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Banking Regulation versus Securities Market Regulation

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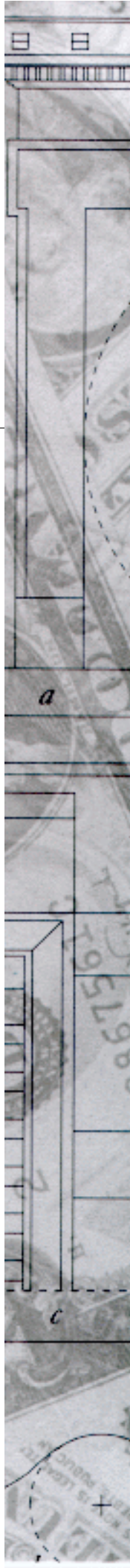
01-29



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The Working Paper Series is made possible by a generous grant from the Alfred P. Sloan Foundation

Banking Regulation versus Securities Market Regulation

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July 11, 2001

* Prepared for the Asian Development Bank Institute/Wharton Financial Institutions Center Conference on Financial Regulation, Securities Markets versus Banks, and Crisis Prevention to be held July 26-27, 2001 in Tokyo.

1. Introduction

There is a long tradition of regulating banks and securities markets in many countries. The primary justification for bank regulation that is usually given is the avoidance of systemic risk, or in other words, the avoidance of financial crises. With securities markets it is usually argued the main purposes of regulation are investor protection and enhancing the efficiency of markets. Avoidance of systemic risk, investor protection and efficiency enhancement are not the only rationales. The achievement of broader social objectives, such as combating organized crime or facilitating home ownership, provides the justification for many other regulations.

Table 1 summarizes the role of different types of banking and securities market regulations in achieving the four objectives of avoiding systemic risk, protecting retail investors and depositors, enhancing efficiency and achieving broader social objectives. It can be seen from Panel A that although banking regulation primarily prevents systemic risk most policies also impact a number of the other objectives. From Panel B securities market regulation is directed towards investor protection and efficiency enhancement.

In recent years the relationship between banking regulation and securities market regulation has become an important topic. Emerging markets have been plagued by crises. The recent Asian crises are a good example. Most of these crises occurred in bank based financial systems and the non-contingent nature of banks' liabilities appears to have played an important role in causing the crises. Banking regulation failed to prevent the occurrence of the crises. This has led a number of observers to argue that Asian countries should rely more heavily on financial markets for raising funds and

reduce the role of banks. This raises the important question of whether securities market regulation would need to be changed to focus more on systemic risk.

The purpose of this paper is to consider the inter-relationship of bank regulation and securities regulation in order to consider whether a move away from a bank-based financial system towards a market-based system is desirable in terms of crisis prevention. Section 2 considers banking regulation while Section 3 focuses on the regulation of securities markets. As has been stressed, banking regulation is primarily designed to prevent systemic risk while securities regulation is primarily for investor protection and efficiency enhancement. But this does not necessarily imply that a switch from banking to market finance would reduce systemic risk. Sophisticated financial markets require the participation of many intermediaries and systemic risk may be created if any of these go bankrupt and there is contagion to the rest of the financial system. Changing regulation to prevent this may not be very effective. Section 4 argues that a better way to prevent systemic risk if there is a move towards market finance and away from bank finance is to structure bankruptcy law appropriately. Section 5 contains concluding remarks.

2. Bank regulation

2.1 Historical background

It is helpful to start by considering the way in which the focus of central banks and bank regulation became the prevention of systemic risk. Central banks were initially founded with a number of purposes. For example, one of the important roles of the Bank of Sweden, which was founded in 1656, was in the payments system. The reserve specie in Sweden was copper and this made payment cumbersome. To ease the problem it was

the first central bank to issue bank notes. When the Bank of England was founded in 1694 its primary purpose was to raise money to fight the French. Some historians have argued that it was the superior financing ability of the British that allowed them to continually defeat the French throughout the eighteenth century despite the fact that the population of France was three times that of Britain.

In the nineteenth century the focus of central banks shifted towards financial stability and their role increasingly came to be to eliminate crises. The Bank of England was particularly important in this respect. The last true systemic crisis in England was the Overend and Gurney Crisis in 1866. Skilful manipulation of the discount rate allowed them to avoid the worst effects of many severe crises such as the major international crisis of 1873. The techniques the Bank of England developed spread to other European countries and crises became relatively rare in Europe by the turn of the century.

The experience of the U.S. was quite different. In a report on the Second Bank of the United States, John Quincy Adams wrote (Timberlake, 1978, p. 39): "Power for good is power for evil even in the hands of omnipotence." This quotation sums up the American distrust for centralized power of any kind. From 1836 until 1914 the U.S. did not have a central bank, but it had many financial crises -- on average about one crisis every 10 years. These crises were usually followed by recessions. It is interesting to note that despite the real costs of these recessions this was a time when the U.S. did well relative to other countries. In 1870 it had a GDP per head not that different from France and Germany but significantly below that of the U.K. By 1914 it had overtaken all of them. Although there are many explanations for this success, it is consistent with the

U.S. financial system allowing a significant amount of risk to be borne and this manifesting itself in crises and growth.

In 1907 there was a particularly severe crisis that originated in the U.S. and spread to many other countries. A French banker is reported to have commented (Studenski and Krooss,1963, p. 254): "The U.S. is a great financial nuisance."

The severity of the 1907 crisis and the depth of the recession that followed it reignited the debate on whether the U.S. should have a central bank. Finally, in 1913 the Federal Reserve System was created. It started operations in 1914.

The distrust of centralized power that John Quincy Adams' statement illustrates had persisted and as a result the organization of the Federal Reserve System differed from that of a traditional central bank like the Bank of England. It had a regional structure and decentralized decision-making power. During the years after its creation it did not develop the ability to prevent banking crises. The Great Crash of 1929 was followed by a major banking panic in 1933 that led to the closing of banks for an extended period just after Roosevelt took office. The problems of the banking system led to the Glass-Steagall Act of 1933, which introduced deposit insurance and required the separation of commercial and investment banking operations. The Banking Act of 1935 extended the powers of the Federal Reserve System and changed the way it operated. These reforms finally eliminated the occurrence of banking panics almost seventy years after this had happened in the U.K.

The experience of the Great Depression had a profound effect on bank regulation not only in the U.S. but also in most other countries. As a result banks came to be heavily regulated everywhere. In some countries the government intervened directly in

the financial system to allocate resources and usurped the role of market forces. Interest rates were strictly controlled, banks were assured of making a profit and systemic risk was avoided. The purpose of banking regulation came to be to avoid financial crises. The costs of financial crises were perceived to be so high that they should be avoided at all costs.

Whether through intensive regulation or the limitation of market forces governments were able to eliminate systemic risk associated with banks in the post war period. Bordo and Eichengreen (2000) report that between 1945 and 1971 there were no banking crises with the exception of one in Brazil in 1962. Although this elimination of crises reduced the severity of recessions, this gain was not achieved without cost. The reduction or elimination of market forces from the financial system meant that resources were not allocated very efficiently. This was not so much of a problem in the early years after the war when many countries were rebuilding their economies and the allocation of capital to different sectors was relatively clear. Countries such as France, Germany, Italy and Japan did very well during this period. However, over time it became increasingly less obvious where resources should be allocated. This led to a wave of financial liberalizations and the reintroduction of market forces. Unfortunately it also led to the return of systemic risk and financial crises. Caprio and Klingebiel (1996) provide evidence that between 1980 and 1995 three quarters of IMF countries had a crisis of some sort. The problem of systemic risk has returned.

This brief history illustrates that it was systemic risk manifested by crises that became the focus of most central banks. It was also banking crises that led to the creation of the Federal Reserve System and a significant amount of banking regulation. We next

turn to see how the bank regulatory measures in Panel A of Table 1 contribute to the primary objective of avoiding systemic risk but also to investor protection, efficiency enhancement and other broader social goals.

2.2 Guarding against systemic risk

As we have seen, avoiding systemic risk is the prime objective of banking regulation. Systemic risk may be defined as the risk of a sudden, unanticipated event that would damage the financial system to such an extent that economic activity in the wider economy would suffer. Such shocks may originate inside or outside the financial sector and may include the sudden failure of a major participant in the financial system; a technological breakdown at a critical stage of settlements or payments systems; or a political shock such as an invasion or the imposition of exchange controls in an important financial center. Such events can disrupt the normal functioning of financial markets and institutions by destroying the mutual trust that lubricates most financial transactions.

