The New Financial Architecture

Banking Regulation in the 21st Century

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To Jean, Lincoln, Andrew and Carol, and Jeremy

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Preface

This is the third of a series of books that began with bank failures (*Bank Failures in the Major Trading Countries of the World*, Quorum Books, 1998) and banking crises (*International Banking Crises*, Quorum Books, 1999). Since 1980 more than 130 countries have experienced significant banking sector problems and crises. The large number of bank failures and crises reveals that no country, including the United States, is immune from such problems.

To some extent, the expansion of global banking and changes in financial and information technology contributed to the financial shocks in 1997 and 1998. Huge global banks and hedge funds trading in foreign exchange markets may have exacerbated the situation. BankAmerica, Citicorp, and Bankers Trust all had large trading losses in foreign exchange in 1998. Shortly thereafter, BankAmerica was acquired by Nations Bank, Citicorp and Traveler's merged, and Bankers Trust was acquired by Deutsche Bank (Germany).

Bank failures, crises, global banking, megamergers, and changes in technology are rendering the existing methods of prudential regulation (regulations for bank safety and soundness) weakened at best, ineffective at worst. Federal bank regulators, as well as bank regulators in other countries, are aware of the problems. They are in the process of evaluating new and existing tools to cope with them. One of these tools is greater reliance on market discipline, another is the use of internal-controls-based statistical models such as Value-at-Risk, a third is subordinated debt. Beyond the tools for supervising individual banks, the

global nature of banking requires cross-border supervision and international cooperation. Finally, there is the problem of drafting legislation in developing countries. These are some of the issues that are dealt with in this book. The chapters discuss the issues and some of the parameters, but there are no definitive answers about what the new financial architecture should look like. Additional research and discussion among academics, regulators, politicians, and the organizations that will be regulated is needed to resolve the issues. The resolution will be an ongoing process because change will continually present new opportunities to providers of financial services and challenges to regulators.

The chapters in this book have been written by academics and bank regulators. Earlier versions of several of the chapters were presented at the annual meeting of the Financial Management Association held in Orlando, Florida, in October 1999 and at other venues.

ADDITIONAL RESOURCES

An extensive list of references can be found at the end of each chapter. By definition, those references are to previously published works, and they do not disclose what is going on *right now*. That problem is resolved by turning to the internet. Listed below are some of the major sources of information about the changes that are occurring in the world's financial system. These sources include various central banks, the Bank of International Settlements, the International Monetary Fund, and the Securities and Exchange Commission (SEC). The SEC is included here because of the major strides it is making in regulating financial markets. Some of these sites include links to other sources of information, such as the various Federal Reserve banks which publish up-to-date articles concerning regulations and other topics.

Bank of England
http://www.bankofengland.co.uk/

Bank for International Settlements
http://www.bis.org/

Bank of Japan
http://www.boj.or.jp/en/index.htm

Board of Governors of the Federal Reserve System
http://www.bog.frb.fed.us/
The Federal Reserve provides links to other Federal Reserve banks, foreign central banks, and other bank regulatory agencies, see http://www.bog.frb.fed.us/general.htm

European Central Bank (ECB)
http://www.ecb.int/

This site also provides links to the central banks of countries that belong to the European Union.

International Monetary Fund
http://www.imf.org/

U.S. Securities and Exchange Commission
http://www.sec.gov/

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Regulating International Banking: Rationale, History, and Future Prospects

Ronnie J. Phillips and Richard D. Johnson

INTRODUCTION

International agreement on the regulation of global financial institutions is a relatively recent phenomenon. The collapse of the Bretton Woods international monetary system, beginning in 1971, and the increase in cross-border investments by multinationals, as well as the problem of recycling petrodollars, have caused bank supervision agencies in various countries to recognize the need for greater cooperation to reduce the risks to the global financial system. The Basle Accord of July 1988 was a major step in moving toward a convergence of supervisory regulations governing the capital adequacy of international banks. Since that time, the United States has legislated major reform of deposit insurance with the passage of the FDIC (Federal Deposit Insurance Corporation) Improvement Act of 1991, and U.S. banks have experienced an unparalleled period of profitability. The creation of the European Monetary Union, which promises to bring about changes in the structure and organization of banking in Europe, will undoubtedly impact the global environment for cooperation among bank supervisory agencies.

The final decade of the twentieth century offered a window of opportunity for global cooperation in the regulation of international banking. The purpose of this chapter is to present the rationale underlying international banking regulation, review the history of such regulation, and provide observations on the future prospects for global bank supervisory agreements.

WHY DO WE REGULATE MULTINATIONAL BANKS?

To understand the rationale for regulating multinational banks, it is first important to review the history of the regulation of domestic banks. Though the detailed history varies widely from country to country, the earliest banks were not the same kind of institutions that we have today. Currently, banks serve both deposit and lending functions; that is, they issue liabilities that are a convenient medium of exchange, and are intermediaries between borrowers and lenders. The great early banking houses loaned out their own capital, not other people's money. There existed other specialized institutions that accepted deposits for safekeeping. It is only later that the two functions, lending and deposit taking, were fused into banking institutions—usually connected to the needs of the sovereign for financing expenditures (Dale 1984, 54). The intertwining of these two functions necessarily implies that banks are subject to the problem of banks runs, since the funding source for assets is mostly depositors' funds and, to a much lesser extent, the bank's capital. In the early nineteenth century, banks operated with capital ratios in the 40 percent range in Europe and 70 percent in North America. In the United States, as the state or federal government began to play a greater role in the prudential regulation of banks, the capital ratios declined dramatically. Because banks also lacked transparency, they were prone to runs (Dale 54).

In the United States, the involvement of the federal government in banking regulation began during the Civil War. The purpose of the National Banking Act was to create a safe and uniform currency but, and just as important, provide a source of demand for government debt. During the Great Depression, the U.S. financial system was compartmentalized into commercial banks, investment banks, savings and loans, and so on, and deposit insurance was implemented. Though a few U.S. banks had an international presence, it was not until after World War II that international banking began to expand. The Marshall Plan, which encouraged U.S. foreign direct investment, provided the impetus for the expansion of global banking. However, bank regulation changed slowly—understandable perhaps in a world with a system of fixed exchange rates and dominated economically by the United States.

Domestic events and concerns dominated banking supervision and regulation. As it developed over 150 years in the United States, the rationale for the prudential regulation of domestic financial institutions can be summarized as (1) the protection of (unsophisticated) depositors, (2) monetary stability, (3) the promotion of an efficient, competitive financial system, and (4) consumer protection. It is *not* the purpose of domestic banking regulation to prevent all bank failures, to substitute government decision making for private bank decisions, or to favor certain groups

over others (Spong 1994, 5–12). In the United States, federal deposit insurance and a strengthened Federal Reserve System provided the protection and the stability. Promoting an efficient and competitive system was much more difficult to achieve because it implied that, since market forces could not be fully relied upon, regulatory policy would have to be implemented that replicated a "market" solution. Geographical and product restrictions, as well as enforced compartmentalization, conflicted with the goal of efficiency in the provision of financial services. At the same time, the prudential regulation of banks provided an opportunity to expand regulation to include questions of disclosure and consumer protection. The result in recent years has been an increase in complaints from banks about the regulatory burden.

It would appear that the rationale for international banking regulation would follow a similar development. Actually, however, the demand for international banking regulation originated from the bankers who believed that there was an absence of a level playing field, which could be rectified by the passage of laws. Thus, in the United States, we have the International Banking Act of 1978, which placed foreign and domestic banks on an equal footing in the United States with respect to branching, reserve requirements, and other regulations (Spong 1994, 25). The problem, as the history of federal government versus state government banking regulation aptly demonstrates, is that competition in regulation does not necessarily promote safety, stability, or efficiency in the financial system. The experience of the "free banking" period in the United States, between 1836 and 1863, provides a lesson on what happens in the absence of uniform bank regulation and supervision.

