if investors also enjoy the benefits of an investor compensation scheme.

There is a second rationale for regulating investment firms, based on the need to reassure counterparties, including banks and other creditors, who might otherwise be reluctant to deal with such firms. Settlement procedures have an important role here because if settlement is on a delivery versus payment (DVP) basis, counterparty risk and associated regulatory concerns can be much reduced. Beyond this, it is worth pointing out that investment firms are well placed – because of their liquid assets – to arrange secured financing which does not give rise to full counterparty risk exposure, and that in the absence of capital adequacy requirements this is no doubt how most of their borrowing would be arranged. Finally, concerns about counterparty risk do not provide a strong case for *official* regulation. If investment firms perceive it to be in their interest to reassure counterparties about their financial strength, they will presumably find means of doing so. Indeed, this has been the impetus behind the self-regulation of its member firms by the New York Stock Exchange since well before the US Securities and Exchange Commission was established in 1934. Credit rating agencies may also fulfil

6. See Diamond and Dybvig (1983, 1986).

7. See Dale (1994), pp. 394-401 (Part I) and pp. 464-473 (Part II).

a self-regulatory function, as they do in the case of unregulated US holding companies that issue debt to fund their securities subsidiaries.

The third and most important argument for the regulation of investment firms is founded on the view that the default of unregulated investment firms could cause systemic problems. Official concerns over the potential for systemic disturbances were, for instance, reflected in a recent OECD study of risks in securities markets, which noted that ‘the extreme systemic threat arising from a collapse of securities prices, is that default by one or more large securities dealers will lead to further defaults and that the failures will extend into the core of the banking system and cause a breakdown in the flow of payments in settlement of financial transactions throughout the world’.⁸

This proposition, suggesting as it does that the default of an investment firm may involve social costs equivalent to the collapse of a bank, deserves careful scrutiny. The assets of a non-bank investment firm consist largely of marketable securities and there will therefore be little difference between their value on a going concern basis and in liquidation, in marked contrast to banking assets – which are worth considerably less in liquidation. This means that a troubled investment firm will generally be able to wind down its business in an orderly manner, meeting its obligations by prompt asset disposals at close to book value. On the liabilities side too, investment firms are generally less vulnerable than banks, because much of their funding is secured and in any case cannot be immediately withdrawn, as can bank sight deposits. To the extent that funding is curtailed, an investment firm will generally be able to contract its way out of trouble. In short, investment firms are much less vulnerable to contagious liquidity and solvency crises than are banks.

The real problem is not the vulnerability of investment firms, but the vulnerability of banks within a financial market regime characterised by increasing integration of banking and securities business. Where banks themselves undertake securities business, or belong to financial groups that include an investment firm, the solvency of the bank is inextricably linked to its securities operations. This is obviously the case if the bank itself engages in securities activities, but it is also true if it does so at one remove through a related investment firm, since it is inconceivable that the related entity could default without irreparably damaging the credit standing of the bank.

The evolution of mixed banking and securities businesses may therefore create a situation in which the heavy social costs associated with bank failures are carried over into the securities markets. Arguably, it is the mixing of banking and securities business within banking groups, rather than the special characteristics of investment firms, that provides a rationale for the regulation of the latter.

The economic rationale for the regulation of insurance companies is based on the fact that it is costly for consumers to properly assess an insurer’s financial strength in relation to its prices and quality of service.⁹ In addition insurers may increase their risk after policyholders have purchased a policy and paid premiums. Therefore, in the absence of regulation, imperfect consumer information and agency problems may result in a level

8. OECD (1991), p. 15.

9. See, for instance, Klein (1955).

of insolvencies exceeding the social optimum. Accordingly solvency regulation, in the form of requirements relating to capital resources, asset quality and asset-liability matching, are intended to limit insolvency risk in accordance with society's preference for safety.

On the other hand insurance companies are not generally regarded as systematically sensitive since their liabilities are relatively long-term and not susceptible to runs (in contrast to banks). Even so, if insurance companies are affiliated to banks it is quite possible that difficulties originating with the insurance operations could, through reputational damage, have an adverse impact on the related bank entity. Therefore, as with securities firms, there may be a case based on systemic risk for regulating insurance businesses linked to banks.

3. The New Market Environment

Within the past two decades international financial markets have been transformed by three key developments: globalisation of the financial services industry; functional integration of banking and securities business; and financial innovation, particularly in the derivative products area. Each of these developments poses major problems for financial market regulators whose responsibilities are typically segmented by industry classification (for example, banking, securities, insurance) as well as by national boundaries. This section considers the changing shape and structure of international financial markets, and the need to adapt traditional regulatory mechanisms to accommodate the explosion in cross-border financial activity conducted by multinational financial conglomerates.

The globalisation of banking markets has been proceeding apace since the 1960s and has continued to gather momentum since 1980.¹⁰ For instance, at the end of 1994 the stock of cross-border bank assets was more than 4^{1/2} times its level of 15 years earlier, while measured as a fraction of the combined GDP of OECD countries, these assets have risen from 20 per cent in 1980 to around 35 per cent in 1994.

In securities markets the process of globalisation has been more recent but nevertheless spectacular. The extent of globalisation is reflected in the growth of cross-border and cross-exchange securities transactions; the number of foreign listings; and the emergence of multinational securities firms servicing this business from offices spread across the world. Between 1980 and 1994 cross-border securities transactions in industrial countries expanded from less than 10 per cent of GDP to well above 100 per cent of GDP. Within the equity sector, cross-exchange and cross-border transactions have increased rapidly as a percentage of world equity turnover to the point where one in four stock market trades conducted world-wide involves either a foreign security or a foreign counterparty. Parallel trends can be seen in the issuance of international bonds and equities (quadrupling between 1985 and 1994), the volume of global foreign exchange turnover (tripling between 1988 and 1993) and in securities settlements through the two major Eurobond clearing organisations, Euroclear and Cedel (expanding six-fold between 1988 and 1993).

10. On the globalisation issue, see Grundfest (1990).

There are several dimensions to the globalisation of securities business. The most traditional form is the purchase of foreign securities on the home exchange of the issuer or the issuance of securities in a domestic market by a foreign entity (examples of cross-border transactions). Closer integration occurs where a security is issued in its domestic market but subsequently listed on one or more foreign markets or where a security issued and listed on one market is traded in another (a cross-exchange transaction). Finally, the closest integration of all occurs where securities (for example, global bonds or international equity issues) are distributed internationally at issue and specifically designed to be traded in more than one market.

An analysis of the reasons for globalisation of financial markets is beyond the scope of this study. However, a variety of factors have clearly played a part in the process, including the phased abolition of exchange controls, improved access to information about foreign securities due to the revolution in information technology, and greater appreciation by institutional investors (who increasingly dominate securities markets) of the benefits of portfolio diversification. But whatever the precise explanation for the globalisation trend, the indications are that it is set to continue.

Another key development in international financial markets is the increasing tendency for banking and securities business to be combined within financial conglomerates, thereby eroding the traditional distinction between commercial and investment banking.¹¹ To an important extent the fusion of these two types of business is due to deregulation initiatives in major financial centres. In London, the rules of the Stock Exchange were amended in 1986 to allow acquisition of member firms by outsiders, including banks. In a one-step change banking and securities businesses were combined, thereby ending the separation of these activities which had been a feature of the UK financial services industry for some 300 years. In the United States the Glass-Steagall Act of 1933 still formally separates banking from securities businesses, but through liberal interpretations of this statute the US regulatory authorities have in recent years permitted the US banks to develop significant securities operations through special-purpose affiliates. Furthermore, there is a widespread consensus within the United States that Glass-Steagall should be repealed and moves are afoot within Congress to enact the necessary legislation. In Japan, too, the tight restrictions that were imposed on banks' securities activities after World War II have been gradually loosened. In particular, the Financial System Reform Law that came into effect in 1993 allowed commercial banks and securities firms to expand into each others' business territory by establishing separate subsidiaries. Finally, Brussels has followed the universal banking model in establishing a common regulatory framework for the single European financial market, thereby freely permitting the mixing of banking and securities business across the European Union (EU).