When a shock occurs, problems in one institution or sector of the market can spread to other institutions or markets. Contagious transmission of the shock may occur because of *actual* direct exposures to the damaged sector, or, more insidiously, because of *suspected* exposures. In the absence of clear and convincing evidence to the contrary, market participants are likely to suspect that the institutions least able to withstand a shock have been damaged by it. They will attempt to protect themselves by liquidating their claims on the suspected, weaker institutions.

When markets seize up, they cannot perform their essential function of channeling funds to those with the most productive investment opportunities. Some institutions or sectors may lose access to the markets. Investment spending may suffer in both quality

and quantity. Indeed, if the shock affects the payments system, it may reduce consumption directly.

As an examination of the Systemic Risk column of Table 1 indicates, a substantial number of regulatory measures for banks have been justified on grounds that they help safeguard the financial system from systemic risk. However, research has shown that a number of these measures, such as restrictions on product lines, are ineffectual at best in safeguarding against systemic risk and may weaken regulated institutions by preventing them from meeting the changing needs of their customers. Some measures, such as interest rate ceilings on deposits that were intended to prevent "excessive competition", may actually exacerbate vulnerability to systemic risk. For example, when interest rate ceilings are binding, depositors will have an incentive to shift from bank deposits to assets yielding a market rate of return thus inducing funding problems for banks.

It should be noted also that some regulatory measures work at cross-purposes. For example, geographic restrictions on banking, intended to protect the access to credit of local firms and households, may increase exposure to systemic risk by impeding diversification of regulated institutions and increasing their vulnerability to a local shock. Similarly, the "fit and proper tests" one might want to impose for safety and soundness reasons may pose entry barriers that are too high to achieve the efficiency gains from competition.

2.3 Protecting investors

The second fundamental rationale for financial regulation is the protection of investors against excessive prices or opportunistic behavior by providers of financial

services (see the Investor Protection column of Figure 1). Antitrust enforcement is the most obvious policy tool to counter excessive prices.

Competition policy is motivated not only by the concern to protect consumers from monopolistic pricing, but also by the aim of harnessing market forces to enhance the efficiency of the allocation within the financial sector and between the financial sector and the rest of the economy.[1]

The U. S. was the first nation to adopt antitrust policy, which, of course, is concerned with monopolistic pricing in all markets not just financial markets. Over the past decade the European Commission has increasingly taken a more activist role in promoting competition. Significant attention has been focused on substantial price variations within various categories of financial products offered within the European Union.[2] Although substantial gains have yet to be realized, the European Union's goal of forming a single market in financial services is aimed at increasing competition and lowering prices to users of financial services.

Consumers of financial services – particularly unsophisticated consumers – find it very difficult to evaluate the quality of financial information and services provided to them. In part this is because payment for many financial transactions must often be made in the current period in exchange for benefits that are promised far in the future. But even after the decision is made and financial results are realized, it is difficult to determine whether an unfavorable outcome was the result of bad luck, even though good advice was competently and honestly rendered, or the result of incompetence or dishonesty. Customers face a problem of asymmetric information in evaluating financial

[1] See Section 2.4 for a further discussion of this point.
[2] See European Commission, 1998.

services. Consequently they are vulnerable to *adverse selection*, the possibility that a customer will choose an incompetent or dishonest firm for investment or agent for execution of a transaction. They are also vulnerable to *moral hazard*, the possibility that firms or agents will put their own interests or those of another customer above those of the customer or even engage in fraud. In short, unsophisticated consumers are vulnerable to incompetence, negligence and fraud.

In order to ease these asymmetric information problems, regulators often establish "fit and proper tests" for financial firms to affirm their quality *ex ante*. And *ex post*, strict enforcement of conduct of business rules with civil and criminal sanctions will deter firms from exploiting asymmetric information vis-à-vis customers. Strict enforcement of conduct of business rules also provides firms with incentives to adopt administrative procedures that ensure consumers are competently and honestly served and that employees will behave in a way that upholds the firms' reputation. Conflict of interest rules and customer suitability requirements serve a similar function.

The provision of insurance is another response to the asymmetric information problem faced by unsophisticated consumers. One of the rationales for deposit insurance is to protect unsophisticated depositors of modest means who would find it excessively costly to monitor their bank. This is articulated particularly clearly in the Deposit Insurance Directive of the European Union. Other kinds of financial contracts are also insured for the protection of unsophisticated consumers. In the U.S., for example, the Pension Benefit Guaranty Corporation, a government-sponsored entity insures pension coverage up to $30,000 a year for each worker.

Reserve requirements, capital requirements and liquidity requirements designed to ensure that a financial services firm will be able to honor its liabilities to its customers, have a consumer protection (and microprudential) rationale as well as a macroprudential rationale to safeguard the system against systemic risk. In effect, regulators serve a monitoring function on behalf of unsophisticated customers of modest means.

2.4 Enhancing efficiency

Competition policy and anti-trust enforcement are the key tools for enhancing the efficiency of the banking system as can be seen in the Efficiency Enhancement column of Table 1. In addition to prosecuting price-fixing arrangements, the main emphasis here is to minimize barriers to entry into the financial services industry. In this light, "fit and proper" tests established for consumer protection purposes appear to be anti-competitive and unnecessary. After all, the expectation of repetitive transactions with a client will give firms reason to be concerned with their reputations. This will reduce the risks of adverse selection and moral hazard to customers except when the expected gain from taking advantage of a client is very large or when the interests of a firm's employees differ from those of the owners.

However, primary reliance on a firm's concern for its reputation is not an entirely satisfactory solution to the problem of asymmetric information. Since it takes time to build a reputation for honest dealing, primary reliance on reputation to establish the quality of financial firms tends to restrict entry. This may result in higher transactions costs than would prevail in a perfectly competitive market. For this reason establishing "fit and proper tests" that enable new entrants to affirm their quality ex ante may ease

entry and enhance competition although if entry hurdles are set too high, they will surely compromise efficiency objectives.

The efficient operation of the financial markets depends critically on confidence that financial markets and institutions operate according to rules and procedures that are fair, transparent and place the interests of customers first. This confidence is a public good. It increases flows through financial markets and the effectiveness with which financial markets allocate resources across time and space. But this public good may be underproduced, because the private returns to firms that adhere to strict codes of conduct are likely to be less than the social returns. Unethical firms may be able to free ride on the reputation established by ethical firms and take advantage of the relative ignorance of clients in order to boost profits. The primary efficiency rationale for conduct of business rules and conflict of interest rules is to correct this perverse incentive.

Finally, financial markets provide critical information that helps to coordinate decentralized decisions throughout the economy.[3] Prices in financial markets are used by households in allocating income between savings and consumption and in allocating their stock of wealth. These prices also help firms decide which investment projects to select and how they should be financed. Financial markets will provide better price signals and allocate resources more efficiently the better the access of participants to high quality information on a timely basis. This applies not only to information regarding issuers of financial instruments, but also to financial institutions themselves and the products they sell. Disclosure standards thus also serve an efficiency rationale as well as a consumer protection rationale.

[3] See Santomero and Babbel (1997) Chapters 1 and 2.

Efficiency would also be enhanced if regulators were required to justify each new regulation with a careful assessment of its costs and benefits. This requirement is an obligation of Britain's Financial Services Authority. It should be a fundamental part of the regulatory process everywhere.

2.5 Achieving other social objectives

Governments are often tempted to exploit the central role played by the financial sector in modern economies in order to achieve other social purposes. Budget constrained governments frequently use the banking system as a source of off-budget finance to fund initiatives for which they chose not to raise taxes or borrow. Over time this politically connected lending can have a devastating impact on the efficiency and safety and soundness of the financial system as we have learned from the experience of many central and eastern European countries and the recent Asian banking crises.[4]

The housing sector is often favored by government intervention in the financial system. For example, the U.S. has chartered financial institutions with special regulatory privileges that specialize in housing finance. It has also promoted home ownership by extending implicit government guarantees to securities backed by housing mortgages and by allowing homeowners to deduct mortgage interest on their income taxes. In addition, until its interest rate ceilings were eliminated, the U.S. favored housing lenders by allowing them to pay their depositors a slightly higher interest rate than banks could pay their depositors, a policy that had the effect of enhancing the funds made available to finance housing.