Thus, since World War II, and especially in the past quarter century with the move to floating exchange rates, the world has been in a period with similarities to the free banking era in the United States. However, it is not currently possible to employ the national banking solution to the present-day global environment because there is no global government and no single global regulatory agency for international banking. Hence, the only alternative is the requirement that the national bank supervisory agencies cooperate to achieve the goals of regulation.

Another important difference is that the protection of the unsophisticated depositor and consumer protection are not presumably goals of global regulation. In principle, unsophisticated depositors should not be involved in international banking, and there is no need for consumer protection legislation (e.g., truth in lending). This leaves two principal rationales for global banking regulation: monetary stability and the promotion of efficiency and competition. In practice, these two goals are intertwined into the fundamental problem of systemic risk. Systemic risk has been defined "the likelihood of a sudden, usually unexpected, collapse of confidence in a significant portion of the banking or financial

system with potentially large real economic effects" (Bartholomew and Whalen 1995, 7). Three important components of prudential regulation are regular bank examinations for safety and soundness, lending and investment restrictions, and maintenance of adequate capital. In practice, the problems of international banking have been dealt with through agreements among bank supervisors on the fundamentals of bank regulation and supervision and the mandating of minimum capital adequacy standards. Countries vary widely in the range of activities that are permitted for banks (investment banking, insurance, and so on), and therefore there has been to date no consensus on whether to impose a specific model, such as universal banking, as part of an international agreement.

Edward Kane and others have pointed out the principal-agent problems involved in domestic banking regulation. The regulators are presumed to be acting in the interest of the public (or taxpayers), but it is difficult to implement an incentive scheme that would produce regulation at a minimum cost to the public. The problem, in essence, is that regulators cannot typically be held personally liable for losses in the banking system during their watch. Kane (1996) proposes that incentives be built into regulators' contracts as a way to minimize bad behavior for which the regulators could escape the consequences. The problem is that regulators really have a mix of public and private motivations for being regulators. In the case of global regulation, the regulators are presumably acting in the interest of global depositors. This raises a dilemma if regulators bail out large financial institutions where presumably the creditors of the institution are not unsophisticated investors. This requires that the regulators rely upon systemic risk or bank contagion—the fear that the collapse of one financial institution may lead to the collapse of otherwise solvent institutions—as the rationale for bailing out large institutions. In bailing out large institutions, the regulators must provide reasoning why the private institutions did not adequately prepare for the default of an institution of which they are a creditor. This creates a problem of moral hazard since the institution's behavior may mean that it takes on more risk under such circumstances.

Alan Greenspan stated that optimal bank regulation is "regulation designed to assure a minimum level of prudential soundness" (Greenspan 1996, 1). This view is based on the assumption that banks manage risks and, at the same time, play an important role in the payment system. Given this view of banks, the regulators must supervise banks to control risk to prevent a systemic crisis.

According to George Benston and George Kaufman, banking regulation should seek to mimic the operation of free markets. Optimal regulation would involve a policy whereby regulators would invoke prompt corrective action when capital-asset ratios reach specified levels (Benston

and Kaufman 1996, 696). Mathias Dewatripont and Jean Tirole (1994) have developed a model of optimal regulatory behavior based on a double moral hazard dilemma. Optimal regulation involves an incentive structure which leads regulators to intervene only when bad management results in underperformance by a bank manager (Dewatripont and Tirole 1994, ch. 6).

Our view, although not inconsistent with the above ideas, differs somewhat from each. In its strictest sense, banking regulation refers to the framework of laws and rules under which banks operate—these are the rules of the game. Supervision in its strictest sense refers to the banking agencies' monitoring of financial conditions at banks under their jurisdiction and to the ongoing enforcement of banking regulation and policies (Spong 1994, 5). Optimal supervision would promote allocative efficiency in the carrying out of the regulations, assuming, if we wish, self-interest-motivated behavior of the regulatory agencies. In the regulation of international banking (as also in domestic banking), regulators must balance the problems of prudential regulation, market discipline, and moral hazard. In practice, this implies regular examinations, greater transparency, and capital adequacy standards.

HISTORY OF SUPERVISORY COOPERATION

The Bretton Woods international monetary agreement, which established the post–World War II system of fixed exchange rates among the major Western economies, collapsed in March 1973 when the United States unilaterally floated the dollar. Although President Richard Nixon did not begin to engineer the official demise of the system in August 1971, it was clear by the late 1960s that the end was near for the fixed exchange quasi-gold standard that had operated for a quarter of a century. The demise of fixed exchange rates, and the floating of the major currencies, set the stage for difficulties in the international payments system. In 1972 an informal group of banking supervisors in the European Economic Community (EEC) established an informal and autonomous group within the EEC with responsibilities for operational banking supervision (see Table 1.1). The principal aim of this group, known as the Group de Contact, was to achieve greater understanding and cooperation among the bank supervisory agencies in the EEC (Cooke 1981, 238–39).

The floating of the U.S. dollar, and then the Arab-Israeli war in October 1973, precipitated a dramatic increase in the price of oil and the subsequent world depression of 1974–1975. Global banks responded by promoting three developments in financial markets: globalization, innovation of financial practices and instruments, and speculation (Kapstein 1991, 3). The rules of the game had changed for global banking,

Table 1.1
A Chronological History of the Regulation of International Banking, 1972–1999

Date	Group/Event	Rationale/Accomplishment
1972	Groupe de Contract	To achieve closer understanding and practical cooperation between the supervisory authorities of the EEC
September 1974	Basle Committee of Supervisors created	Established in the aftermath of serious disturbances in international currency and banking markets (notably the failure of Bankhaus Herstatt in West Germany).
February 1975	Basle Committee first meeting	The first task was to consider methods of improving "early-warning" systems.
December 1975	Basle Concordat	Five key principles established for international supervisory cooperation
July 1979	International Conference of Banking Supervisors	Bank of England-host
May 1983	Basle Committee:	"Principles for the Supervision of Banks' Foreign Establishments" Set down the principles for sharing supervisory responsibility for banks' foreign branches, subsidiaries and joint ventures between host and parent (or home) supervisory authorities.
June 1983	EEC Advisory Banking Committee	Directive on consolidated supervision
July 1988	Basle Accords	Capital measurement system was approved by the G-10 central bank Governors and released to the banks.
April 1990	Supplement to the 1983 Concordat was issued	Intended to improve the flow of prudential information between banking supervisors in different countries.
November 1991	The 1988 capital framework was amended	To give greater precision to the definition of those general provisions or general loan-loss reserves which could be included in capital. (BCCI failure)
September 1993	Basle Committee	A statement was issued confirming that all the banks in the G-10 countries with material international banking business were meeting the minimum requirements laid down in the Accord.

January 1996	a formal Amendment to the Capital Accord,	Designed to incorporate within the Accord the market risks arising from banks' open positions in foreign exchange, traded debt securities, equities, commodities and options.
May 1996	Basle Committee and IOSCO released a Joint Statement	Responded to a number of concerns expressed by G-7 Ministers of Finance at the 1995 Halifax Summit and described the steps banking and securities regulators were taking together to preserve the stability of the financial system.
June 1996	International Conference of Banking Supervisors (ICBS)	supervisors from one hundred and forty countries attended
October 1996	Basle Committee	Released a report drawn up by a joint working group also containing supervisors from offshore centers, which presented proposals for overcoming the impediments experienced by banking supervisors in conducting effective consolidated supervision of the cross-border operations of international banks.
September 1997	Core Principles	Core Principles for Effective Banking Supervision issued by the Basle Committee
July 1999	Basle Committee release on credit risk	Capital adequacy standards revised.

and weaknesses in the international payments system were exposed with the collapse of Bankhaus Herstatt in 1974. Henceforth, greater coordination of banking regulation and supervision would be necessary in the post–Bretton Woods era. The failure of Bankhaus Herstatt occurred after the irrevocable settlement of the Deutsche Mark leg of foreign exchange transactions, but before the settlement in dollars had occurred. "This left Herstatt counterparties expecting the dollars facing non-payment and caused major disruption to the operations of the Clearinghouse Interbank Payments System (CHIPS)" (Borio 1995, 102). Confidence in the counterparty system was badly shaken, and the risk resulting from the non-simultaneous settlement of the two legs of a cross-currency settlement became known as a "Herstatt risk" (101). As a result of the failure, CHIPS adopted new risk control measures.