The above deregulation initiatives, coupled with the economies of scope that financial institutions evidently believe can be secured from combining banking and securities business, have given considerable impetus to the proliferation of financial conglomerates.

11. For a full analysis of the integration of banking and securities business, see Dale (1992).

In the words of Mr Andrew Large, Chairman of the United Kingdom Securities and Investments Board:

'... over the past 5-10 years, the institutional deregulation initiatives in different countries have combined with huge advances in computing power and communications technology, to create a totally new breed of financial intermediary. [They] have embraced the theory of financial risk management which applies portfolio theory to the range of risks associated with the securities business ... The key characteristic of this approach is that it seeks out the common elements of risk wherever they may lie in a portfolio and manages them centrally. These firms no longer respect the traditional boundaries between markets or the old institutional boundaries between banking, securities and insurance. They are in the risk-management business pure and simple, and they operate on a large scale and on a truly global basis.'¹²

As with globalisation, the indications are that the erosion of traditional distinctions between banking and securities business is set to continue – if only because deregulation in this area still has some considerable way to go in both the United States and Japan.

Finally, modern financial markets are characterised by extraordinarily rapid changes due to financial innovation.¹³ One of the most important facilitating factors here is the revolution in information technology and the associated dramatic fall in computing costs (Table 1).

**Table 1: United States Department of Commerce
Computer Price Deflator**
1990 = 1,000

1960	125,000
1970	19,000
1980	3,620
1990	1,000

Source: Herring and Litan (1994), p. 14.

The ease and cheapness of gathering, processing and disseminating information has encouraged financial innovation in a number of areas, including the development of screen-based trading systems, the conversion of cashflows from specific assets into marketable securities ('securitisation') and, above all, the proliferation of derivative products (futures, options, swaps, forward rate agreements and related hedging instruments). Whereas in the mid 1980s only the United States and a handful of other countries had futures and options exchanges, by the early 1990s nearly all OECD countries – not to mention several emerging markets – had established exchanges which at a minimum traded contracts on money market interest rates, bonds and equity indices.

There are some signs that the hectic pace of financial innovation may be slackening, but innovative developments over the past fifteen years or so have already transformed the nature of global financial markets in a manner that poses a formidable challenge to regulators.

12. Large (1994), p. 1.

13. See, for instance, Miller (1986).

4. Regulatory Implications

4.1 Global Markets

The globalisation of banking and securities markets adds a new dimension to the regulatory problem. Globalisation in this context means three things: the cross-border delivery of financial services to foreign residents; the penetration of foreign financial markets by branches and subsidiaries of multinational institutions; and transactions between banks and investment firms from different countries that give rise to inter-jurisdictional counterparty risk.

Banking and securities regulators are presented with a number of formidable difficulties associated with globalisation. Systemic risk may be increased through contagious financial disorders originating in poorly regulated financial centres; depositors, investors and counterparties may be exposed to foreign jurisdiction risks which they are not in a position to monitor or control; and the co-existence of uneven national regulations and global markets may severely distort competition between financial institutions.

There are several alternative approaches to dealing with these ‘geographic interface’ problems. One possibility would be to allow, and perhaps even encourage, regulatory competition between rival financial centres in the hope that regulatory standards would eventually converge around some socially optimum level. It would still be necessary to decide whose rules were to apply to which institutions. If host country rules applied, then foreign banks and investment firms would have to be subject to mandatory incorporation in the host country (since a branch, having no separate legal identity, stands or falls with its parent). Under such a regime there would be regulatory equality within each jurisdiction, but competition between financial centres would be subject to regulatory distortions. Furthermore, cross-border provision of financial services could affect competition within domestic markets.

Alternatively, while retaining the regulatory competition model, it might be considered preferable to apply home country regulation on a consolidated basis to both branches and subsidiaries operating in other countries. Here, all institutions from a particular country would be subject to the same regulatory standards wherever they operated, and the competitive distortion associated with different regulating regimes would affect not financial centres but institutions of differing national origin.

The major weaknesses of the regulatory competition approach are that it does not deal with the danger of cross-border financial contagion, it may confuse depositors, counterparties and investors dealing with multifarious regulatory regimes and (perhaps most importantly from a political standpoint) it leaves open the potential for serious competitive distortions associated with uneven national regulation.

A quite different approach to globalisation is to impose minimum standards of prudential regulation through multilateral agreement. The main difficulty here is to determine appropriate limits to the harmonisation process. Recent multilateral initiatives in this area are considered in Section 5 below.

4.2 Regulating Financial Conglomerates

The fusion of banking, securities and other financial business also raises important regulatory issues.¹⁴ Three closely related problems need to be addressed here: firstly, what is the most appropriate corporate structure for mixed-activity financial firms; secondly, should the supervisory regime be institutional (a single agency responsible for the entire business) or functional (different agencies responsible for specific activities); and, finally, should the various businesses within a conglomerate (banking, securities, insurance, etc) be consolidated for supervisory purposes and, if so, how?

So far as corporate structure is concerned there are various alternatives. At one end of the spectrum there is the separation model which prohibits ownership links between, for instance, banks and securities firms. At the other end there is the universal banking model which allows non-banking financial business to be conducted within the bank entity itself. Between these extremes banks may be required to conduct non-banking financial business through separately incorporated subsidiaries. Alternatively, a financial holding company structure may be mandated, in which banks and non-bank financial activities are conducted by specialised subsidiaries of the holding company. Where the separate subsidiary or holding company structure is chosen, there is a further question as to the appropriate business relationship between the bank entity and its non-bank subsidiaries or affiliates. Should there be 'funding firewalls' preventing the bank from lending to its related businesses? And should the related businesses be able to trade under the same name and out of the same offices as the bank?

Another question that arises in this context is whether financial institutions, for example, banks and securities firms, that conduct a given type of business should be subject to the same regulatory regime in respect of that business. Or should there be separate regulatory regimes for banks and securities firms, even if this means treating the two types of institution differently when they are engaging in the same activities? Clearly, this choice between functional and institutional regulation may affect the competitive relationship between banks, securities firms and other non-bank financial firms which have overlapping business interests. The more general view expressed, for instance, in European financial market directives and Basle regulatory guidelines is that like activities should be treated identically for supervisory purposes, regardless of the category of institution.

However, not all supervisory authorities accept this view. For instance, Mr Alan Greenspan has stated that the Federal Reserve Board 'does not believe that competitive equity requires that an identical oversight regime be applied to all players in a marketplace, provided competition from whatever source ensures adequate customer choice'.¹⁵ The Board's concept of competitive equity is evidently based on effective competition rather than parity of regulatory treatment or the level playing field. Indeed the Board's view is that disparities in the competitive environment for financial institutions are inevitable so long as banks are protected by an official safety net and are therefore subject to special regulatory safeguards.

14. On the regulatory implications of functional integration, see Dale (1992).

15. Greenspan (1995b), p. 9.

Closely related to the question of corporate structure is the issue of consolidated supervision. When a bank has a securities subsidiary or affiliate, should the bank regulator take account of the risks incurred by the securities operations and, if so, how?¹⁶ Should the two parts of the business be fully consolidated in an accounting sense for the purpose of calculating capital adequacy and other prudential ratios? And, in particular, should a bank be consolidated with its related securities entity so as to eliminate transactions between the two and thereby remove large exposure restrictions that might otherwise apply to the bank's funding of its securities unit? These are important policy issues that have to be addressed when considering how best to supervise the new breed of financial conglomerates.