[4] See Santomero (1997, 1998) for a fuller discussion of this issue.

Governments also channel credit to favored uses in other ways. Most countries subsidize financing for exports, sometimes through special guarantees or insurance or through special discount facilities at the central bank. Many countries also require their financial institutions to lend to certain regions or sectors. Since the enactment of the Community Reinvestment Act in 1977, the U.S. has required its commercial banks and thrift institutions to serve the credit needs of low-income areas.

The U.S. has also used regulation to achieve the social objective, illustrated by the John Quincy Adams quoted above, of preventing large concentrations of political and economic power within the financial sector, especially among banks. Until recently the U.S. has restricted the ability of banking organizations to expand across state lines. Restrictions continue against bank participation in nonbanking activities.
Finally, many members of the Organization for Economic Cooperation and Development (OECD) have imposed reporting requirements on banks and some other financial institutions in an effort to combat money laundering associated with the drug trade and organized crime. In the U.S. banks are required to report all currency transactions of $10,000 or more. Currently, Congress is considering even more stringent reporting requirements that have raised serious concerns about violations of privacy rights. Similarly the new Financial Services Authority in the United Kingdom (Davies 1998, p. 2) has adopted the objective of "preventing … financial businesses being used for the purposes of financial crime."

2.6 Discussion

Banking regulation developed as a pragmatic response to unfolding circumstances. Unlike many other cases of government intervention there is not a large unified body of theory that underlies this regulation. The historical account in Section 2.1 illustrates that there are two different approaches to avoiding systemic risk. The first involves appropriate actions by the central bank. The Bank of England mastered these types of technique in the nineteenth century. Crises were avoided with very little, if any, regulation. However, in the U.S. the banking crisis of 1933 and the failure of the Federal Reserve to prevent it led to the use of regulation and in particular deposit insurance and other types of prudential intervention as a way of preventing crises.

The two approaches to avoiding systemic risk are mirrored in the theoretical literature. There are two types of theory concerned with crises. The first is that crises are *random events* unrelated to changes in the real economy. The classical form of this view suggests that panics are the result of some kind of "mob psychology" or "mass hysteria" (see, e.g., Kindleberger (1978)). The modern version, developed by Diamond and Dybvig (1983) and others, is that bank runs are self-fulfilling prophecies. Given their assumptions of first-come, first-served liabilities and costly liquidation of some assets there are multiple equilibria. If everyone believes that a banking panic is about to occur, it is optimal for each individual to try and withdraw her funds. Since each bank has insufficient liquid assets to meet all of its commitments, it will have to liquidate some of its assets at a loss. Given the first-come, first-served nature of deposit contracts, those depositors who withdraw initially will receive more than those who wait. On the one hand, anticipating this, all depositors have an incentive to withdraw immediately. On the other hand, if no one believes a banking panic is about to occur only those with

immediate needs for liquidity will withdraw their funds. Assuming that banks have sufficient liquid assets to meet these genuine liquidity demands, there will be no panic.

An important issue within the Diamond and Dybvig framework is that of equilibrium selection. One simple way of modeling which of these equilibria occurs is to assume it depends on extraneous variables or "sunspots". For example, if a sunspot occurs people believe the bad equilibrium will prevail and this will be self-fulfilling. If a sunspot does not occur people will believe that the good equilibrium will prevail and this will also be self-fulfilling. Another, more sophisticated way is to assume informational imperfections as in Morris and Shin (1998). They show how introducing a small degree of informational imperfection allows a unique equilibrium to be determined.

In the context of the "sunspot view" of crises the policy issue becomes one of equilibrium selection. For example, Diamond and Dybvig (1983) argue that deposit insurance ensures that only the good equilibrium will occur. With deposit insurance people will not have an incentive to withdraw even if they believe others are withdrawing because they know that the government has guaranteed their deposits and the bad equilibrium will be eliminated. Only the good equilibrium will occur. The policy therefore has zero cost and eliminates the problem.

An alternative to the "sunspot" view is that banking panics are a natural outgrowth of the *business cycle*. An economic downturn will reduce the value of bank assets, raising the possibility that banks will be unable to meet their commitments. If depositors receive information about an impending downturn in the cycle, they will anticipate financial difficulties in the banking sector and try to withdraw their funds. This attempt will precipitate the crisis. According to this interpretation, panics are not random

events but a response to unfolding economic circumstances. Building on the empirical work of Gorton (1988) and Calomiris and Gorton (1991) that nineteenth century banking crises were predicted by leading economic indicators, Allen and Gale (1998) develop a model that is consistent with the business cycle view of the origins of banking panics.[5]

In contrast to Diamond and Dybvig (1983) the basic problem is not one of multiple equilibria. Rather the problem is that banks use deposit contracts that involve a fixed promise. If the returns on a bank's assets are low the bank will be unable to satisfy its promise. Depositors will be able to deduce this and there will be a run. Early consumers with urgent liquidity needs and late consumers who do not require liquidity will try and withdraw simultaneously. Since the bank has only limited liquid assets it will be unable to meet everybody's demands. If the bank allocates the liquid resources that it does have on an equal pro rata basis among those attempting to withdraw there will be risk sharing among the early and late consumers. All those who withdraw early will receive the same level of consumption. In equilibrium the fraction of late consumers who withdraw will be such that all late consumers receive the same level of utility otherwise more or less would withdraw. Both the early and late consumers will have reduced consumption when asset returns are low. This is precisely what is needed for optimal risk sharing. Thus financial crises can have beneficial effects. This can explain why banks in the U.S. in the nineteenth century were willing to allow the possibility of runs despite the fact that they could have avoided them by some combination of limiting the promises they made to depositors and reducing the amount invested in high return but risky assets. In the market equilibrium this is not optimal. It is better both privately and socially for

[5] See also Chari and Jagannathan (1988), Jacklin and Bhattacharya (1988), Hellwig (1994), and Alonso (1996)).

banks to invest more in risky assets even though they will on occasion be unable to fulfill their promises and there will be a crisis.

As the historical account of crises illustrates there are costs associated with financial panics. If financial crises involve deadweight costs such as a recession then desirable effects of risk sharing can be offset and there is a trade-off. In Allen and Gale (1998), deadweight costs are introduced by assuming the banking sector has a comparative advantage in allocating resources. If funds are withdrawn from the banking system in a crisis they will not be used as efficiently as they might be. Allen and Gale show that a central bank can avoid these deadweight costs and implement an optimal allocation of resources through an appropriate monetary policy. By creating fiat money and lending it to banks, the central bank can prevent the inefficient withdrawal of funds from the banking system while at the same time allowing optimal sharing of risks.

As Section 2.1 stresses the real cost associated with crises is the spillover effect on the real economy. In the case of a severe recession in which many banks fail, losses will be borne by depositors as well as bank shareholders and the stability of the entire banking sector can be threatened. If banks are liquidated, the aggregate capabilities associated with the banks' teams of employees, who are able to distinguish successfully between good assets and bad, may be destroyed. In this case total lending may be cut back a very large amount and a severe recession may ensue. Although in recent financial crises, such as those in Scandinavia, governments have prevented the widespread collapse of the financial system by extensive intervention, historically this was not the case. Often banks were allowed to fail in large numbers. In such cases the recessions associated with bubbles were often severe. Recovery is not just a question of rebuilding

equity capital and reserves. The banking system itself has to be rebuilt and new teams of employees that can distinguish between good and bad assets have to be developed.

Bernanke (1983), Bernanke and Gertler (1989) and Holmstrom and Tirole (1997) among others have modeled the relationship between the financial and real sectors. Holmstrom and Tirole (1997), for example, develop an incentive model of financial intermediation where intermediaries and firms are credit-constrained.

Developing a unified framework for understanding the role of central bank intervention and comparing this with regulation is a high priority. Eliminating crises through regulation is certainly feasible as the experience of 1945-1971 shows. However, it is not usually optimal to do this. A balanced approach of government intervention involving central bank actions and appropriate regulation is needed. The theoretical framework should identify the nature of the market failure arising from systemic risk and show how it can be corrected with the minimum cost.