Along with the Herstatt bank failure, there was the failure of the Franklin National Bank of New York and the British-Israel Bank of London in 1974. According to Ethan Kapstein, it was these three failures that led to the formation of a G-10 committee on banking regulations and supervision that eventually became known as the Basle Committee (Kapstein 1991, 4). The governors of the world's central banks issued a statement in September 1974 (summarized by Cooke): "[W]hile it was not practical to lay down in advance detailed rules and procedures for the provision of temporary support to banks experiencing liquidity difficulties, the means were available for that purpose and would be used if and when necessary" (Cooke 1981, 238). The governors also created a new standing committee—the Committee on Banking Regulations and Supervisory Practices. The first meeting of this committee, which became known as the Basle Committee, took place in February 1975 (238).

The low inflation, rapid growth, and exchange rate stability of the postwar period was replaced in the 1970s by inflation and volatile interest and exchange rates (Kapstein 1991, 3). At the same time, in the United States and other G-10 countries, a process of deregulation of industry began that included the financial services industry. In the United States, the International Banking Act of 1978 was passed, which sought to put domestic and foreign banks on an equal footing, and the Depository Institutions Deregulation and Monetary Control Act of 1980 was enacted, which placed various financial institutions on a more equal and efficient footing (Spong 1994, 25). American money-center and superregional banks had increased their overseas branches from 100 in the 1950s to over 800 by the early 1980s (Kapstein 1991, 3).

The Bank for International Settlements and the Basle Committee

The Basle Committee was formed under the auspices of the Bank for International Settlements (BIS), which was established in 1930 by a de-

cision of the Hague Conference, which dealt with the German reparations payments after World War I (Bakker 1996, 89). The central banks of the world were the members of the BIS, although it was not until September 1994, when Federal Reserve Chairman Alan Greenspan assumed the seat reserved for the United States, that the United States formally acknowledged the role of the BIS in maintaining the stability of the international financial system (90). The BIS is a public limited company whose thirty-three shareholders comprise almost all European central banks, plus the central banks of Australia, Canada, Japan, and South Africa. The bank is managed by a seventeen-member board of directors that, since 1994, has included the chairman of the board of governors of the Federal Reserve System and the president of the Federal Reserve Bank of New York. The present (1999) general manager is Andrew Crockett of the Bank of England. One of the most important functions of the BIS is to promote voluntary cooperation between central banks (92).

The Basle Committee on Banking Supervision, as noted above, was established to compare and, if possible, harmonize national rules on supervision in order to bolster confidence in the banking system. The two major tasks confronting the committee were (1) to adapt the national supervisory system within each country in order to cope with the wider dimensions of their major banks' businesses and (2) to promote close cooperation between national authorities in monitoring the activities of the overseas branches, subsidiaries, and affiliates of their own banks, as well as the offshoots of foreign banks in their own territories (Cooke 1981, 239). The fundamental problem with international cooperation and coordination is that each country has grown up with its own particular, perhaps unique, banking supervisory structure. In some countries banking supervision is separated from the monetary authority, and in others it is not. Some countries have detailed statutory frameworks; others rely more on informal and flexible arrangements (239).

The former general manager of the BIS, Alexandre Lamfalussy, explained the importance of cooperation in bank supervision:

> The essential point is that, nowadays, the central banks cannot ensure proper supervision of banking without an international association of supervisory authorities, because the major banks are active all over the world; certainly where it is a question of providing appropriate assistance for wealthy customers and international business. And the working day never ends any more. During a twenty-four hour period, the banks just move along their positions on the stock markets to the next time zones. . . . [this] justifies the existence of the BIS: an impartial party is the best intermediary for everyone. That is how the G10 arrives at agreements of such quality that almost all central banks in the world automatically impose them on their own banking systems. (quoted in Bakker 1996, 94)

The Basle Committee comprises representatives from Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Sweden, Switzerland, the United Kingdom, and the United States. In the concordat on international supervisory cooperation adopted in 1975, the committee established two principles for its work on international banking supervision: (1) "that no foreign banking establishment could escape supervision" and (2) "that the supervision should be adequate" (Basle Committee 1989, quoted in Kapstein 1991, 6). It is important to note that the concordat does not address, and was never intended to address, the issue of lender of last-resort facilities to the international banking system. Indeed, there is no necessary and automatic link between banking supervision and the lender of last-resort provision (Cooke 1981, 240). The recommendations of the concordat, as summarized by Cooke, include the following:

(1) The supervision of foreign banking establishments should be the joint responsibility of host and parent authorities.

(2) No foreign banking establishment should escape supervision, each country should ensure that foreign banking establishments are supervised, and supervision should be adequate as judged by both host and parent authorities.

(3) The supervision of liquidity should be the primary responsibility of host authorities since foreign establishments generally have to conform to local practices for their liquidity management and must comply with local regulations.

(4) The supervision of solvency of foreign branches should be essentially a matter for the parent authority. In the case of subsidiaries, while primary responsibility lies with the host authority, parent authorities should take account of the exposure of their domestic banks' foreign subsidiaries and joint ventures because of the parent banks' moral commitment in this regard.

(5) Practical cooperation would be facilitated by transfers of information between host and parent authorities on the territory of the host authority. Every effort should be made to remove any legal restraints (particularly in the field of professional secrecy or national sovereignty) which might hinder these forms of cooperation. (Cooke 1981, 240)

Though the concordat was an important first step, according to Richard Dale, placing the primary responsibility for supervision with the host country conflicts with the committee's recommendation that the supervision of international financial institutions should occur on a consolidated basis. The problem was that host countries might expect parent authorities to supervise local subsidiaries, while home countries might expect those subsidiaries to be supervised by the host country. Another apparent weakness in the agreement was the failure to address the differing supervisory standards among countries (Dale 1984, 173). These and other confusions delayed the final release of the concordat to the

public until March 1981, even though it had been adopted five years earlier by the central bank governors (174).

In July 1979, an International Conference of Banking Supervisors was held at the Bank of England. It was attended by bank supervisors from about eighty countries. The topics discussed included supervisory cooperation, division of supervisory responsibility, capital and liquidity adequacy, foreign exchange controls, monitoring on a consolidated basis, and the role of offshore banking centers. This first worldwide meeting of bank supervision personnel was followed by various regional and more specialized meetings including a meeting of G-10 supervisors in Basle in October 1980 on the issue of offshore banking center supervision (Cooke 1981, 240).

Beginning in 1981, the committee began issuing an annual *Report on International Developments in Banking Supervision* (Kapstein 1991, 5). To remedy the problems with secrecy laws in a number of countries, such as Germany and Switzerland, the committee developed the concept of "consolidated supervision as a means of giving practical effect to the principle of parental responsibility" (6). The failure of Banco Ambrosiano in Italy pointed to the deficiency in the concordat mentioned above; namely, who has responsibility for a subsidiary? The Italian authorities argued that they had no responsibility for the liabilities of the Banco Ambrosiano subsidiary in Luxembourg because it was not a bank. The Italian authorities, however, provided full backing for the Banco Ambrosiano liabilities in Italy (7).