The answers to these questions about the regulation of financial conglomerates depend crucially on the 'specialness' of banks and the interdependence of risks incurred by related financial entities. If banks are viewed as special because their activities give rise to systemic risk and if banks can be brought down by problems originating in a non-bank subsidiary or affiliate, then there are three possible regulatory approaches. These are:

- ban ownership linkages between banks and non-banks;
- impose strict firewalls between banks and related non-banks in order to insulate the former from risks incurred by the latter (though there may be legitimate doubts as to whether such firewalls can be effective); or
- regulate bank-related financial firms to the same standard of solvency risk as banks.

If this last alternative is adopted, there is a clear danger that, in the interests of competitive equality, non-bank investment firms will be subject to unnecessarily stringent regulatory arrangements.

If, on the other hand, the Benston-Kaufman view of financial markets is accepted, and banks are *not* viewed as special, they can be allowed to engage freely in non-bank, and indeed non-financial, activities presumably using whatever corporate structure they prefer (although if there is deposit insurance, any activity funded by deposits would need to be regulated in order to combat moral hazard).

Choices about functional versus institutional regulation, as well as about consolidated supervision, follow from the fundamental decision on whether risks within a financial conglomerate are to be pooled or segregated. Broadly speaking, where risks are pooled institutional regulation plus consolidated supervision is most appropriate; while for regulatory regimes that seek to insulate banks from risks incurred by related non-bank entities functional regulation is appropriate and consolidated supervision less relevant.

4.3 Regulatory Challenge of Financial Innovation

The third feature of modern financial markets noted above is the rapid pace of financial innovation, as reflected particularly in the remarkable expansion of derivative products trading. Large-scale derivatives activity presents a number of regulatory problems. However, one key difficulty associated with derivatives deserves to be

16. See Tripartite Group (1995).

stressed at the outset. What makes derivatives different from more traditional financial transactions is not the type of risk to which they give rise but rather the speed at which these risks can be transformed and the complexity of the transformation process. The result is a loss of transparency which can make risk assessment much more difficult for:

- internal management;
- external counterparties; and
- regulators.

In the words of Mr William McDonough, President of the Federal Reserve Bank of New York:

'Formerly you could look at the balance sheet of a financial institution and quickly get a sense of exposure and risks ... today, balance sheet information is clearly inadequate for this purpose ... the fast pace of activity in today's market renders financial statements stale almost before they can be prepared.'¹⁷

Management faces formidable difficulties in monitoring, controlling and verifying the risks incurred by derivatives dealers. Excessive risks may be incurred because risk parameters have not been set, because risk limits are themselves too permissive, because mistakes cause the limits to be breached or because, as in the Barings case, dealers engage in unauthorised trading which is incorrectly reported. Given the crucial importance of internal risk-management procedures in controlling derivatives risks, the question is whether standards in this area should be governed by industry-led self-regulatory initiatives, international supervisory guidance and/or national regulatory arrangements.

Financial innovation in general, and derivatives trading in particular, has also created transparency problems for regulators. Assessment of capital adequacy involves a comparison between the level of capital and the risk of the activity that it supports. Since capital is the residual of assets less liabilities, the concept of capital adequacy becomes difficult to apply when portfolios are turning over rapidly and risk profiles being transformed at increasing speed. In the words of Mr Alan Greenspan:

'... it is unlikely that an occasional snapshot of a portfolio composition can serve as a basis for evaluating the riskiness of a dynamic strategy. With instruments trading that represent highly leveraged exposures, a large chunk of capital can disappear, and then reappear, all within the trading day. Supervisors may have to resort to basing their analyses chiefly on assessments of managerial capabilities rather than of the portfolio held at a given instant.'¹⁸

Given this radical shift in supervisory focus the formidable task facing regulatory authorities is to gauge an institution's competence in managing risk – a question considered in Section 5.

Derivatives activity also presents financial markets with a new kind of transparency problem. Traditional banking has always been associated with transparency difficulties due to the fact that the main stock-in-trade of banks – non-marketable commercial loans – cannot be readily assessed by outsiders. Large-scale derivatives trading, whether undertaken by banks or securities firms, has added a new dimension to the transparency problem in financial markets, although here the difficulty arises from the speed and complexity of risk transformation. The 1992 Promise Report noted that, in the context

17. McDonough (1993), p. 9.

18. Greenspan (1995a), p. 3.

of increased derivatives trading, ‘... even a sophisticated outsider, not having access to the internal information systems that support management risk assessments can, at best, make only an informed guess as to the nature of a firm’s risk exposures’.¹⁹ More generally, the report expressed concern about the interconnection between non-transparency and funding instability in the following terms:

‘In a crisis situation, a lack of transparency might cause firms to back away from troubled institutions and, perhaps, from other institutions, perceived to be subject to similar stress. As a result of this behaviour, which reflects incomplete information, disturbances can spread more quickly and more broadly across firms and markets.’²⁰

The appropriate response to problems of market transparency is more extensive disclosure of financial information. But in the context of fast-moving derivatives business the difficulty is to formulate effective disclosure rules that do more than provide an outdated snapshot of risk exposures.

The combined effect of globalisation, functional integration and financial innovation has made financial markets much more difficult to police. The dangers confronting regulators in the new financial environment are well illustrated by the collapse of Barings in February 1995. Barings failed partly because it was involved in large-scale derivatives business which senior management did not fully understand (a problem of financial innovation); partly because it was active in far-flung markets (notably Singapore, Tokyo and Osaka) whose local regulators communicated neither with each other nor with the UK regulatory authorities (a problem of globalisation); and partly because there was regulatory confusion over the appropriate scope of consolidated supervision of Barings’ mixed banking-securities business and, in particular, the way in which Barings’ banking arm was able to fund its securities operations in Singapore (a problem of functional integration). These and other difficulties associated with the Barings collapse are considered more fully in an Appendix but the affair does underline the point that regulators have a long way to go before they can claim to be on top of the recent dramatic changes in global financial markets. The following section examines progress to date in meeting the regulatory challenge.

5. The Regulatory Response

This section considers the various official and private sector initiatives that have been implemented or proposed in response to the transformation of financial markets brought about by globalisation, functional integration and financial innovation.

5.1 Globalisation

Bank regulators began to appreciate the need for international supervisory co-operation over twenty years ago, when the Basle Committee on Banking Supervision was established following the collapse of Herstatt Bank in 1974. Since then, the Committee has focused on four key areas: the allocation of regulatory responsibilities (Basle Concordat of 1975 as revised 1983); exchanges of information and supervisory

19. Promisel Report (BIS 1992b), p. 28.

20. Promisel Report (BIS 1992b), p. 34.

collaboration (1990 addendum to the Concordat); supervisory standards (post-BCCI recommendations on minimum standards 1992); and harmonisation of minimum capital adequacy standards (1988 Basle Accord on capital adequacy, as supplemented by the 1996 agreement on market risks).

Looking back at the Basle Committee's activities over the past two decades, two features stand out. First, whereas the Committee was originally established with a view to encouraging gradual regulatory convergence, this goal was displaced in the late 1980s by the perceived need to establish a common regulatory framework, an approach that culminated in the Basle Accord of 1988 and subsequent market risk guidelines. This shift in emphasis coincided with the emergence of competitive equality as a major policy objective alongside that of systemic stability. Second, the functional integration of international financial markets has obliged the Committee to become increasingly involved in securities market regulation, particularly in the area of derivatives. This new concern with securities market risks is also reflected in the increasing co-operation between Basle and the International Organisation of Securities Commissions (IOSCO) discussed below.