3. Securities market regulation

Securities markets are regulated in many countries. Although the U.S. was not the first country to regulate securities markets it did introduce a comprehensive framework of security regulation before other countries. Currently most countries' regulation of securities markets is adapted from the American model. For this reason we will focus on the U.S. system of regulation.

3.1 Historical background

In addition to initiating a significant amount of banking regulation the Great Depression also led to regulation of the securities market by the Federal Government. This regulation had precedents in U.K. law and in U.S. state law.[6]

In the U.K. the Bubble Act of 1720 put prohibitions on the formation of joint stock companies. The Act was passed in the midst of the South Sea Bubble when the stock of the South Sea Company rose by a factor of seven in the first half of 1720 and then collapsed back to somewhat above its initial level by the end of the year. The South Sea Company wanted to prevent other companies being formed and diverting resources away from the bubble in their stock. Loss (1988) reports that the statute's recitals referred to "persons who contrive or attempt such dangerous and mischievous undertakings or projects, under false pretences of publick good, do presume … to open books for publick subscriptions, and draw in many unwary persons to subscribe therein towards raising great sums of money." The Act prohibited this type of scheme and imposed penalties for those involved in the issue and trading of such shares.

Following a report by a Select Committee on Joint Stock Companies the U.K. Parliament passed the Companies Act of 1844. This introduced the principle of compulsory disclosure through the registration of prospectuses inviting subscriptions to corporate shares. The Directors Liability Act of 1890 and the Companies Act of 1900 followed it. The first exposed directors and promoters to civil liability for untrue statements in the prospectus. The second required companies to provide a considerable amount of information in the prospectus. These Acts established the principle of affirmative disclosure and went considerably beyond the prohibition of fraud.

[6] This section draws heavily on Loss (1988).

In the U.S. Kansas was the first state to pass a "blue sky law" in 1911. Other states followed. These laws were designed to protect investors through antifraud provisions, regulation of brokers and dealers and registration of securities. In addition to state blue sky laws, there were other instances of securities regulation in the U.S. prior to legislation triggered by the Great Depression. The Transportation Act of 1920 required railroad issues to be authorized by the Interstate Commerce Commission. The Federal Water Power Act of 1920 allowed the Federal Power Commission to regulate securities issued by public service licensees.

The framework of securities legislation in U.S. consists of seven related but separate statutes that are administered by the Securities and Exchange Commission. These are the following.

1. The Securities Act of 1933
2. The Securities Exchange Act of 1934
3. The Public Utility Holding Act of 1935
4. The 1939 Trust Indenture Act of 1939
5. The Investment Company Act of 1940
6. The Investment Advisers Act of 1940
7. The Securities Investor Protection Act of 1970

The Securities Act of 1933 was concerned with distributions of securities. It specified what information companies must provide when issuing securities in the public markets. It requires prospectuses with a significant amount of affirmative disclosure.

The Securities Exchange Act of 1934 was concerned with publicly traded stocks after they were issued. It has been amended on numerous occasions. The main regulations are concerned with the following.

- Publicly traded firms are required to file accounting returns periodically. Directors, officers and holders of ten percent or more of the shares are also required to provide information on a regular basis.
- Solicitation of proxies is controlled.
- Regulation of tender offers was added in 1968.
- Oversight of the stock exchanges and over the counter markets. Self-regulation is encouraged through self-regulatory organizations such as the New York Stock Exchange, the National Association of Securities Dealers, registered clearing agencies and the Municipal Securities Rulemaking Board.
- Prevention of market manipulation.
- Prevention of insider trading.
- Control of credit to purchase securities by the Federal Reserve System.
- Regulation of clearance and settlement processes.
- Regulation of markets in municipal securities.

The third statute chronologically was the Public Utility Holding Company Act of 1935. This was concerned with the regulation of electric and gas holding companies.

The Trust Indenture Act of 1939 supplemented the Securities Act of 1933 for situations where debt is being issued. It required the filing of an indenture with the SEC. The indenture provides information on the obligations of the trustee in the event of default and various other situations.

Customers of investment companies were perceived to be especially susceptible to unscrupulous behavior by the managers of these companies because of the liquid nature of their assets. The Investment Company Act of 1940, which was subsequently amended both in 1970 and 1980, was designed to prevent some of these abuses. Regulatory provisions were designed to ensure the following.

- Honest management.
- Participation in management by security holders.
- Adequate and feasible capital structures.
- Effective financial disclosure.
- Prevention of selling abuses.
- Desirable incentives for managers through restrictions on forms of compensation.

The Investment Advisers Act of 1940 required all investment advisers to register with the SEC.

Finally, the Securities Investor Protection Act of 1970 is designed to protect investors in the event of a broker going bankrupt. All brokers and dealers registered with the SEC are required to be a member of the Securities Investor Protection Corporation. This provides protection up to pre-specified limits in the event of bankruptcy.

3.2 Protecting investors

As the previous section illustrates much of securities regulation was initiated to protect investors. The disclosure and registration requirements in state blue sky laws, in the Securities Act of 1933 and the Securities Exchange Act of 1934 are all primarily designed to protect investors, especially individual investors. Investors are often at an

informational disadvantage with respect to issuers of securities. Although institutional investors have the leverage to compel an issuer to disclose relevant data and the expertise to evaluate such data, unsophisticated consumers lack both the leverage and the expertise. For this reason governments have found it useful to standardize accounting practices, require the regular disclosure of data relevant to a firm's financial prospects and encourage the development of rating agencies which enable even small investors to take advantage of economies of scale in gathering and analyzing data.

The Congressional hearings that were held in the early 1930's on the operation of stock markets found considerable evidence of stock price manipulation. Various schemes were used to manipulate the stock price so that the manipulator could make a profit at the expense of ordinary investors. The Securities Exchange Act of 1934 made most types of manipulation illegal in order to prevent this kind of scheme.

The U.S. has prohibited insider trading to ensure that corporate officials and owners with better information about the financial prospects of their companies cannot profit at the expense of non-insiders. Until recently, insider trading was not illegal in Germany nor effectively policed in Japan. But with the adoption of the Insider Trading Directive of the European Union and the disclosure of significant insider trading in Japan in the early 1990s this has changed (Herring and Litan 1995).

Takeover rules and regulations to protect minority shareholders are designed to make sure takeovers occur in an orderly way and minority shareholders are not frozen out and exploited by majority holders. Recent work by La Porta et al. (1997) has shown that protection of minority shareholders is an important component of securities regulation.

In many emerging countries lack of minority shareholder protection severely restricts the ability of firms to raise capital.

Investment management firms present special opportunities for fraud and deception. The liquid and intangible nature of such firms mean that they pose special problems compared to manufacturing firms with illiquid tangible assets. It is particularly important that managers of investment firms give extensive information and are closely supervised. The existence of a large number of investors in mutual funds and other types of investment management firms means that there is typically a free-rider problem. No individual investor has an incentive monitor the management properly. This provides a justification for investment management firms to be regulated.

3.3 Enhancing efficiency

Although historically securities regulations were primarily introduced to protect investors they also play an important role in enhancing the efficiency of securities markets. Disclosure standards and registration requirements ensure that information is released to the financial markets. This information will be reflected in market prices and allow prices to accurately reflect values. In other words these regulations help improve the *informational efficiency* of the market.

Prohibitions on manipulation are also important in ensuring that prices accurately reflect underlying values. If manipulation is prevalent there will potentially be a significant misallocation of resources. This takes the form of investment being distorted from the efficient allocation. Perhaps more importantly it will usually reduce the

willingness of investors to participate in markets and this will reduce the total amount of investment that is undertaken.

There is a large academic literature on the desirability of allowing insider trading. One view is that insider trading is desirable because it leads to prices being more informative, which improves the allocation of investment. Another view is that insider trading involves the informed benefiting at the expense of the uninformed and this reduces the willingness of uninformed investors to participate. For a variety of positions on and analyses of insider trading see Ausubel (1990), Fishman and Hagerty (1992), Leland (1992), and Bernhardt, Hollifield and Hughson (1995).