At the time of the Banco Ambrosiano failure, there was also the announcement in August that Mexico would be unable to make the interest payments coming due to foreign banks. The fear was that international trade would be disrupted and that capital inadequacy would lead to the collapse of a number of large banks (9). Since 1984 there has been an annual examination of the provision made by the commercial banks of the G-10 in regard to sovereign credit risk of loans to debtor countries (Bakker 1996, 93–94).

In May 1984 Continental Illinois required a $6 billion infusion of Federal Reserve funds to meet its financial obligations, but it failed nevertheless. The subsequent guarantee of all deposits led many to fear that a policy of "too big to fail" had been firmly established in the United States. This failure also exposed the inadequacies of the U.S. capital-adequacy standards, which were simplistic when compared with those in other G-10 countries such as Belgium, France, and Great Britain (Kapstein 1991, 16). These countries had already established "risk-weighted" capital standards requiring banks to hold more capital with riskier portfolios. At first the United States resisted the idea of risk-weighted capital standards partly because of the large number of American banks—over 10,000 at the time. The European system of determining

capital adequacy on a case-by-case basis could not be applied in the United States (17). In January 1986 the United States released for public comment its proposal for a "supplementary" risk-weighted capital-adequacy standard for commercial banks. At the same time, the European Community had been discussing the harmonization of capital standards. In July 1986 the United States and the United Kingdom began to discuss an agreement on the evaluation of capital adequacy and announced, in January 1987, that they had reached common standards. This accord provided a common definition of capital, the adoption of a risk-weighted system for evaluating capital adequacy, and the inclusion of all off-balance-sheet commitments in capital-adequacy determinations (19). These standards were released in September 1997 (see Table 1.2).

This agreement set the stage for the Basle Accord, and on December 10, 1987, the committee announced that it had reached agreement on a proposal for "international convergence of capital measurements and capital standards" (cited in Kapstein 1991, 23). The committee members met again to discuss revisions of the preliminary agreement, and the final version was released on July 15, 1988. The accord received high praise.

> [T]he Basle Capital Accord of 1988 . . . helped to reverse a prolonged downward tendency in international banks' capital adequacy into an upward trend in this decade . . . [and] effectively contributed to enhanced market transparency, to international harmonization of capital standards, and thus, importantly, to a level laying field within the Group of Ten (G-10) countries and elsewhere. (de Swaan 1998, 231)

Has this accord made a difference? A recent study conducted by John Wagster examined the causes of the international credit crunch of 1989–1992. Wagster examined four hypotheses that could explain the reduction in loans experienced over that period. Included in the hypotheses was the impact of the Basle Accord capital standards (Wagster 1999). Since larger amounts of capital are required for loans when compared to marketable securities, implementation of the standards may have been a major factor. The study also examined the hypothesis that additional regulatory scrutiny may have been a major factor in explaining the reduced availability of lending services. The study indicates that implementation of the international capital standards may have contributed to the credit crunch, although the strongest support was presented for increased regulatory scrutiny (137).

Examination of the movements in capital following the implementation of the Basle Accord standards led Wagster to question the effectiveness of the capital standards. Wagster's results indicated that banks increased their systemic risk following the implementation of the standards and led him to question the effectiveness of the standards (137).

Table 1.2
Core Principles for Effective Banking Supervision: Basle Committee on Banking Supervision, September 1997 (Summary of the Responsibilities of the Bank Regulatory Agencies)

Preconditions for Effective Banking Supervision

1. Clear responsibilities and objectives for each agency involved.

Licensing and Structure

2. The permissible activities must be clearly defined.
3. The licensing authority must have the right to set criteria.
4. Review and reject any proposals to transfer significant ownership
5. Corporate affiliations or structures do not expose the bank to undue risks.

Prudential Regulations and Requirements

6. Banking supervisors must set prudent and appropriate minimum. capital adequacy requirements for all banks. For internationally active banks, these requirements must not be less than those established in the Basle Capital Accord and its amendments.
7. Evaluation related to the granting of loans and investments
8. Evaluating the quality of assets and the adequacy of loan loss provisions and loan loss reserves.
9. Banking supervisors must be satisfied that banks have management information systems that enable management to identify concentrations within the portfolio and supervisors must set prudential limits to restrict bank exposures to single borrowers or groups of related borrowers.

Table 1.2 (*continued*)

10. Banks to lend to related companies and individuals on an arm's-length basis.
11. Procedures for identifying, monitoring and controlling country risk and transfer risk reserves against such risks.
12. Accurately measure, monitor and adequately control market risks.
13. Comprehensive risk management process where appropriate, to hold capital against these risks.
14. In place internal controls that are adequate.
15. Strict "know-your-customer" rules, that promote high ethical and professional standards

Methods of Ongoing Banking Supervision
16. On-site and off-site supervision.
17. Regular contact with bank management.
18. Prudential reports and statistical returns.
19. Validation of supervisory information.
20. Supervise the banking group on a consolidated basis.

Information Requirements
21. Each bank maintains adequate records drawn up in accordance with consistent accounting policies and practices.

Formal Powers of Supervisors
22. Banking supervisors must have at their disposal adequate supervisory measures to bring about timely corrective action when banks fail to meet prudential requirements.

Cross-border Banking
23. Global consolidated supervision over their internationally active banking organizations.
24. Information exchange with the various other supervisors involved.
25. Local operations of foreign banks to be conducted to the same high standards as are required of domestic institution.

Wagster found that Canadian, U.K., and German banks lowered capital and may have achieved a competitive advantage over U.S. and Japanese banks (137). These, and other concerns about the original accord, have led to a revised proposal that has been distributed for discussion and debate.

The 1999 Basle Proposal

The Asian crisis of 1998 underlined that weak supervision can have severe repercussions on financial stability (de Swaan 1998, 233). In this environment, the Basle Committee has submitted for comment a proposal to address the limitations of the current regulations. Since the accord proposal was put into place, securitization has become more significant in the financial landscape. Banks have been able to limit their capital requirements through increased use of securitization. The current standards do not appear to be effective in classifying risks in loans. Regardless of market rating, all corporate loans carry the same risk weighting.

The proposal calls for changing the risk-weighting structure based on external credit ratings provided by agencies such as Moody's and Standard & Poor's (Lopez 1999, 2). The highest rated loans would have a weighting of 20 percent; the lowest rated claims, a weighting of 150 percent. Loans that are not rated would have a 100 percent weighting (2).

The proposal includes some discussion of substitution of a bank's credit evaluation system if it can be demonstrated to be effective (de Swaan 1998, 232). The proposal calls for greater supervisory review of a bank's risk management and capital allocation procedures, suggesting that, in some instances, greater amounts of capital than called for by the committee could be required (Lopez 1999, 2). Finally, the proposal calls for greater disclosure of risks by commercial banks. This view is consistent with the call for extended use of market discipline and increased transparency (de Swaan 1998, 232).

Other International Agreements

The difficulties of integrating international banking supervision can be illustrated by the problems found in the European Community (EC), which currently comprises fifteen European nations covering most of Western Europe. The EC created the framework for a single European market for retail banking services on January 1, 1993. The purpose of the integrated market is to increase competition in banking services and improve the efficiency of financial institutions. The European Commission issues regulations and directives, both of which are binding on member countries (Zimmerman 1995, 36). The first directive, issued in 1977,

sought to establish the rules for banks to establish branches in member countries. The host-country rule that was adopted requires the bank to gain permission from the supervisory authorities in the host country before they are allowed to operate in the host country. The Second Banking Directive, adopted in 1989, mandated the harmonization of standards for prudential supervision, mutual recognition by member states in the way in which they apply those standards, and home country control and supervision (37). The mutual recognition of a single banking license eliminates the need for EC banks to obtain banking charters from the host country. Home-country rule requires that host regulators give up primary regulatory responsibility for foreign institutions to the home country.