Securities regulators have lagged well behind bank regulators in developing mechanisms for international supervisory co-operation. This is due partly to the fact that securities markets have been viewed as posing less of a danger to systemic stability than banking, and also because IOSCO has a looser and larger membership than the Basle Committee on Banking Supervision. Over recent years IOSCO has adopted a number of resolutions covering such matters as money laundering, international accounting standards, clearance and settlement and the supervision of financial conglomerates. In 1991 IOSCO's Technical Committee entered discussions with the Basle Committee on a co-ordinated approach to capital adequacy standards for banks and securities firms. However, negotiations broke down in 1992 because the Technical Committee could not itself reach agreement on position risk requirements for equities.

More recently, there has been closer co-operation between the Basle Committee and IOSCO. In 1994 the Technical Committee and the Basle Committee issued co-ordinated guidelines on risk management for OTC derivatives business; in early 1995 the same two committees issued joint guidelines to supervisors world-wide on the information necessary to evaluate derivatives risks incurred by banks and securities firms; and at its July 1995 conference in Paris IOSCO adopted the so-called Windsor Declaration on co-operation between supervisors of futures and options markets. This Declaration had been issued in May 1995 – in response to the Barings collapse – by representatives of regulatory bodies from sixteen countries responsible for supervising the activities of the world's major futures and options markets.

Apart from official regulatory co-ordination initiatives undertaken through the Basle Committee and IOSCO there have been an increasing number of private sector moves aimed at strengthening prudential standards in international financial markets. The Group of Thirty has proposed minimum standards relating, *inter alia*, to netting arrangements, settlement procedures, and managerial oversight of derivatives risks. The US-based Derivatives Policy Group has established good practice guidelines for the management of derivatives business by broker-dealers. And in early 1996, 49 exchanges and clearing houses announced an agreement to exchange information on their members' risk exposures in different markets.

In responding to the challenge of globalisation, regulators have to determine the appropriate balance between national autonomy in regulatory matters and international co-ordination or harmonisation. Since the economic case for financial market regulation is based on externalities, the boundaries of regulatory co-ordination should presumably be determined by the extent of external effects. In this context, Herring and Litan have argued that measures aimed at consumer protection rather than systemic stability should be governed by national preferences. On the other hand, they suggest that 'a global perspective eventually may be the appropriate domain to deal with systemic risk since the externalities may be global in scope'.²¹ However, the question then becomes one of identifying those elements of international markets which could give rise to systemic risk. Such risk is most obvious in international banking which is also the area where cross-border co-operation is most fully developed. For the reasons explained above, systemic concerns now extend to major securities firms (especially bank-related entities) whose regulation is increasingly subject to international scrutiny. But there is also a question as to whether the emerging global regulatory framework should embrace organisation of *markets*, and not merely participant *institutions*.

In particular, the extraordinary expansion of financial activity both within and across national borders has focused attention on the role of payments and settlement systems which have been described as 'the connective tissue of all financial and real economic activity'.²² Given such a pivotal role, payments and settlement systems provide a ready channel for the dissemination of systemic crises which may typically be triggered and spread by a failure to settle obligations.

Policy makers have long recognised the importance to systemic stability of orderly funds transfer (payments) systems.²³ This perception is reflected in central banks' active involvement in interbank clearing systems – an involvement that may embrace ownership, operation, auditing, rule formulation and enforcement as well as the extension of intra-day credit to participants. More recently there has been growing concern over the systemic risks associated with the clearing and settlement of securities and derivatives transactions²⁴ where central bank involvement has traditionally been less active.²⁵

The most fundamental policy issue relating to securities and derivatives settlement and clearing is the extent to which these arrangements should be subject to regulatory oversight by national authorities. The case for official involvement is based on externalities in the form of systemic risk, for example, the risk that the settlement failure of one participant will lead to settlement failures of other participants due to unexpected liquidity shortfalls or credit losses.²⁶ If these other participants have no credit relationship

21. Herring and Litan (1994), p. 85.

22. Borio and Van Den Bergh (1993), p. 63.

23. See, for instance, Bank for International Settlements (1990a, 1990b).

24. Clearing and settling securities transactions involves *matching* of the terms of trade, calculation of the resulting obligations of counterparties (*clearance*), the discharge of those obligations (*settlement*) through the *final transfer* of securities (*delivery*) and the final transfer of funds (*payment*). *Clearing houses* are typically involved in both the clearing and settlement of transactions.

25. For a discussion of policy concerns see Bank for International Settlements (1989, 1992a and 1994a).

26. Credit risk may involve replacement cost risk or principal risk; liquidity risk arises where a counterparty does not settle on due date, thereby causing other counterparties to withhold settlement.

with the original failing participant and if also the costs of these third-party effects are not internalised within the clearing house, then externalities exist.

On the other hand, where a clearing house takes on the counterparty risks incurred by its clearing members, the impact of contagious settlement failures will be felt by the clearing house itself. Under these circumstances the clearing entity has a direct interest in formulating prudential rules and operating procedures that minimise such risks. In other words, the clearing house has an incentive to address the issue of systemic risk, the 'system' in this context being limited to the clearing house membership. However, externalities remain because of the potential spillover effects of a clearing house collapse on other clearing houses as well as the payments system.

Some central banks have taken the view that, in order to strengthen market incentives to control risk and reduce 'moral hazard', official involvement in the operation and regulatory oversight of securities and derivatives settlement should be minimised.²⁷ According to this view regulators should instead focus their efforts on strengthening payments systems so as to insulate the core banking sector from disturbances originating in securities settlements. Other central banks, however, believe that they should be closely involved in the design and operation of securities and derivatives settlement systems and emphasise in particular the importance of explicit loss-sharing rules that would apply in the event of a settlement failure.

The debate has now moved to consideration of the case for harmonisation of minimum prudential standards for payments and settlement systems. In January 1996 Mr Brian Quinn, Executive Director of the Bank of England, suggested that internationally agreed minimum standards might be desirable in this area and that high on the priority list would be common requirements for access, financial standards and liquidity requirements. In more general terms, Mr Quinn emphasised the need for a broader approach to regulatory co-ordination.

'... the regulatory net is being extended all the time, both as regards institutions – banks and securities companies – and as regards payments and settlement systems serving the needs of financial groups taking advantage of the opportunities to conduct their business on a global basis. I do not think it should be otherwise if we are to reduce the risks of failure in one part of the financial system spreading internationally.'²⁸

Expressed differently, wherever there are heavy concentrations of counterparty risk involving major financial institutions, systemic risk is present. It is the task of international regulatory co-ordination to ensure that these potential flashpoints are subject to appropriate safeguards.

5.2 Functional Integration

The response of national authorities to the diversification of banks into non-bank financial activities has been divergent.²⁹ As a result, mixed-activity financial groups in the three major financial blocs (the United States, European Union and Japan) have contrasting corporate structures.

27. See Borio and Van den Bergh (1993), p. 31.

28. Quinn (1996), p. 6.

29. See, generally, Dale (1996).

In the United States the Glass-Steagall Act remains in being but so-called ‘Section 20’ bank subsidiaries have limited powers to undertake securities business within the terms of the Act. ‘Firewall’ restrictions on intra-group financial transactions are imposed in order to prevent risk being transmitted from Section 20 securities units to the bank. Recent proposals for repeal of Glass-Steagall have featured a modified corporate structure, in which the bank and its non-bank affiliates become subsidiaries of a financial holding company and firewalls are interposed between the bank entity, its parent and affiliates.