An important point, which is often disregarded, is that informational efficiency and welfare (Pareto) efficiency are different things (see, e.g., Dow and Gorton (1997) and Allen and Gale (2000, Chapter 7)). In special cases, full revelation of information through market prices or in some other way can lead to the first best. In other words, informational efficiency is equivalent to Pareto-efficiency. However, this need not be true in general. For example, in order to reveal information, prices have to fluctuate with changes in underlying information; but price fluctuations themselves are costly to the extent that they impose risk of uninsured changes in wealth on investors. There is therefore a trade-off between allocative efficiency and risk sharing. This is similar to the point made by Hirshleifer (1971) that the public release of information can destroy valuable risk sharing opportunities.

Takeover rules and regulations to protect minority shareholders can also be justified on the grounds of efficiency enhancement. Takeover rules are designed to allow takeovers to take place as smoothly as possible. They thus enhance the operation of the

market for corporate control and help ensure that assets are managed by the team that is best suited to do so. Regulations to protect minority shareholders ensure that they are willing to participate in the capital markets. If they ran a significant risk of being expropriated by majority holders they would simply withdraw and investment and liquidity would be reduced.

Finally, investment management rules play an important role in efficiency enhancement. By reducing the opportunities for abuse by investment managers they again increase the willingness of investors to participate in the financial markets. The rules are designed to reduce agency problems and lower the incentives for managers to take risks. To the extent they are successful in achieving this they will also lead to greater investment and increased liquidity.

3.4 Securities regulation and systemic risk

The basic framework of securities regulation grew out of a desire to protect consumers. Arguably it plays a more important role in terms of enhancing the efficiency of financial markets. Securities regulation has placed a very limited emphasis on the prevention of systemic risk. In the United States, securities firms are not subjected to consolidated prudential supervision focused on the soundness of the institution as a whole that characterizes bank regulation. Instead, the emphasis is on protecting some of the functions that the securities firm performs.

Part of the rationale for this difference in regulatory treatment of banks and securities firms is the assumption that securities firms are less vulnerable to runs and a contagious transmission of shocks and therefore are less likely to be a source of systemic

risk. This difference follows from four key structural differences between banks and securities firms. First, securities firms segregate customer funds from the firms' own funds. Thus bad news about the firms' own assets need not cause concern about the assets of the firms' clients. (Indeed, as noted earlier, in the United States the Securities Investor Protection Corporation protects the assets of clients in case the separation of client funds from the firm's own funds has been compromised through incompetence or fraud.) Moreover, if a securities firm should fail, it is relatively easy to transfer the assets of that firm to another firm with minimal disruption in services to the client.

Second, liabilities of the securities firm are not deposit obligations payable on a first-come, first served basis. Instead, they are generally dated, debt instruments such as commercial paper, collateralized loans or claims that have a pay-off contingent on the performance of the firm. This liability structure protects securities firms from runs motivated by "sun spots" or other disturbances that become self-fulfilling prophecies.

Third, securities firms generally hold liquid, tradable assets that are marked-to-market daily. This relatively transparent balance sheet reduces the vulnerability of the typical securities firm to the asymmetric information problems that arise from the opacity of a typical bank balance sheet. Moreover, in the event that a securities firm is subject to a loss in confidence and a consequent inability to borrow, it can reduce the size of its balance sheet relatively easily, without incurring firesale losses on the liquidation of assets.

Fourth, securities firms do not have direct access to large value payment systems. Although securities firms generate very substantial payments in the course of conducting business for their clients and for their own, proprietary accounts, they rely on commercial

banks to clear and settle such payments. Thus the collapse of a securities firm would impact the payments system only to the extent that it caused the collapse of the bank that clears and settles payments on its behalf.

The upshot of these structural differences is that securities firms should be less vulnerable to shocks than banks. Moreover, in the event that a shock, nonetheless, causes a securities firm to become insolvent, the collapse of a securities firm is less likely to spread contagiously to the rest of the financial system and become a source of systemic risk. In the United States, the most substantial test of these hypotheses to date is the collapse of the Drexel Burnham Lambert Group.

3.4.1 The collapse of Drexel Burnham Lambert

Although the Drexel Burnham Lambert Group (DBLG) had been the most profitable investment bank on Wall Street during the mid-eighties, it was mortally wounded in March 1989 when it pled guilty to six felony charges and agreed to pay the government $650 million in fines.[7] Nonetheless, at the close of 1989, DBLG reported consolidated assets of $28 billion and equity of $835,725,000. The broker/dealer subsidiary of DBLG, Drexel Burnham Lambert (DBL) remained among the best-capitalized broker/dealers in the United States and continued to be an active player in world financial markets. Moreover, the primary-dealer subsidiary of DBLG, Drexel Burnham Lambert Government Securities, Inc. (GSI) remained on the elite list of 44 primary dealers with whom the Fed conducts transactions relating to open market operations. As part of its responsibility for maintaining

[7] This account of the collapse of Drexel Burnham Lambert is largely based on Breeden (1990).

financial stability the Fed monitors primary dealers carefully to make sure that they are sound counterparties and reliable market makers for government securities.

Figure 1 summarizes the financial and regulatory structure of DBLG (Bush, 1990a). The group was privately owned; more than half the shares were owned by Drexel employees and associated private interests, while the remaining shares were held through a Bermuda holding company by a group of foreign investors which included the Societé Arabe d'Investment et de Financement, Ltd., Groupe Bruxelles Lambert, and Pargesa Holdings SA.

DBLG had a number of subsidiaries, two of which were federally regulated. DBL was a registered broker/dealer regulated by the Securities Exchange Commission (SEC) and GSI was a registered government securities dealer subject to regulations established by the US Treasury, enforced by the SEC and monitored by the Fed. The federal government did not regulate other subsidiaries, including DBL Trading and DBL INTERNATIONAL BANK NV, a Curaçao corporation. Neither did it regulate the holding company.

DBLG was subject to functional regulation. In principle, the government's interest in DBLG was in supervising the soundness of a subset of the functions that it performed rather than in the soundness of the institution itself. The functions of interest -- DBLG's role as broker/dealer and primary securities dealer -- were segregated in separately incorporated subsidiaries that were subject to separate regulation and supervision.

Like a bank, DBLG relied on its borrowing capacity and ability to sell (or borrow against) assets to manage its liquidity. The two techniques, of course, are interdependent. DBLG held a very large inventory of low-grade bonds. This was not surprising considering the firm's principal accomplishment. DBLG had extended the range of risk that could be

priced in the primary market and reduced the extent of quantity rationing in the primary market by making active secondary markets in low-grade bonds.

Until 1977, virtually all new issues of publicly traded bonds in the United States carried a Standard and Poor's investment grade rating of BBB or better. Although some low-grade bonds were traded in secondary markets, they were "fallen angels," bonds originally issued with an investment grade rating but subsequently downgraded to below investment grade. During 1977, DBLG began making substantial, initial public offerings of low-grade bonds. From 1977 through 1989, the market for low-grade bonds grew from $1.1 billion to a total outstanding stock of $205 billion, about one quarter of all marketable corporate debt in the United States (Blume and Keim, 1991).

The liquidity of the secondary market deteriorated markedly, however, after a series of events during 1989. First, Drexel's guilty plea to six felonies followed by the indictment, on racketeering and securities fraud charges, of Michael Miliken, a key Drexel employee and the chief architect of the low-grade bond market, undermined confidence in the future of the institution that had been the principal market-maker. DBL generally conducted about 50% of the trading in low-grade bonds. Second, in the summer of 1989, Congress ruled that thrift institutions, which at the time held 7% of the outstanding stock of low-grade bonds, must sell their holdings. Although Congress permitted the thrift institutions five years to liquidate their portfolios of low-grade bonds, the prospect of an increase in supply of low-grade bonds equal to 7% of the outstanding stock led to an immediate decline in market

prices. Third, some innovative covenants that were expected to protect investors against default risk,[8] proved ineffectual.

A series of defaults culminating in the default of the Campeau group in mid-September 1989 further damaged the low-grade bond market in two ways: (1) secondary market trading declined markedly and prices fell sharply with yields on low-grade bonds rising well above their usual spreads over corresponding benchmark Treasury yields[9]; and (2) new issues of low-grade bonds declined sharply.

The decline in the liquidity of the secondary market in low-grade bonds made the financial structure of DBLG unsustainable. The possibility of managing the liquidity of the holding company through asset sales or collateralized loans diminished as the liquidity of the secondary market in low-grade bonds evaporated. As perceptions of the liquidity and value of low-grade bonds declined, the rating agencies reduced their assessment of the quality of the holding company's commercial paper. In December 1989, Standard and Poor's reduced its rating on the commercial paper issued by DBLG from A-2 to A-3. This was a devastating blow since it meant that many important institutional investors -- principally money market funds -- could no longer buy DBLG's commercial paper. Outstanding commercial paper shrank from about $600 million to $180 million.