The motivation for changes in EC banking is to remove barriers to cross-border banking services and to increase competition in retail banking. The system that was in place prior to the initiatives was highly nationalized with a focus on collusion and regulatory capture rather than competition (40). Large price differentials were prevalent for retail banking services among the EC members (41). Implementation is predicted to lower costs for retail services in the countries with the most significant barriers. Increased competition is expected to reduce profitability for banks in member states. Increased competition is also expected to result in some concentration since smaller, less efficient banks will not be able to compete (40).

Implementation of the directives for a single market in banking has been quite successful. Based on a study of twelve member states on ten key banking directives, 82 percent of the states had properly transposed the directives into national statutes by the end of 1983. In many states in which statutes had not yet been enacted, actions were in process (46).

THE FUTURE OF INTERNATIONAL BANKING REGULATION

There are three basic approaches to international banking regulation in the future: the first would be a move toward greater reliance on the discipline of the market system, the second would be the establishment of a supranational regulatory agency, and the third would be a continuation of what we have—a combination of reliance on market discipline, an expandable role for banks' internal controls, and international supervisory cooperation. The third appears to be the preferred approach for the foreseeable future.

Alan Greenspan sketched this framework for bank regulation and supervision in the future in a speech to the American Bankers Association on October 11, 1999. The key components are disclosure and market discipline, internal risk assessment, and capital adequacy. Chairman

Greenspan made the following points regarding the future of banking regulation:

1) The scope and complexity of prudential policies should conform to the scope and complexity of the bank entities to which they are applied.
2) Policymakers must be sensitive to the tradeoffs between more detailed supervision and regulation, on the one hand, and moral hazard and the smothering of innovation and competitive response, on the other.
3) Supervisors have little choice but to try to rely more—not less—on market discipline—augmented by more effective public disclosures—to carry an increasing share of the oversight load.
4) The most cost-effective approach to prudential oversight would have supervisors tap into that bank's internal risk assessments and other management information.
5) New examination guidance encouraging the largest and most complex banks to carry out self-assessments of their capital adequacy in relation to objective and quantifiable measures of risk.
6) The need to make *regulatory* capital requirements more risk-focused as well.

Greenspan thus argues that the increased difficulties of banking regulation and supervision will require that regulators ensure that banks have their own internal control mechanisms in place. The logic of this strategy is that, today, international markets are so instantaneously interconnected that intervention by regulators when a crisis erupts is always a second-best solution. The way to minimize problems in the future is to make banks take all precautions to protect themselves in a competitive environment.

This view is consistent with those who believe that there should be a greater reliance on market forces in disciplining banks. In a speech given in 1996, Thomas Hoenig, president of the Federal Reserve Bank of Kansas City, suggested limiting the safety net to banks that are not involved in the more exotic nontraditional activities such as derivatives (Hoenig 1996). He also suggested a second element to improve regulation by reducing systemic risk through limiting large interbank exposure in the payment system and interbank deposit markets. The advantages limiting the safety net to banks that are involved only in traditional activities would include reduced regulatory and compliance costs and improved efficiency.

For example, consider the Basle Committee's recent revision to the capital adequacy standards to incorporate market risk. The Committee's capital standards allow banks to use their own value-at-risk models to determine the amount of capital necessary to protect them from market risk. Clearly, banks need to use their own models to effectively manage risk. To effectively supervise banks that

use their own models, however, examiners need to have the expertise to judge the adequacy of the models and the risk management practices. At a minimum, this requires understanding the quantitative aspects of the model, such as its statistical structure, its accuracy in valuing assets, and the adequacy of the stress tests used to determine the financial consequences of large movements in interest rates and asset prices. In addition, examiners must understand the qualitative aspects of a risk management strategy, such as how management uses the model's information and ensures compliance with its risk management strategy. (Hoenig 1996)

Undoubtedly, bank examiners must be well trained. Recent changes in examination procedures at the U.S. bank regulatory agencies have placed Ph.D. economists on the examination teams. This, together with greater reliance on competition, may promote more effective supervision that also minimizes the problems of systemic risk. At a recent conference held at the Federal Reserve Bank of Chicago, numerous central banking officials concurred in the need for a larger role for market discipline for large financial institutions. Federal Reserve Board Governor Laurence Meyer spoke of the need for greater disclosure, as did Thomas Hoenig. The Basle Committee, in its latest proposal on the overall state of global bank capital standards, also echoes this view (Rehm 1999).

Will there indeed be a greater reliance on market discipline? R. Alton Gilbert (1996) has raised the point that the lesson from history is that we will continue to need a lender of last resort, and the nonbank institutions that compete with banks in the payment system will eventually be regulated as banks. Though Gilbert recognizes that market discipline is important for enhancing the effectiveness of supervision, it is not sufficient to prevent recurring panics and crises. History has also shown that the move toward greater regulation and supervision has often occurred during periods of financial distress.

What does this imply for international banking regulation—which, as we have seen, has also been driven by financial crises? In the first place, it implies that the domestic bank regulatory agencies will expand their turf to include financial institutions that today are not considered banks. Hence, in the United States, the result of legislation to expand the scope of the operations of banks will lead to the regulation of the nonbank competitors. This will also require some restructuring of the activities and responsibilities of the various financial institution regulatory agencies—including the Securities and Exchange Commission, the Commodities Future Trading Corporation, and so on, in addition to the Federal Reserve, the Comptroller of the Currency, the FDIC, and Office of Thrift Supervision.

Could international banking crises lead to the expansion of the role of the BIS or the International Monetary Fund (IMF) or the World Bank?

In recent years, the IMF and the World Bank have placed increasing emphasis on the importance of financial systems as crucial infrastructure. Both agencies have enormously expanded staff in the area of banking regulation and supervision. At the same time, both agencies have come under criticism for continuing to exist when the reason for their existence is questionable. The BIS has seized the initiative in global arrangements on banking regulation and supervision. Though there is unlikely to be a global chartering agency, the IMF could conceivably provide expertise to examine global banks. It could do this under the authority granted by nation-states, or as part of the revised IMF Articles of Agreement. The IMF, even more than the World Bank, has searched for a new mission in the post–Bretton Woods era. As technological change and economic growth generate the potential for systemic crises, assuming domestic bank examiners are not up to the task, the IMF could find its new mission to include the examination of global banks.

The probability of a rationale of parceling out global financial regulatory and supervisory responsibilities among the various nation-state agencies and the global agencies is low. Such an outcome would require a breakdown in national governments and an international agency up to the task of assuming new responsibilities. What is more likely is a gradual progress based on a cooperative effort for international banking regulation that periodically will be accelerated by shocks to the financial system—payments crises, for example—and the resultant collapse of one, or several, large financial institutions.

REFERENCES

Bakker, A. F .P. *International Financial Institutions*. London: Longman, 1996.

Barth, James R., and R. Dan Brumbaugh, Jr. "The Changing World of Banking: Setting the Regulatory Agenda." In *Financing Prosperity in the Next Century*. Public Policy Brief no. 8. Annandale-on-Hudson, N.Y.: Jerome Levy Economics Institute of Bard College, 1993.

Bartholomew, Philip F., and Gary W. Whalen. "Fundamentals of Systemic Risk." In George Kaufman, ed., *Research in Financial Services*, vol. 7, 3–17. Greenwich, Conn.: JAI Press, 1995.

Basle Committee on Banking Supervision. "Core Principles for Effective Banking Supervision." Basle: Bank for International Settlements, 1997.

———. "International Convergence of Capital Measurement and Capital Standards." Basle: Bank for International Settlements, 1988.

Benston, George J., and George G. Kaufman. "The Appropriate Role of Bank Regulation." *The Economic Journal* 106 (May 1996): 688–97.