In Japan banks and securities firms are now permitted to expand their activities into each other’s business territory through the establishment of specialised securities and banking subsidiaries. Firewalls, of a kind, are interposed between the parent entity and its subsidiary but these are designed to prevent conflicts of interest and undue marketing influence rather than the transmission of business risks.

Finally, within the European Union, the Capital Adequacy Directive’s trading-book approach permits banks to engage freely in securities activities either directly (for example, on the bank’s balance sheet) or through securities subsidiaries. In either case securities activities, as defined by the trading book, are subject to a capital adequacy regime separate from that for the banking business.

Implicit in these divergent regulatory regimes are very different assumptions about the nature of non-banking financial risks and the potential for cross-infection within financial conglomerates. The ‘pure’ Glass-Steagall model assumes that securities operations can destabilise banks and that banks cannot be insulated from risks incurred by securities subsidiaries or affiliates. The Section 20 subsidiary regime and the proposed US holding company model assume that funding firewalls can prevent risks being transmitted from non-bank financial firms to banks. The Japanese regulatory regime requires separate incorporation of banks’ non-bank operations, not to segregate risks but rather to prevent joint marketing of bank and non-bank financial services. Finally, the European regulatory framework is anomalous in that it seeks to segregate banking and securities risks for capital adequacy purposes, but makes no attempt to insulate banks from their non-bank activities.

Within these financial market regimes regulation tends to be functional rather than institutional, with bank and securities regulators employing different supervisory techniques. In particular, whereas the principle of consolidated supervision lies at the heart of bank regulation, consolidation has not generally been applied by securities regulators. This dual approach seems difficult to justify in a situation where a bank may be brought down by a subsidiary of its securities arm (as happened in the case of Barings).

It should also be emphasised that until quite recently there was little effective co-operation between bank and securities regulators at the international level. Most importantly the Basle Committee and IOSCO have so far failed to agree on common capital adequacy standards for banks and non-bank securities firms. However, there are reasons for believing that closer collaboration between Basle and IOSCO is now in prospect. The Basle Committee’s capital adequacy guidelines on market risks have been explicitly formulated with a view to securing agreement with securities regulators and joint discussions are proceeding on this subject. There have also been joint initiatives between Basle and IOSCO on risk management for derivatives and on supervisory

information about derivatives activities. And, finally, at their Halifax Summit in June 1995 the governments of the Group of Seven countries gave further impetus to these developments by calling for closer international co-operation between banking and securities regulators.

5.3 Regulatory Response to Innovation

As indicated in Section 4.3 the central problem associated with financial innovation generally and derivatives trading in particular is that the transparency of financial markets tends to be obscured. This lack of transparency has implications for the managers of financial institutions, for regulators and for counterparties. Each of these parties is considered in turn.

At the management level, the derivatives industry itself has responded to the need for sophisticated management of derivatives activities. The Group of Thirty in its 1993 study of derivatives made recommendations addressed to dealers and end-users, aimed at strengthening risk-management techniques and procedures.³⁰ These recommendations cover such matters as mark-to-market valuation of derivatives positions, the quantification of market risk and credit risk, the use of multi-product master agreements with close-out netting provisions, the separation of the risk-management and dealing functions, and accounting and disclosure practices.

Another major industry initiative was J.P. Morgan's decision in October 1994 to release for general use its own proprietary risk-management model, RiskMetrics, together with a data set covering daily estimated volatilities and correlations across a large number of asset classes and instruments. J.P. Morgan's decision to make its own risk-management techniques available to the marketplace is in part a reflection of the industry's self-interest in improving transparency in derivatives and strengthening risk-management procedures. However, regulators have generally taken the view that industry self-regulation is not enough in this key area. For instance, IOSCO has stated unequivocally that 'adequate operational and financial risk control mechanisms cannot be left solely to the influence of market forces'.³¹ Accordingly both the Basle Committee (in respect of banks) and IOSCO (in respect of non-bank securities firms) have issued detailed guidelines on risk management which are aimed at both regulatory authorities and market intermediaries.³² The areas covered include oversight of the risk-management process by senior management, the measurement, control and reporting of risk exposures and internal controls and audits. For instance, on the question of risk measurement, the Basle Committee proposes that any institution active in derivatives dealing should be able to monitor its credit and market exposures (using mark-to-market valuations) at least daily, while 'some' (unspecified) institutions 'should also have the capacity, or at least the goal, of monitoring their more actively traded products on a real-time basis'.³³

National authorities have moved towards implementation of these internationally agreed guidelines in their own jurisdictions. Thus the United States Comptroller of the

30. See Group of Thirty (1993).

31. IOSCO (1994), p. 5.

32. Bank for International Settlements (1994a), IOSCO (1994).

33. Bank for International Settlements (1994a), p. 7.

Currency in October 1994 published a handbook on 'Risk Management of Financial Derivatives' for use by bank examiners, providing comprehensive guidance on minimum standards of risk management to be expected of national banks. The handbook makes clear that the lack of an adequate risk-control function relative to the level of derivatives activity conducted by a bank will be reviewed as an 'unsafe and unsound banking practice' – a ruling that opens the way to active supervisory intervention in cases where banks' risk-management systems are considered to fall short of the specified minimum standards.³⁴

It may be said, therefore, that in the area of risk management a rather awkward regulatory regime has emerged, combining industry self-regulatory initiatives, international supervisory guidance and national regulatory arrangements.

While the management of institutions active in derivatives business must focus on the measurement, monitoring and control of derivatives risk, regulators must also have a clear view of such exposures in order to apply capital adequacy requirements. The final Basle capital standards for market risk, published in January 1996, allow the use of proprietary in-house models for measuring market risks as an alternative to the standardised measurement framework set out in the original proposals.³⁵ Under this alternative approach banks would be given an incentive to strengthen and develop their risk-management systems, and capital requirements would more accurately reflect the risk characteristics of individual banks. In addition, the supervisory task is in some ways simplified: the regulator sets the risk parameters and validates each bank's risk-assessment methodology but is not encumbered with a vast volume of statistical returns. However, there are some potential problems. In the first place, regulators may find it extremely difficult to evaluate the most sophisticated risk-management models – a question of regulatory transparency. In addition the transparency of financial markets (see below) may also be reduced, because only banks and their regulators will know the basis on which risks have been measured, in contrast to the present situation, where Basle capital ratios are generally published and well understood.

It was pointed out in Section 4.3 that the appropriate response to problems of market transparency is more extensive disclosure of financial information. A working group of the Euro-currency Standing Committee of the G10 Central Banks followed up the policy recommendations of the Promisel Report by publishing in September 1994 a discussion paper on public disclosure of market and credit risks ('Fisher Report').³⁶ In connection with derivatives, the authors noted the increased disparity between market participants' ability to assess and manage their own financial risks, and their relative inability to assess the riskiness of other market participants on the same terms. They suggested that in order to reduce this information gap financial institutions should adapt for public disclosure the information generated by their internal risk-management systems. The new information would complement but not substitute for conventional accounting disclosures which cannot be expected to capture a firm's risk characteristics. More specifically, the Fisher

34. See Comptroller of the Currency (1994).

35. Bank for International Settlements (1996).

36. Bank for International Settlements (1994b).

Report suggests that institutions should disclose periodic quantitative information covering the following:

- market risks plus performance in managing those risks; and
- counterparty credit risk plus performance in managing credit risk.