DBLG was caught in a classic bank liquidity crisis, but without access to the bank safety net. In contrast to most of its peers, DBLG held illiquid loans of uncertain value (partly because of the collapse of the secondary market in low-grade bonds, but also because

[8]Buyers of junk bonds needed either the expertise to assess the credit risk or the comfort of protection from special covenants -- so called "poison puts" -- which required that if the price went down, then the investor must be repaid or coupon increased sufficiently to bring the bond back to par.

[9]No reliable data on volume exist, but DBL reported its average daily volume of trading in junk bonds had declined from $400 million per day before the Campeau default to about $150 million/day in December 1989 (Breeden (1990)).

of bridge loans made in anticipation of new issues of primary securities) and maturing liabilities that could not be rolled over because investors had lost confidence in the value of the firm's assets and its future earning power.

When DBLG found that it could no longer issue liabilities on satisfactory terms, it began to withdraw capital that exceeded regulatory minimums from the regulated subsidiaries, DBL and GSI. The regulatory authorities became alarmed in early February 1990 when one government securities dealer informed the New York Fed that it would no longer trade with GSI. The government securities dealer later came to an agreement with GSI that permitted the two dealers to continue trading, but the event triggered much closer scrutiny of DBLG's regulated subsidiaries. The SEC and the New York Stock Exchange prohibited DBLG from withdrawing additional excess capital from DBL without prior permission.

On Monday, February 12, Standard and Poor's downgraded the rating of DBLG's commercial paper to speculative thus effectively ending its ability to make any new issues of commercial paper. Also during that day, the SEC and the New York Stock Exchange permitted DBL to lend DBLG $31 million to meet commercial paper payments due at the end of the day and to make a $7 million loan to DBL Trading to enable it to make a margin payment at the Chicago Mercantile Exchange. They refused, however, to allow DBL to lend another $100 million to the holding company or DBL trading.

DBLG had $400 million in commercial paper coming due in the next 48 hours. Commercial banks had refused to extend a bridge loan that would enable the holding company to meet the commercial paper payments. The authorities were faced with a choice of letting DBLG draw on almost $300 million of excess net capital in the regulated

subsidiaries to buy time in the hope that some other financing could be arranged or to protect the regulated subsidiaries and permit the default.

This seemed like the beginning of the grim scenario which Gerald Corrigan, President of the Federal Reserve Bank of New York, had articulated for several years: That the failure of a large securities firm, like the failure of a large bank, could disrupt the financial system.[10] Could DBLG go under without generating systemic risk that would affect the fundamental soundness of the securities markets and the financial system?

Although the Fed is never eager to act as lender of last resort, in this particular case the prospect must have seemed especially abhorrent. DBLG had pled guilty to criminal misconduct and no regulatory authority had a complete view of the consolidated position of the group that would enable it to evaluate the group's viability. The authorities did not offer assistance and so DBLG was obliged to file for protection under Chapter 11 of the bankruptcy laws.[11] The authorities limited their role to facilitating an orderly unwinding of the affairs of DBLG and its regulated subsidiaries and trying to prevent the collapse of DBLG from disrupting the financial system.

To a remarkable extent, these goals were accomplished. The anticipated flight to quality in the government securities market was slight and quickly reversed. Moreover, the Dow Jones average actually finished the day above the previous close. Because of concern over settlement risks, some difficulties were experienced in winding down DBLG's positions in markets that did not clear and settle through simultaneous delivery of instruments against payment. To allay fears that that the settlement process might be

[10] For example Corrigan (1987) noted, "The hard fact of the matter is that linkages created by the large-dollar payments systems are such that a serious credit problem at any of the large users of the system has the potential to disrupt the system as a whole."

aborted after delivery of payment to the trustee for DBLG, but before delivery of the securities to the counterparty, both the Bank of England and the Federal Reserve Bank of New York intervened to assure market participants that transactions with the trustee of DBLG would be completed.

Although the authorities did prevent creditors from suffering loss at both of the two regulated subsidiaries, DBL and GSI, once DBLG's liquidity problem became apparent, the market did not distinguish between the solvent, regulated subsidiaries and the rest of the firm.[12] It was not possible to continue to operate two solvent subsidiaries within a failing financial group.[13] DBLG's assets were sold over the next four years by a court-appointed liquidating trust and the proceeds were distributed to Drexel's trade creditors and contingent creditors (including the FDIC) who sought money from Drexel through litigation (Economist, 1994).

3.4.2 Implications of trends since the collapse of DBLG

It is tempting to conclude from the absence of systemic disturbances accompanying the collapse of DBLG that securities firms do not pose a systemic threat to the financial system. Four trends in the international financial system over the last decade, however, suggest that such a conclusion would be premature.

First, leading securities firms have become increasingly international. Not only do they participate in securities markets around-the-clock, around the globe, but also they

[11]The solvent, regulated subsidiaries were not included in the filing. Indeed broker/dealers are prohibited from entering reorganization proceedings.

[12] The fact that fifteen of the twenty-two largest unsecured creditors listed in Drexel's filing for bankruptcy were foreign, raises the question of whether foreign lenders understood the complex legal structure of DBLG and were able to differentiate the regulated entities from those which are not officially monitored.

[13] Firewalls between the regulated subsidiaries and the rest of DBLG did not persuade the market that the regulated subsidiaries would not be brought down by problems in their affiliates and parent; but, the firewalls did exacerbate DBLG's liquidity problem by limiting the group's access to the resources of the regulated subsidiaries.

operate through a complex structure of affiliates in many different countries with differing bankruptcy regimes. DBLG exhibited some of this complexity in its international corporate structure and, indeed, the resolution of DBLG's affairs required cooperation across several different jurisdictions.[14] But, globalization has increased so that the challenge would be even greater with an equivalent firm today.

Second, securities firms have increasingly affiliated with commercial banks and/or insurance firms to form financial conglomerates. Universal banking countries have long integrated the securities business with traditional commercial banking, but over the last decade financial liberalization has enabled firms in the US and Japan, which formerly required strict separation of commercial banking from the securities business, to combine the two activities. When the securities business is integrated with banking, then systemic concerns about banking extend to the securities business as well. Indeed, Continental European supervisors customarily apply consolidated supervision to the securities activities of the universal banks in their domain, just as if they were any other, traditional banking activity.

Third, securities firms and banks have consolidated to form larger and larger entities. Partly this is because the formation of financial conglomerates has often involved mergers and acquisitions, but the pace of consolidation has been even faster among firms in the same segment of the financial services industry. The recent (2001)

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[14] International differences in regulations and market conventions also complicated the resolution of DBLG's affairs. DBLG's global presence meant that official regulators and self-regulatory organizations in a number of different countries were obliged to cooperate to contain the damage from DBLG's collapse. The disposition of Drexel's accounts in the London commodities markets, for example, was impeded by the fact that, unlike the United States, funds for customer positions were not segregated from funds for Drexel's own positions. Consequently it was necessary to put some contracts in default (Hargreaves, 1990). Even the central bank of Portugal lost $100 million of gold because its holdings were not segregated from Drexel's.

Group of Ten report on consolidation in the financial sector found that the number of banking firms decreased over the last decade in almost every one of the thirteen countries surveyed. Consolidation appears to be motivated by hopes for cost savings and revenue enhancements from large, lumpy expenditures on new applications of information technology. Although it is possible that larger financial firms will be less likely to fail, the occurrence of failure is more likely to be associated with systemic risk since the spillover effects on the rest of the financial system are bound to be greater.

Fourth, the largest firms are becoming increasingly involved in global trading activities, particularly over-the-counter (OTC) derivatives. From 1992 to 1999, OTC derivatives markets quadrupled in notional value (Group of Ten, 2001). Moreover, the concentration of activity among the largest firms increased over the decade with the top 3 firms accounting for 27.2% and the top 10 accounting for 54.7% of the total OTC derivatives activities in the largest centers.[15]There is also a corresponding increasing concentration of risk in the clearing and settlement systems for payments and securities transactions.