Borio, Claudio. "Payment and Settlement Systems: Trends and Risk Management." In George Kaufman, ed., *Research in Financial Services*, vol. 7, 87–110. Greenwich, Conn.: JAI Press, 1995.

Cooke, Peter. "Developments in Cooperation among Banking Supervisory Authorities." *Bank of England Quarterly Bulletin* (June 1981): 238–44.

Dale, Richard. *The Regulation of International Banking*. Cambridge, Mass.: Woodhead-Faulkner, 1984.

de Swaan, Tom. "Capital Regulation: The Road Ahead." *FRBNY Economic Policy Review*. October 1998, 231–36.

Dewatripont, Mathias, and Jean Tirole. *The Prudential Regulation of Banks*. Cambridge, Mass.: MIT Press, 1994.

Gilbert, R. Alton. "Financial Regulation in the Information Age." Paper presented at the Cato Institute's 14th Annual Monetary Conference, Washington, D.C., June 25, 1996.

Goldstein, Morris. "International Aspects of Systemic Risk." In George Kaufman, ed., *Research in Financial Services*, vol. 7, 177–94. Greenwich, Conn.: JAI Press, 1995.

Greenspan, Alan. "The Evolution of Bank Supervision." Speech presented at the American Bankers Association, Phoenix, Arizona, October 11, 1999.

———. "Regulatory Viewpoint: Optimal Banking Supervision in a Changing World." *Journal of Commercial Lending* (July 1994): 43–51.

———. "Remarks Before the 32nd Annual Conference on Bank Structure and Competition." Chicago, May 1996.

Griffith-Jones, Stephany. *Global Capital Flows: Should They Be Regulated?* Foreword by James Tobin. New York: St. Martin's Press; London: Macmillan Press, 1988, xix, 206.

Hoenig, Thomas M. "Rethinking Financial Regulation." Speech presented at the World Economic Forum 1996 Annual Meeting, Davos, Switzerland, February 2, 1996.

Hultman, Charles W. *The Environment of International Banking*. Englewood Cliffs, N.J.: Prentice Hall, 1990.

Kane, Edward J. "Accelerating Inflation, Technological Innovation, and the Decreasing Effectiveness of Banking Regulation." *Journal of Finance* 36 (May 1981): 355–67.

———. "Foundations of Financial Regulation." Proceedings of a Conference on Bank Structure and Competition, Federal Reserve Bank of Chicago, 1996.

———. "Good Intentions and Unintended Evil: The Case Against Selective Credit Allocation." *Journal of Money, Credit, and Banking* 9 (February 1977): 55–69.

———. "Principal-Agent Problems in S&L Salvage." *Journal of Finance* (July 1990): 755–64.

Kapstein, Ethan B. *Supervising International Banks: Origins and Implications of the Basle Accord*. Essays in International Finance, no. 185. Princeton, N.J.: Princeton University Press, 1991.

Keeley, Michael C. "Bank Capital Regulation in the 1980s: Effective or Ineffective?" *Economic Review*, Federal Reserve Bank of San Francisco, 1 (Winter 1988): 3–20.

Lopez, Jose A. *The Basle Proposal for a New Capital Adequacy Framework*. Federal Reserve Bank of San Francisco Economic Letter, 99–23, July 30, 1999.

Rehm, Barbara, "Regulators Support Bigger Role for Market in Curbing Banks." *American Banker*, October 7, 1999, 1.

Spong, Kenneth. *Banking Regulation: Its Purposes, Implementation, and Effects*. 4th ed. Federal Reserve Bank of Kansas City, 1994.

Wagster, John D. "The Basle Accord of 1988 and the International Credit Crunch

of 1989–1992." *Journal of Financial Services Research* 15, no. 2 (March 1999): 123–43.

White, William R. "International Agreements in the Area of Banking and Finance: Accomplishments and Outstanding Issues." Working Paper no. 38. Basle: Bank for International Settlements, 1996.

Zimmerman, Gary C. "Implementing the Single Banking Market in Europe." *Economic Review*, Federal Reserve Bank of San Francisco, no. 3, 1995, 35–51.

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Are Banks and Their Regulators Outdated?

Benton E. Gup

INTRODUCTION

R. C. Merton and Z. Bodie (1995) observed that the basic functions performed by the financial system are stable across time and place, but the institutional ways in which they are performed are not. M. H. Miller (1998) argues that, for all of their benefits, banks are basically disaster-prone nineteenth-century technology. Their financial market functions (payments, intermediation, managing risk, price information) might be better provided by other financial institutions and securities. F. S. Mishkin and P. E. Strahan (1999) found that advances in information and telecommunications technology have contributed to the changing structure of the financial system by lowering transaction costs and reducing asymmetric information. These advances include the unbundling of risks and efficient use of electronic networks for services that range from electronic banking to on-line stock trading. The result is that the traditional role of intermediaries has changed over time. For example, Miller (1998) explains how financial markets (money market mutual funds and junk bonds) can serve as a substitute for bank liquidity. C. E. Maxwell, L. J. Gitman, and S. A. M. Smith (1998), in a survey of the working capital practices of business concerns, found that they are using fewer banks and making greater use of financial markets. Some banks and banking organizations are removing the word "bank" from their titles. Mellon Bank Corporation, which has been changing from a traditional commercial bank to an investment service company, is changing its name to

Table 2.1
Composition of Companies' Credit Market Debt as a Percentage of Total Credit Market Debt, 1995

	United States	Germany	Japan
Total external debt from financial institutions	54%	74%	77%
Banks	17	66	60
Debt securities	46	26	23

Source: Prowse (1997).

Mellon Financial (Moyer 1999); and a well-known banking trade group, the Bankers Roundtable, is changing its name to the Financial Services Roundtable and is opening its membership to securities firms and insurance companies (Anason 1999). As shown in Table 2.1, firms in the United States rely relatively more on the securities markets for external financing; banks are the dominant source in Germany and Japan (Prowse 1997).

Are banks, as we know them today, out of date technologically? If they are, we must also consider their regulators. The remainder of this chapter examines the legal definitions of a bank, discusses the structure of bank regulation in the United States, considers the six core functions of the financial system, and introduces functional regulation.

WHAT IS A BANK?

This simple question has a complicated answer because there is a distinction between the legal definition of commercial banks and the functional definition of what banks do. Some of the functions of banks are performed by nonbank competitors, and those functions have changed over the years. Another reason that makes defining a bank complicated is that the legal definition changes over time, and different countries have different legal definitions for banks. To reduce the scope of this discussion, only banks in the United States are considered here.

In the United States, the term "bank" is defined by federal and state laws and by the bank regulators. According to the National Banking Act of 1863, a national banking association shall have the power to carry out the "business of banking; by discounting and negotiating promissory notes, drafts, bills of exchange, and other evidences of debt; by receiving deposits; by buying and selling exchange, coin and bullion, by loaning money on personal security; and by obtaining, issuing, and circulating notes."[1] Since then, the definition of a bank has changed, and it will

continue to do so. For example, the Bank Holding Company Act of 1956 defined a bank as *a financial institution that accept deposits (where the depositor has the legal right to withdraw them on demand) and makes commercial loans*. Commercial loans are loans to a business customer for the purpose of providing funds for that business.[2] This definition had a loophole for institutions that accepted deposits and made loans only to individuals—consumer loans. These institutions were defined as *nonbank banks* and were not subject to the same regulations as a bank. That loophole was closed by the Competitive Equality Banking Act of 1987 (CEBA), and no new nonbank banks were chartered.[3] Thus, the definition of a bank became a financial institution that accepts deposits and makes loans. CEBA further modified the definition of a bank to include *only those institutions that had their deposits insured by the Federal Deposit Insurance Corporation* (FDIC).