Because there is no consensus on best practice for measuring such risks it is recognised that for the time being at least there can be no strict comparability of disclosure and information. The report does, however, suggest various possible disclosure models. For instance, market risk disclosure might take the form of high, low and average value-at-risk calculations that occurred during the reporting period for holding periods of one day and two weeks. Similarly, disclosure of market risk performance could involve a comparison between average daily value-at-risk and the average daily change in a portfolio's market value. The purpose here would be to determine whether the frequency of large decreases in a portfolio's value is significantly larger or smaller than the confidence level of the value-at-risk calculation.

The Basle regulators believe that disclosure of such quantitative information will have several benign consequences. First, according to authors of the Fisher Report, 'if firms with superior risk-management systems begin to disclose information adapted from these systems, this process could institute a dynamic competitive process leading to enhanced disclosure practices and greater market transparency'.³⁷ Second, increased transparency is expected to create market incentives for better risk-management practices, since those firms with superior techniques will enjoy a higher credit standing. Finally, and perhaps most importantly, increased transparency should (so it is argued) help to stabilise financial markets by preventing ill-informed panics and funding withdrawals from institutions whose credit standing is in doubt.

There is, however, a difficulty here. Unless market risks are disclosed on a real-time basis, the true risk profile of an institution at any point in time will not be known – since as Ms Susan Phillips of the United States Federal Reserve Board has pointed out: 'with derivatives and highly liquid securities, risk profiles can change drastically, not only day to day, but hour to hour and minute to minute'.³⁸ The Fisher Report does not address this issue.

There is also an opposite concern. To the extent that transparency *is* imposed and market participants *can* view clearly the up-to-date risk profiles of their counterparties, the scope for discretionary action by central banks is largely removed. Put another way, transparency may be a safeguard against ill-informed panics, but when an institution really is faced with a potential solvency problem the market's verdict will be immediate, savage and final. Indeed, it is worth reflecting that the present emphasis on transparency is at odds with central banks' traditional response to financial crises, which is to fudge the solvency issue and buy time, as exemplified by the LDC debt crisis, the 1980s crisis in the United States savings and loan industry, the United Kingdom secondary banking crisis of 1974-1975 and the Japanese banking system's bad loan crisis of 1992-1995.

37. Bank for International Settlements (1994b), p. 6.

38. Phillips (1994), p. 3.

While the multilateral groupings (Basle and IOSCO) have responded to the derivatives challenge by focusing on the adequacy of internal controls, the measurement of risk and financial disclosure, the United States has developed a unique self-regulatory model for derivatives activities. Several major United States securities firms have chosen to conduct their derivatives activities through special-purpose broker-dealer affiliates which, paradoxically, have a higher credit rating than the broker-dealer or its parent. These derivatives product companies (DPCs) achieve a superior credit rating (typically triple-A) through elaborate measures designed to insulate the DPC from the credit risk of the sponsoring company. The importance of the superior credit rating is that many risk-averse counterparties are prepared to deal only with the strongest credits, particularly where long-term contracts (for example, swaps) are concerned.

A DPC typically will execute a contract with a counterparty and simultaneously execute a mirror contract with its sponsor. Such back-to-back contracts interpose the creditworthiness of the DPC between the counterparty and the DPC's sponsor, while also transferring market risk from the DPC to the sponsor.

Under the DPC regime OTC derivatives business is transacted by an unregulated affiliate of the broker-dealer, which nevertheless has a higher credit rating than the broker-dealer or its parent. This is possible because the credit rating agencies perform a surrogate regulatory role in specifying an appropriate corporate structure as well as operating procedures for DPCs, and in monitoring DPC behaviour to ensure compliance with such procedures.

However, the co-existence of SEC-regulated broker-dealers and self-regulated derivatives affiliates creates a dilemma for policy makers.³⁹ If the self-regulation regime is effective, then one has to ask whether SEC regulation is necessary; and if it is not effective then surely the SEC and not the credit rating agencies should be regulating the derivatives affiliates. Furthermore, there is a danger that the 'firewall' mechanisms of the DPCs, together with procedures for transferring market risk exposures from the DPC to the sponsoring company (or its affiliate), could be creating a high-risk entity within the group that is regulated neither by the SEC nor by the credit rating agencies, but whose default could pose a threat to the broker-dealer.

6. Summary and Conclusions

It has been shown that the case for regulating financial institutions rests on three kinds of argument: consumer protection, moral hazard and systemic risk. Regulatory authorities have become increasingly concerned with the last of these rationales, although such concerns are not necessarily shared by academic commentators, some of whom deny the existence of systemic risk.

The economic basis of regulation varies according to the type of institution. Banks are generally viewed as uniquely vulnerable to systemic risk; investment firms and insurance companies on the other hand, have traditionally been subject to regulatory regimes that stress investor or customer protection as the main objective. However, as the boundaries between banking and non-bank financial activities have become blurred, and banks have

39. See United States General Accounting Office (1994).

diversified away from their traditional lending business, regulators' concerns about systemic risk have extended beyond the banking sector to embrace securities business and other non-banking financial firms.

In recent years the task of regulators has been greatly complicated by three key financial developments; namely, globalisation, functional integration and financial innovation.

Globalisation may extend the boundaries of systemic risk by creating the potential for cross-border contagious financial disorders. In other words, the externalities associated with systemic risk become world-wide in scope. Globalisation calls for a common framework because financial shocks can no longer be confined to the jurisdiction in which they originate. Bank supervisors have already evolved an embryonic international regulatory regime by establishing agreed guidelines on:

- the allocation of regulatory responsibilities;
- the adequacy of supervisory standards; and
- capital requirements.

Securities regulators, on the other hand, have a long way to catch up – and perhaps little time to do so – if upheavals such as the Barings collapse are not to be repeated. Meanwhile regulatory attention has shifted from institutions to payments and settlement systems where large concentrations of counterparty risk can have systemic implications.

Functional integration, involving the mixing of bank and non-bank financial activities, raises formidable regulatory difficulties. The main issue here is whether the full panoply of bank regulation needs to be carried over to banks' non-traditional business or whether the bank entity can somehow be insulated from risks incurred by these non-bank financial operations. This issue is further complicated by questions of competitive equality which, increasingly, feature in the formulation of regulatory policy.

The regulatory response to functional integration has left unresolved a number of problems. First, national authorities have adopted divergent approaches to the central issue of risk segregation versus risk pooling within financial conglomerates. Second, the implications of allowing banks to freely fund their securities and derivatives trading operations with deposit liabilities (as in the Barings case) have not been properly addressed. Third, the separation of regulatory responsibilities, at the national level, between bank and securities regulators seems increasingly archaic in a situation where the two businesses have become closely integrated. Fourth, at the international level it is surely time to consider the establishment of an overarching co-ordinating body to subsume some of the activities of the Basle Committee and IOSCO – whose record of mutual co-operation in any case leaves much to be desired.

Finally, financial innovation in the form of large-scale derivatives trading has resulted in a loss of transparency in financial markets that poses problems for management, regulators and counterparties. For management the main emphasis must be on internal controls; and for counterparties the accepted solution is increased financial disclosure. Regulators, however, face a particular difficulty in that reliance on periodic bank examinations and reporting requirements becomes futile when a bank can transform its proprietary trading position and overall risk profile almost instantaneously through the use of derivative products. The regulatory response has been to develop an entirely new

approach to capital adequacy assessment based on internal risk models. This focuses on the process by which portfolios are selected and risks are managed, rather than the instruments held at a point in time. In the words of Mr Alan Greenspan, 'supervisors may have to resort to basing their analysis chiefly on assessments of managerial capabilities rather than on the portfolio held at a given instant'.⁴⁰

What is certain is that large-scale derivatives trading reinforces the processes of globalisation and functional integration by creating new linkages between financial markets. Above all, therefore, the explosion of derivatives business strengthens the case for a global approach to prudential regulation embracing the full range of activities undertaken by the new financial conglomerates.