A series of three international banking crises over the past decade have highlighted some of the dangers inherent in these trends. First, the closure of BCCI exposed some of the difficulties in dealing with the bankruptcy of a large, complex banking organization spanning many different countries.[16] Some countries, such as Great Britain and Luxembourg, wanted to pool the assets of all of the affiliates and share them among all creditors according to a common agreement regarding priority of repayment.

[15] Based on data provided by the national authorities in France, Germany, Italy, Japan, Switzerland, the United Kingdom and the United States reported in Table I.6 of Group of Ten (2001). Unfortunately, data are not available for the entire decade, but concentration increased markedly between December 1998 and December 1999.

Other countries, including notably France and the United States, insisted on ring-fencing the assets of the affiliates located within their borders to assure that national creditors would be repaid before assets could be used to satisfy the claims of creditors of foreign offices of the bank. These conflicts occurred among the relatively homogeneous countries of the Group of Ten who comprise the Basel Committee on Banking Supervision. The Asian financial crisis revealed a still greater problem in winding-up the affairs of a failing financial institution with offices in emerging markets. Some of these countries have ill-defined bankruptcy procedures or procedures that take years to implement.

In addition, the failure of BCCI showed the vulnerability of the payments system to the collapse of an internationally active bank. Even though the collapse of BCCI was widely anticipated and the authorities were careful to orchestrate a closure over the weekend to minimize disruption to the payments system, some banks suffered losses because the bank was closed before both legs of the clearing and settlement process were completed. They had paid yen to BCCI, but had not yet received the European currencies or dollars that were the other legs of the transactions. This problem would have been much more extensive if the closure was completely unanticipated or the authorities had closed the bank in the middle of the clearing and settlement day or if the bank had traded more actively.

Second, the collapse of Barings highlighted some of the problems of dealing with the failure of an international financial conglomerate active in international financial markets. Although the banking and securities businesses of Barings were lodged in separately incorporated units of the bank, Barings Bank was used to fund massive losses

[16] See Herring (1993) for a more complete account of the collapse of BCCI.

in Barings Securities. The separate functional regulators lacked a full picture of the group's consolidated positions and failed to share information that might have flagged emerging problems before the losses mounted. Moreover, losses in Barings Securities threatened to spillover to the exchanges on which it traded. This foreshadowed the potential collateral damage that could occur if procedures for sharing losses in securities exchanges were activated. Indeed, some firms are reported to have been prepared to abandon membership in these exchanges and thus cause a collapse of these markets rather than share in Barings' losses (Group of Thirty, 1998, p.95).

While the final disposition of Barings was in doubt, non-defaulting counterparties of Barings experienced losses due to market fluctuations. The dollar price of the yen changed dramatically and the Nikkei-225 lost substantial value during the several days that the positions were frozen and could not be altered (Group of Thirty, 1998, p. 94). Moreover, concerns about losses increased when it was learned that omnibus accounts with Barings for trading futures and options in Asia were not protected by practices that strictly segregate customer funds in the US and that these funds were being used to meet Barings' expenses.

Finally, the near collapse of the Long-Term Capital Management Fund (LTCM) highlighted the difficulty of winding down a large player in international derivatives markets. If LTCM had applied for bankruptcy,[17] its counterparties would have had the right to terminate, net and set-off derivatives contracts with LTCM. This might have led to a massive liquidation of LTCM's positions in some relatively illiquid markets,

[17] LTCM also illustrated some of the uncertainties introduced by conflicting approaches to bankruptcy. Although most of LTCM's activities took place in the United States, it was chartered in the Cayman Islands. It might have chosen to apply for bankruptcy protection in the Cayman Islands where rights of

depressing prices still further, perhaps transmitting LTCM's problems to other market participants with similar positions and disrupting the orderly functioning of markets. This was the feared "meltdown" that motivated the private-sector bailout of LTCM.

Although none of these crises caused wider, systemic problems, less skillful crisis management could have led to a different outcome. Moreover, the trends toward globalization, conglomeration, consolidation and more extensive involvement in OTC derivatives imply that such problems are likely to be still more complex in the future. The wave of consolidations and the formation of financial conglomerates has increased the number of financial institutions that participate actively in large payment and settlement systems, have large positions in OTC derivatives markets, span national borders and are subject to a wide range of regulatory regimes. Such firms are likely to be managed in an integrated fashion along lines of business without regard for legal entities, national borders, or functional regulatory domains and with substantial intra-group transactions that would be difficult to disentangle in a crisis. Although the laws that govern bankruptcy procedures correspond to the legal entity or the regulated entity, these may no longer correspond to coherent part of the global firm.

4. The role of bankruptcy law

All of this legal and jurisdictional complexity is likely to lead to disorderly behavior in times of financial distress. At a minimum, the information sharing and coordination demands would be formidable. And, the lesson of BCCI, is that at least some authorities will attempt to ring-fence the part of the group they can control to

closeout netting and setoff are less clear than in the United States (The President's Working Group on Financial Markets, 1999).

protect assets for their clients – be they national residents, depositors, brokerage customers or beneficiaries of insurance policies. This does not presume ill will or aggressive behavior on the part of the authorities involved. It's simply the result of differences in approaches to bankruptcy resolution and regulatory objectives.

These conflicts are not just potential. After 16 years of effort the European Union has just reached agreement on a draft Directive on the Reorganization and Compulsory Winding-up of Credit Institutions (European Commission, 2001). The draft Directive requires that insolvency proceedings be instituted solely in the Member State where the credit institution is headquartered and that creditors in all Member States be treated equally. But even the European Union has not attempted to harmonize bankruptcy laws and procedures across Member States. The fundamental problem is that bankruptcy laws and procedures are matters of fundamental law that apply to all entities and reflect national differences in views on the importance of preserving going concern value and the fair and equitable allocation of assets across classes of creditors. Relatively few countries have accepted that financial institutions should be subject to different bankruptcy procedures because traditional procedures take too and long and are likely to lead to inefficient outcomes.

The US, perhaps because of its long experience with bank failures, has recognized that separate procedures should apply, but this has added to the complexity of resolving any financial conglomerate with a major presence in the United States.[18] The insured

[18] Ricki Helfer, former Chairman of the Federal Deposit Insurance Corporation, has noted (Group of Thirty, 1998) that the FDIC has been granted "extraordinary powers as receiver, which enable it to act quickly when a bank fails." "(B)efore the creation of the FDIC, depositors were treated the same way as other creditors. They received funds from the liquidation of the bank's assets after those assets were liquidated. The time taken at the federal level to liquidate a failed bank's assets to pay depositors and close the books averaged about six years – in one case it took at least 20 years." These long delays in receiving the bankruptcy payout provided a powerful incentive for depositors to run at the least sign of trouble.

depository institution is subject to resolution by the FDIC, which is required by law to choose the method of resolution that is least costly to it (although there is a complicated procedure for creating a systemic risk exception). Resolution by the FDIC is further constrained by the Domestic Depositor Preference Act of 1993, which requires that all uninsured domestic depositors be repaid before any uninsured foreign depositor. Similarly, a failed broker/dealer is subject to the special procedures in the Securities Investor Protection Act. An Edge Act subsidiary may be resolved by the Federal Reserve Board, but could also be subject to standard bankruptcy procedures. The parent holding company and most other affiliates are subject to standard bankruptcy proceedings under Chapter 11 (reorganization) or Chapter 7 (liquidation) of the bankruptcy act.

The international patchwork of bankruptcy laws and procedures is unlikely to lead to an efficient resolution of a bankrupt international financial conglomerate. It seems doubtful that going concern value could be protected adequately and, worse still, the unwind is likely to spill-over to damage other institutions and market participants if counterparties attempt to liquidate positions at once, driving down prices and causing problems for other investors with similar positions. Since we lack workable procedures to unwind the affairs of a failing international financial conglomerate in an orderly manner, the result is likely to be a chaotic scramble for assets that could infect other markets and institutions, with potential disruption of the real economy.