The bottom line is that a bank is an organization that has been given banking powers either by the state or the federal government. We use the term bank and commercial bank interchangeably. Nevertheless, the legal definition of a bank is important because bank regulators only regulate banks, not their nonbank competitors.

The services provided by banks have changed over the years as new technologies have emerged. The selected services listed in Table 2.2 indicate the range of services offered today by banks and their holding companies compared to those offered in the past.[4] Not surprisingly, managers of commercial banks lobby Congress to change the laws and regulations in order to obtain expanded powers to provide additional financial services. Managers of the nonbank competitors lobby just as hard to prevent bank competition in those areas. Much of the debate over bank regulation centers on the controversy between bankers and other financial service firms over the limits of bank powers.

In addition, there are debates about the relationships between banks and their nonbank affiliates. For example, one issue concerns the insulation of banks from their nonbank affiliates of holding companies that might "pierce the corporate veil." J. L. Pierce argues that the Federal Reserve should deregulate the nonbank affiliates of holding companies because the existing insulation is quite thick, and it can be improved easily (Pierce "Can Banks" 1991). The existing insulation includes Sections 23 A and B of the Federal Reserve Act which limits loans and credit to nonbank affiliates and require "arms-length transactions." The Garn St. Germain Act of 1982 exposed the bank to losses of subsidiaries, but the Competitive Bank Equality Act of 1987 prohibits banks from representing that they are responsible for the obligations of their subsidiaries. Subsidiary debt is not backed by the FDIC.

Table 2.2
Selected New and Old Banking Services

NEW	OLD
Cash management services	Non-interest-bearing transaction accounts
Certificates of deposit	Savings accounts
Consumer loans	Commercial loans
Commercial Loans	
Credit and debit cards	
Checking accounts	
Derivatives	
Electronic banking	
Foreign exchange	
Insurance	
Investment advice	
Interest-bearing transaction accounts	
Leasing	
Mutual Funds	
Real estate loans	
Securities brokerage services	
Trust services	
Trade finance for international transactions	
Underwriting and dealing in government securities	

A PATCHWORK SYSTEM OF REGULATION

The bank regulatory system in the United States evolved over time in response to financial crises and to other economic and political events. Both banks and bank regulators are limited in their operations by the laws that established them and are imposed on them by Congress from time to time. No central architect designed our regulatory system or provided a single set of principles (Spong 1994). Instead, the current system reflects inputs from a wide variety of people with different viewpoints, objectives, and experiences. As a result, the patchwork system of bank regulation serves numerous goals, some of which have changed over time and some of which are in conflict with others.

The first bank "regulators" in the newly formed United States were associated with state insurance plans. In 1829 New York adopted a bank-obligation insurance program (FDIC 1984). The regulations required merchants who held charters to trade with foreigners to be liable for one another's debts. Between 1829 and 1865, bank-obligation insurance programs were also established Iowa, Indiana, Ohio, Michigan, and Vermont. Bank supervision was an essential part of those programs. The supervision focused on reducing the risk exposure to the insurance programs and on sound banking practices. The terms "regulation" and "supervision" are used interchangeably here; however, there is a technical difference. Bank regulation refers to

> the formulation and issuance by authorized agencies of specific rules or regulations, under governing law for the structure and conduct of banking. . . . Bank supervision is concerned primarily with the safety and soundness of individual banks, and involves general and continuous oversight to ensure that banks are operated prudently in accordance with applicable statutes and regulations. (Board of Governors of the Federal Reserve System 1984, 88)

R. M. Robertson (1995) revealed that the history of federal banking legislation in the United States is associated with controlling the money supply. The National Currency Act (1863) established within the U.S. Treasury a separate bureau, the Currency Bureau, which was headed by the comptroller of the currency. Congress conceived that the comptroller of the currency would control the issue of national banknotes. The law was updated the following year (June 3, 1864) with the passage of the National Bank Act, which provided "the legal framework for national-bank charters that persists into the present day" (49). There were 66 national banks in 1863, and 467 the following year. Against this background, it is not surprising that the Office of the Comptroller of the Currency (OCC) focused on the banking organizations and what they did, rather than the "functions" of banks per se.

After the Civil War, deposit insurance programs were developed in Kansas, Oklahoma, Mississippi, Nebraska, North Dakota, South Dakota, Texas, and Washington. Although most of the states had the authority to regulate the insured banks, the regulatory process was not effective. Bank failures and financial panics were recurring problems.

The Federal Reserve System was established when Congress passed the Federal Reserve Act in 1913 and the members of the first Federal Reserve Board took their oath of office in August 1914. At that time, World War I was disrupting financial markets in Europe. Europeans were dumping their holding of American securities, U.S. securities prices were falling, and there was a drain on the gold stock (Anderson 1965). The Federal Reserve Board's initial task was to determine the proper functions for the new central bank. C. J. Anderson (1965), who was writing about the history of the Federal Reserve's first fifty years, and D. P. Eastburn (1965), who was writing about the second fifty years, never mentioned the regulation of banks and their activities. In their books, the focus is on monetary policy. The Board of Governors of the Federal Reserve System's *Purposes and Functions* states that the purposes of the Federal Reserve Act were "to give the country an elastic currency, to provide for discounting commercial paper, and to improve the supervision of banking" (1954, 1). The 1974 edition of the *Purposes and Functions* explains that the Federal Reserve System has "important responsibilities for regulating the structure and operation of the U.S. banking system and related activities" (ch. 7, 107). These activities include regulating member banks and bank holding companies and administering "truth-in-lending" regulations.

Supervising banks is one thing; preventing failures is another. Between 1930 and 1933 in the United States, 9,106 banks failed, and there was increased pressure on the government to provide federal deposit insurance. Between 1886 and 1933, 150 proposals for such a program were introduced in Congress. Most of the proposed insurance plans called for the comptroller of the currency to administer the programs. The issue was finally resolved by the passage of the Banking Act of 1933, which established the FDIC.[5]

Would better bank supervision have mitigated the financial crises in Southeast Asia? The answer is probably not. L. William Seidman (1997), former chairman of the FDIC, observed that every major developed nation has learned that it is possible to have serious banking problems despite a great variety of regulatory structures, deposit insurance systems, and banking organization. The existing methods of supervising banks are ineffective and would not have made much difference in this case. Banking problems have occurred in the United States, Canada, England, Japan, Sweden, and elsewhere. Seidman has concluded that there is no "magic bullet" system that will ensure safety and soundness. Like-

wise, W. J. McDonough (1998), president of the Federal Reserve Bank of New York, has found that one of the most significant themes to emerge from a conference on the future of bank capital regulation was that "one-size-fits-all" approaches will fail in the long run. According to Alan Greenspan (1999), "a one-size-fits-all approach to regulation and supervision is inefficient and, frankly, untenable in a world in which banks vary dramatically in terms of size, business mix, and appetite for risk." That also may apply to other forms of bank regulations.

In review, regulation of the current banking system is divided among the OCC, the Federal Reserve, the FDIC, and fifty state bank supervisors. In addition, the Securities and Exchange Commission and the Department of Justice are involved in various aspects of banking activities. In each case, the scope of the regulators' activities are limited by laws and by their interpretations of those laws.

Generally speaking, the focus of bank regulation has been on the safety and soundness of banks in order to avoid financial crises and to protect the payments system. Unfortunately, the regulators' track record in the United States and abroad is not very good as measured by the large number of failures.

In addition to safety and soundness, bank regulation has been extended to meet social goals that are reflected in the Community Reinvest Act (1977), the Equal Credit Opportunity Act (1974), the Home Mortgage Disclosure Act (1975), the Truth-in-Lending Act (1969), and so on.[6]

THE FUNCTIONS OF THE FINANCIAL SYSTEM

Merton and Bodie (1995) have distinguished six basic core functions performed by the financial system:

- Clear and settle payments
- Pool resources and subdivide shares in various enterprises
- Transfer economic resources through time, across borders, and among industries
- Manage risk (diversification, hedging, insurance)
- Provide price information
- Deal with incentive problems created by asymmetric information, or in agency relationships.