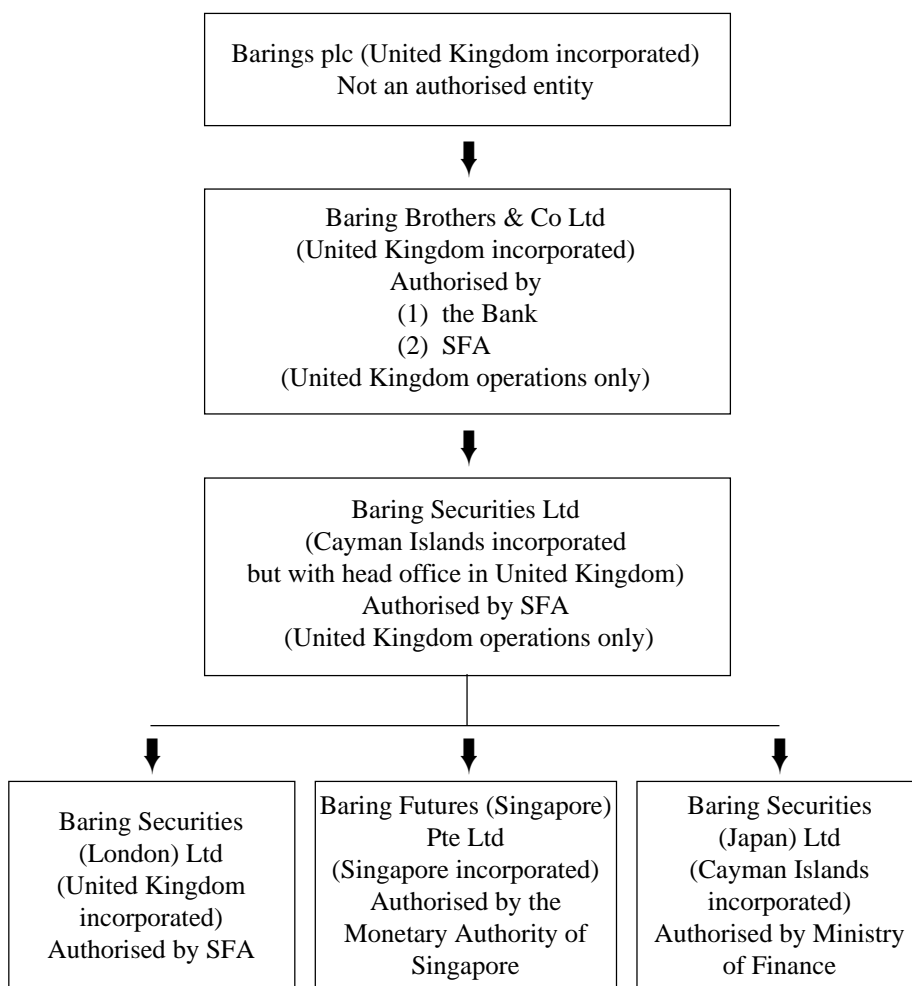
40. Greenspan (1995a), p. 3.

Appendix: The Barings Disaster – A Warning to Regulators

At the time of its collapse in February 1995 Baring Brothers and Co Ltd (BB & Co) was the longest established merchant banking business in the City of London with total assets of around £6 billion and deposits of some £3 billion.

The parent holding company was Barings plc which had two major subsidiary operations, BB & Co, and Baring Asset Management Holdings Ltd. BB & Co had a securities subsidiary, Baring Securities Ltd (BSL), which in turn owned Baring Securities (London) Ltd (BSLL) and whose overseas subsidiaries included Baring Futures (Singapore) Ltd (BFS) and Baring Securities Japan Ltd (BSJ) (see Figure 1).

Figure 1: Barings Group Companies (Selected)



Source: Barings Report, p. 324.

An unusual feature of this corporate structure is that the voting share capital of Barings plc was held by its executive management while the non-voting share capital, which was exclusively entitled to ordinary dividends, was held by the Baring Foundation, a United Kingdom registered charity.

At the end of February 1995 Barings faced collapse, having incurred massive losses on unauthorised derivative trading undertaken by Nick Leeson, the chief trader and general manager of its Singapore securities unit (SFL). An attempted rescue operation orchestrated by the Bank of England failed and on Sunday 26 February the Barings group was placed in administration. This Appendix considers the managerial and regulatory weaknesses that led to the collapse. The discussion draws heavily on the Bank of England's own report on the Barings collapse ('The Barings Report').⁴¹ That report examines three levels of protection that might have been expected to prevent the build-up of concealed losses at BFS: namely internal management controls, the external auditing process, and supervision by relevant regulatory authorities.

So far as Barings' own management is concerned, the evidence is damning. Leeson was allowed to combine back and front office responsibilities in Singapore; he was not properly supervised, due in part to confusion over who was supposed to be reporting to whom; and, crucially, Barings' banking operation in London (BB and Co) funded BFS via Barings Securities Ltd (BSL), on a no-questions-asked basis; that is, without proper regard to (1) the need to assess counterparty risks, (2) the need for verification of funding requests and reconciliation of records, and (3) the need to establish whether the funds requested were for client or proprietary trading. Finally, senior management failed to make enquiries as to how a supposedly risk-free arbitrage operation could generate extraordinary profits.

The external auditors, Coopers and Lybrand, also come in for some criticism. Coopers and Lybrand Singapore completed an assessment of BFS's internal controls in November 1994 and concluded that these were satisfactory. The report observes that 'this conclusion was ... not readily compatible with the fact that there was a lack of segregation between front and back office'.⁴² The report also comments that 'we do not consider that Coopers and Lybrand London performed sufficient tests to satisfy themselves that the controls over payments of margin and the associated accounting balances were operating effectively'.⁴³

A final layer of protection is provided by the supervisory process. In order to appreciate the Report's findings in this area it is necessary to understand the division of regulatory responsibilities. The Bank was responsible for supervising BB and Co on a consolidated basis, meaning that even where the Bank had no direct supervisory responsibility for, say, an overseas subsidiary, it still had to take account of risks in the subsidiary that might affect BB and Co. The Securities and Futures Authority (SFA) was responsible for supervising BSL and BSLL – although the SFA's supervision in contrast to the Bank's approach, was *not* conducted on a consolidated basis (see below). This

41. Bank of England (1995). (Hereafter cited as 'Barings Report') – see also Dale (1995a), pp. 1-5 and Dale (1995c), pp. 1-2.

42. Barings Report, para 13.47, p. 242.

43. Barings Report, para 13.50, p. 242.

meant that in practice the relevant foreign regulatory authority (for example, SIMEX in the case of BFS) had exclusive supervisory responsibility for Barings' overseas securities subsidiaries as far as the SFA was concerned. Finally, the Bank had the role of 'lead regulator' for the Barings Group as a whole, meaning that it was responsible for co-ordinating the supervisory functions of the United Kingdom regulators.

The report contains two major criticisms of the Bank's supervisory performance in relation to Barings. First, it points out that there was confusion over a considerable period as to whether Barings' margin exposure to overseas exchanges should be subject to the general 25 per cent limit on large exposures – an ambiguity that permitted an open-ended build-up of Barings' exposure to SIMEX. Second, the Bank allowed Barings' banking operation (BB and Co) to be 'solo consolidated' with BSL: under this supervisory arrangement the banking and securities businesses were consolidated and there was then no limit on the intra-group funding of Barings' securities operations by Barings' banking arm. The report notes that the *de facto* solo consolidation of BSL and BB & Co (technically, the matter remained under review) was the first time that a substantial securities company had been solo consolidated with a bank and meant in effect that BB & Co was able to remit large advances to BSL for on-lending to BFS, ostensibly to finance client trading but in fact (as it transpired) to finance unauthorised speculative activity.