Despite *ex ante* protestations to the contrary, the authorities are likely to be reluctant to risk such an outcome and so the result will inevitably be a bailout that will prop up the failing institution. The continuation of recent trends toward globalization, conglomeration, consolidation and increasing reliance on trading of OTC derivatives

implies that we may be confronted with a growing category of firms that are too complex to fail. This, of course, has ominous implications for moral hazard. A market perception that such firms will benefit from official support in times of stress gives them a competitive advantage completely unrelated to their ability to add value to the financial system. It dulls the incentives for creditors to demand disclosure and monitor risk exposures. Weakened market discipline will enable such institutions to take larger, riskier positions without paying higher risk premiums to their creditors. The result may be larger potential insolvencies that require still larger bailouts to avoid system risk. What is needed is a credible procedure to unwind the affairs of an international financial conglomerate in an orderly manner, without systemic spillovers.

4.1 Why financial firms may require special bankruptcy procedures

Standard insolvency procedures apply a stay to all claimants on the firm that is intended to protect the status quo and enable the bankruptcy administrator to realize maximum value for the firm's assets (which may involve selling part or all of the firm as a going concern) and allocate the proceeds to creditors equitably. All of this takes a substantial amount of time. In the United States, which has relatively speedy bankruptcy procedures, the average time for a non-bank to emerge from Chapter 11 reorganization proceedings in the US was 17.2 months and for Chapter 7 proceedings, which apply to liquidations, from 2 to 4 years over the period 1982-85 (Group of Thirty, 1998, p.139). But time is of the essence in dealing with a failing financial firm for three reasons.

First, a financial firm has portfolios of interconnected legal contracts, many of which are traded twenty-four hours a day and repriced daily. A default will trigger

consequences that will cause losses and penalties for the failing institution and cause changes in exposures. If the failing firm is unable to continue trading to hedge its exposures after bankruptcy the value of the assets will decline. Aggressive, dynamic management of the portfolio may be necessary to preserve asset values. Indeed, a stay may cause losses not only to creditors of the failing firm, but also to counterparties who are unable to liquidate, transfer or rehedge their positions. This increases the probability that the failing firm will cause additional failures.

Second, confidence is a crucial input into the production of financial services. If clients and counterparties cannot be reassured that the firm will be able to perform on contracts as promised, the firm's business will simply disappear. Quick action is needed if there is to be any opportunity to harvest going-concern value from the firm.

Third, in addition to confidence, another crucial input into the production of financial services is the skills of the people who run the business. If they are faced with uncertain prospects over an extended period, they will leave for other firms, taking information and expertise with them. This too will undermine efforts to realize going-concern value from the sale or reorganization of part of the firm.

Thus, delays inherent in standard bankruptcy procedures may undercut efforts to preserve asset values for distribution to creditors of the failed firm. Moreover, the stays that normally accompany bankruptcy proceedings may increase the damage to counterparties and creditors of the failed firm increasing the likelihood of systemic consequences.

Over the last twenty years, special international efforts have been made to recognize the special needs of counterparties in derivatives markets through master

agreements that have a statutory exception to override the automatic stay provisions in most bankruptcy laws. But these arrangements, which are designed to reduce systemic risks, may actually exacerbate such risks when, as in the case of LTCM, a failing firm has very large positions in relatively illiquid markets.

4.2 The special problem of derivatives contracts in insolvencies

Master agreements generally permit counterparties in the event of default to close out contracts, net them and liquidate collateral. The US Congress has provided statutory exceptions from automatic stays for repurchase agreements, securities contracts, commodity contracts, swap agreements, and forward contracts (President's Working Group on Financial Markets, 1999, Appendix E). In the event of an insolvency, counterparties are likely to take such actions whatever the specific language of the contract and litigate the legitimacy of the action later.

The explicit intent of Congress was to reduce systemic risk. And, if the failing firm has not taken large positions that could influence market prices, the exceptions will help limit damage and reduce the prospect of knock-on effects on counterparties. The ability to closeout all derivatives contracts with the failed firm, net them and liquidate the collateral eliminates the degradation of collateral that could occur during lengthy bankruptcy procedures and enables counterparties to settle other transactions that may have been linked to the positions with the failed firm. Under the assumption that the failed firm's positions were not sufficiently large to influence market prices, this procedure is likely to minimize the risk of systemic spillovers.

When the failed firm has taken positions that are large enough to move prices, however, these procedures may disrupt markets and exacerbate losses to counterparties and other investors with positions similar to those of the failed firm. In such cases, the simultaneous closing out the failed firms positions and attempts to liquidate illiquid collateral could cause the market to crash directly causing losses to the counterparties and other investors with similar positions. This could lead to additional defaults and additional pressure on illiquid markets as additional collateral is liquidated. More broadly, the resulting increase in market volatility is likely to induce institutions that manage risks with regard to some variant of a value-at-risk model to reduce risk positions across-the-board adding still more downward pressure on prices.

The fundamental problem, as posed by The President's Advisory Group on Financial Markets (1999, p. E-6), is that "(T)he Bankruptcy Code has no mechanism for consideration of the potential system-wide impact of an insolvency by the bankruptcy court, the trustee, or a third party....Once a non-bank is placed into bankruptcy, the interests of its creditors, not the markets or the economy, prevail under the Bankruptcy Code." What is needed in such circumstances is authorization to establish a bridging institution that would unwind the positions of a failed firm over time in an orderly way.

Systemic risk concerns have led the United States to provide for such an arrangement in the case of insured depository institution. Unfortunately, there is no comparable arrangement for securities firms. Yet the prominent participation of securities firms in derivatives markets suggests that they may also be an important potential source of systemic risk. If the authorities lack the means to unwind the positions of a failed securities firm in an orderly way, they are likely to improvise

bailouts. Bailouts in turn are likely to increase moral hazard incentives for greater risk taking and the need for still larger bailouts.

It is important to devise bankruptcy procedures that will safeguard the system against the failure of a large securities firm. Only when it is clear that the authorities will permit such firms to fail can effective market discipline be restored.

5. Concluding Remarks

The Asian crises of 1997 appeared to primarily occur in bank-based financial systems. The fixed nature of banks obligations appeared to play an important part in causing the crises. The primary aim of banking regulation is to prevent crises. It failed to do so in Asia. The actions of central banks also failed to prevent the crises. This failure of traditional methods to prevent crises has led to the suggestion that a move towards market finance and away from bank finance would be desirable in these Asian economies. Markets are heavily regulated in many countries but most of this regulation is concerned with investor protection and efficiency enhancement rather than prevention of systemic risk. The sophistication of modern financial markets means that intermediaries play an important role. Thus moving towards market-based finance does not necessarily reduce systemic risk. We have argued that the best way to deal with systemic risk in markets is through appropriate bankruptcy law rather than regulation.

There are a number of important issues concerned with banking and securities market regulation that we have not had a chance to address in this paper. In particular once a country has developed a strong banking system and robust securities markets, how should banking and securities regulation be organized? What are the merits of an

integrated approach to financial regulation like the Financial Services Authority in the U.K.? Should such an agency be housed in the central bank? Or be independent from the central bank? On balance is it better to avoid a regulatory monopoly and foster competition among regulatory agencies? For an analysis of these issues the reader is referred to Vives (2001), European Central Bank (2001), DiGiorgio and DiNoia (2001), and Kane (1989).

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Table 1

Regulatory Measures and Regulatory Objectives

Regulatory Measures	Systemic Risk	Investor Protection	Efficiency Enhancement	Broader social objectives
A. Banks				
Antitrust enforcement / competition policy		✓	✓	✓
Asset restrictions	✓			✓
Capital adequacy standards	✓	✓		
Conduct of business rules		✓	✓	✓
Conflict of interest rules		✓	✓	
Customer suitability requirements		✓		
Deposit insurance	✓	✓		
Fit and proper entry tests	✓	✓	✓	
Interest rate ceilings on deposits	✓			✓
Interest rate ceilings on loans		✓		✓
Investment requirements				✓
Liquidity requirements	✓	✓		
Reporting requirements for large transactions				✓
Reserve requirements	✓	✓		
Restrictions on geographic reach				✓
Restrictions on services and product lines	✓			✓
B. Securities Markets				
Disclosure standards		✓	✓	
Registration requirements		✓	✓	
Manipulation prohibition		✓	✓	
Insider trading prohibition		✓	✓	
Takeover rules		✓	✓	
Protection of minority shareholders		✓		
Investment management rules		✓	✓	

Adapted from Herring and Litan (1995) and Herring and Santomero (2000).

Figure 1. The Structure of Drexel Burnham Lambert Group, Inc.