In assessing the supervisory performance of the SFA the report raises one absolutely fundamental question. It points out that the SFA did not consider the level or nature of BSL's exposure to its overseas subsidiaries because 'it does not regard itself as having any obligations with regard to subsidiaries (whether the United Kingdom or foreign) other than those which apply to ordinary counterparties who might expose the member firms to risk'.⁴⁴ However, the report states unambiguously that 'in monitoring the financial resources of BSL the SFA should have had regard to the financial soundness of BSL's subsidiaries including BSJ and BFS insofar as the operations of the subsidiaries were capable of affecting the financial integrity of BSL'.⁴⁵

Finally, the report states that it was not possible to make detailed enquiries as to the overseas regulation of Barings, and that no conclusions can therefore be reached on this aspect of Barings' collapse.

The report's final conclusions on the lessons to be drawn from Barings naturally follow closely the various criticisms noted above. There are exhortations to management about the need to understand the business they are engaged in, and to establish tight internal controls. The Bank, too, is urged to increase its understanding of non-banking businesses undertaken by banking groups. However, the enquiry team do not believe that there should be any fundamental change to the framework of regulation in the United Kingdom. For instance, the idea of introducing routine on-site bank inspections by the Bank is rejected in favour of a regime which makes greater use of reports commissioned from reporting accountants, particularly in the area of internal controls. It is suggested that if necessary, reporting accountants should be required to go outside the United Kingdom. Reservations are expressed about the principle of solo consolidating

44. Barings Report, para 12.153, p. 226.

45. Barings Report, para 12.105, p. 217.

a bank and a substantial UK securities firm on the grounds that, because the bank may incur exposure to its securities subsidiary without limit, the Bank inevitably places increased reliance on regulation of the securities subsidiary by the SFA. Concern is also expressed about the role of comfort letters and guarantees, the supervisory treatment of which needs to be co-ordinated internationally.

Looking at the report's conclusions overall, certain points stand out. Firstly, exhortations to management do not seem to be a very effective way of strengthening banks' internal controls. What is surely needed here is some consideration of managerial *incentives*. As noted above in the case of Barings, the voting share capital of Barings plc was held by its executive management and the non-voting share capital was held by the Baring Foundation. The executive management voted themselves a remuneration policy under which approximately 50 per cent of profits before tax went directly into a bonus pool, the consequence being that at director level the ratio of bonus to basic salary was typically 75:25 or more.

In other words, Barings resembled a partnership so far as distribution of *profits* was concerned, but management was protected by limited liability in respect of *losses*. It is hardly surprising, therefore, that top management did not look too closely at the source of Leeson's trading profits, which were contributing significantly to the bonus pool. After all, if Leeson was taking unauthorised risks a large part of the profits arising therefrom would go to management while catastrophic losses would be borne by others, including non-voting shareholders (ie the Barings Foundation). More generally, Barings' unique financial structure, with its asymmetrical distribution of risks and rewards, created powerful incentives in favour of excessive risk-taking – a magnified version of the moral hazard problem that characterises all banking businesses.

In this context too, it is interesting to note the different risk-reward profiles of a bank-related derivatives trader and a bank depositor: the former faces zero downside risk and potentially unlimited returns (through bonuses) on high-risk positions, whereas the bank depositor faces zero upside returns and potential losses limited only by the size of his/her deposit. Under these circumstances no rational depositor would agree to place funds with an organisation that intended to use the proceeds for trading, unless the deposit liabilities were explicitly or implicitly guaranteed.

Another feature of the Barings Report is the confusion it reveals about the scope and purpose of consolidated supervision. In the first place, while the report refers to the difficult issues raised by the solo consolidation of a bank and a securities firm, it does not state clearly what these issues are. But one obvious danger is that a securities firm may be able to expand risky business on the basis of 'soft' funding from its affiliated bank, as indeed was the case with Barings. The fundamental question here is how appropriate it is for banks – and bank deposits – to be used as a source of funding for an affiliated securities firm, given that bank deposits represent 'subsidised' funding to the extent depositors are protected by the official safety net. Arguably, 'funding firewalls' should be imposed to prevent bank deposits being used to provide high-risk, aggressively managed securities businesses with cheap financing that does not reflect the risks involved.

Under present EU Directives and the United Kingdom rules, banks are not effectively prohibited from financing their securities operations through bank deposits. Admittedly,

EU large-exposure rules require banks to obtain prior authorisation for related entity exposures of over 20 per cent of capital, but the requirement is subject to various waivers and discretionary exemptions. Above all, there is nothing to prevent banks from undertaking securities or derivatives trading on their own balance sheets, thereby bypassing intra-group large-exposure limits altogether. The EU regime is in stark contrast to the proposals recently put forward by the United States Treasury as part of the planned Glass-Steagall reforms being considered by Congress – the Treasury would:

- repeal only Section 20 of the Glass-Steagall Act (which currently prohibits banks from being affiliated with a securities firm);
- require that securities activities be undertaken by a separately incorporated subsidiary of the bank; and
- impose funding firewalls between the bank and its related securities unit.

A second consolidation issue raised by the report concerns the contrasting approaches of bank and securities regulators. Under the Basle Concordat bank regulators are obliged to include foreign subsidiaries in their consolidated supervision of banking groups. Securities regulators, on the other hand, are subject to no such obligations and indeed the SFA has stated quite clearly in relation to Barings that it made no attempt to assess the risks posed by BSL's foreign securities operations (including BFS). For a mixed banking and securities business such as Barings, characterised by large intra-group financial flows and complex cross-guarantees and comfort letters, this dual approach makes no sense whatsoever since the parent bank is exposed to the risks incurred by *all* its affiliated units, including overseas securities operations.

Finally, while the report urges the SFA to 'clarify' the extent to which it should take into account the risks posed by subsidiaries of securities firms, it does not suggest how this might be done. Indeed, it is difficult to see how a regulator can properly take into account risk elsewhere in a group which might affect the authorised institution (as the Bank is required by statute to do) if it has no formal powers to supervise such entities. In other words, regulators inevitably have to rely largely on foreign supervisory authorities to ensure that overseas subsidiaries are prudently managed.

The last point highlights the fundamental weakness of the Barings Report, which is the absence of any proper consideration of the international regulatory dimension, this being outside the authors' terms of reference. Given the multinational character of Baring's financial activities, the reliance placed on local jurisdiction supervisory authorities, and the crucial importance of international supervisory co-ordination, such an omission limits the usefulness of the Report's findings.

Conclusions

Barings was an unusual player in the new global financial markets, firstly because its securities operations were large relative to its banking business and, secondly, because its financial structure gave it the characteristics of a partnership protected by limited liability. These features may have interacted in a way that encouraged a relaxed attitude to risk-taking, at least on the securities side of the business.

Nevertheless, the Barings collapse highlights important regulatory failings that touch on each of the three characteristics of modern financial markets noted above – namely globalisation, functional integration and financial innovation. In the area of globalisation, regulators in Singapore, Japan and the United Kingdom failed to co-ordinate their roles internationally, underlining the absence of any multilateral agreement on supervisory co-operation in securities markets. On the question of functional integration, there was no clear policy on (1) whether or to what extent Barings' banking arm should fund its securities affiliates or (2) how the principle of consolidated supervision should apply to the various parts of the group. And, finally, financial innovation lay at the heart of the Barings' collapse, insofar as neither Barings' top management nor regulators seem to have fully understood the nature of the derivatives arbitrage operations in Singapore that were supposed to be generating such large profits.

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