Banks have been the primary providers of these services throughout much of history. However, financial innovations opened the door for nonbanking firms to perform many of these functions. Consider the development of "securitization." According to S. Greenbaum (1996), securitization may have the greatest potential for "savaging" banking

institutions. He declares that we did not appreciate the role securitization played in the demise of the savings and loan (S&L) industry. Bringing mortgage credit into the capital markets and decomposing the credit function into origination, servicing, guaranteeing, and funding squeezed the economic rents of the S&Ls out of their deposit and lending functions.

By the turn of the century, financial technology had created "synthetic securitizations." This allows banks to reduce their credit exposure without placing loans or other obligations into trust (Ogden 1999). Both J. P. Morgan and Citibank used credit default swaps to hedge their credit exposure, thereby avoiding the legal, administrative, and due diligence costs of securitization. The falling information costs eroded banks' monopoly rents. Similar arguments can be made for credit scoring, electronic banking, home mortgage financing via the internet, and investing in stocks, bonds, and mutual funds via the internet.

P. Martin (1998) argues that banks have no future and that, in order to survive, they must find another role, such as being an advisor, speculator, or fund manager, which is why Deutsche Bank acquired Bankers Trust. Martin claims that maturity mismatching is the raison d'être for banks and their profits, and that changes in electronic and financial technology have eliminated the need for such mismatching.[7] Individuals invest in equities to provide long-term retirement income, and they can finance their short-term needs with credit cards. Similarly, firms that are able to do so borrow directly from the money and capital market, or by securitizing some of their assets, thereby bypassing commercial banks.[8]

Nonbank firms can offer the same functions as banks, but they are not subjected to the same regulations or laws. For example, credit unions accept deposits and make loans. However, their deposits are not insured by the FDIC. Therefore credit unions are not subjected to the same regulations or taxes as banks. Similarly, G E Capital, General Motors, Fidelity Funds, Merrill Lynch, and others firms provide "banking functions and financial services," although they are not banks in the legal sense of the word. For example, Charles Schwab Access™ account allows customers to pay bills, check balances day or night, move money between accounts, make direct deposits, have ATM access, use a debit card, and trade stocks and bonds on line. General Electric owns seventeen mutual funds and eleven insurance and investment businesses and is creating more (Garmhausen 1999). Even the U.S. Post Office wants to provide banking services such as electronic bill payment.[9] Because of the growth of such services offered by nonbank competitors, the banks' share of the financial sector has declined as shown in Table 2.3.

The decline in the commercial banks' share is not new (White 1998). Their share of intermediaries assets declined from 63 percent in 1880 to 27 percent in 1990. The decline has been attributed to regulatory disad-

Table 2.3
Market Share of Financial Sector Assets ($ Billions)

	1980	1997
Commercial Banks	$1,482 (34%)	$4,196 (24%)
Nonbank Finance	$2,884 (66%)	$13,043 (76%)
Totals	$4,366 (100%)	$17,239 (100%)

Source: *Federal Reserve Bulletin*, Flow of Funds Accounts, A41, table 1.60, January 1999; U.S. Department of Commerce, *Statistical Abstract of the United States 1997*, 1998, table 774.

vantage and technology in information collection and use that allowed other organizations to provide credit services (White 1998) gradual decline has been examined in the literature by R. P. Auerbach (1978), J. H. Boyd and M. Gertler (1994), B. E. Gup and P. Agrrawal (1994), F. R. Edwards and F. S. Mishkin (1995), and G. Kaufman and L. Mote (1994).

It is clear that the traditional concept of a bank is evolving into new types of institutions that will deliver financial services. Stephen Cecchetti (1999) envisions two possible types of institutions: one is a financial products supermarket, and the other is an all-in-bank. The financial products supermarket is similar to a brokerage firm that does not have much of a balance sheet of its own. It manages the financial assets of others. Unless it trades for its own account, there is little need for it to have capital. The all-in-bank funds and takes risks in the same institution, just as banks do today in traditional maturity-transforming banks.

Perhaps the internet will be the driving force behind changes in banking, much as on-line trading and electronic trading networks are changing the fundamental structure of the securities markets (Levitt 1999). Some large banks are changing their acquisitions strategy because they recognize that traditional bank acquisitions are not the best way to attract new customers on the internet (Brooks 1999). In the not too distant future, information technology firms may be delivering many of the financial services currently being provided by traditional banks. To paraphrase Charles Darwin, only the fittest firms will survive. Traditional banks will survive only as long as they can provide value to their customers.

The implication of these facts and figures is that as banks' market share of financial assets erodes, and as the relative importance of nonregulated financial service providers grows, the effectiveness of bank regulators will erode as well. What can be done to resolve this situation?

FUNCTIONAL REGULATION

According to Jerry Jordan (1996), president of the Federal Reserve Bank of Cleveland, "Regulation should focus less on institutions and more on functions." Likewise, J. L. Pierce (*Future of Banking* 1991, 1993) argues that regulation and supervision should focus on the functions of the financial system rather than the current institutional arrangements.

Some advocates of the functional approach favor the concept of "narrow banking" because it can meet the safety and soundness standards of bank regulation and it can accommodate both changes in technology and market conditions. A narrow bank is one that has 100 percent reserves, similar in practice to money market mutual funds (MMMFs) except that shares of the MMMFs are not FDIC insured.[10] According to R. E. Litan (1987) and R. J. Phillips (1995), a narrow bank separates the lending and depository functions of financial institutions, thereby eliminating the need for deposit insurance. In a narrow bank, transaction deposits are invested in short-term government securities or other safe, liquid assets.

Pierce (*Future of Banking* 1991) suggests a functional approach to regulation based on the type of service provided. He argues that banks no longer have a monopoly on transaction accounts; therefore, federal deposit insurance should apply to any firm (e.g., Merrill Lynch, Sears, or General Motors) that offers such monetary services. He explains that conversion to a narrow bank, which he calls a *monetary service company*, does not eliminate the possibility of panics or a liquidity crisis if the public should lose faith. Therefore, there is still a need for a federal safety net. Second, given that checking accounts supply a decreasing share of the funds used by banks to fund loans, a bank or firm can be separated into two parts: one part deals with monetary services (deposits and payment services), and the other part with everything else (nonmonetary services). Thus, a firm offering deposit services, such as a narrow bank, would benefit from the federal safety net, but those offering loan services would not be covered.

In reviewing Pierce's concept of a narrow bank, A. Srinivasan (1992) argues that it has two major problems. The first problem with this solution is that it would result in the abolishing of traditional banks and the breakup of a number of existing institutions. Second, credit might be diverted from small institutions to larger ones that might not serve the credit needs of smaller communities. R. A. Gilbert (1993), in reviewing Pierce's (1993) discussion of a narrow bank–monetary service company, found that it did not protect the payments system nor did it eliminate the need for government supervision.

Finally, with respect to the services offered by different types of financial institutions, some countries have eliminated the distinctions between

banks and nonbank financial institutions for purposes of regulation. For example, in France, the 1984 Bank Law eliminated the distinctions among commercial banks, savings banks, and medium- and long-term credit banks. In 1990 the Banking Act in Switzerland was amended to put nonbank financial institutions and underwriters under the same regulations as banks (U.S. Department of Treasury 1994).

The Central Bank as the Regulator

An equally important and related issue is that if the regulatory system is going to change, who will regulate what? Not surprisingly, some federal bank regulators focus on "banks" in the legal sense of the word rather than the functions of banks. Richard F. Syron (1994), president of the Federal Reserve Bank of Boston, believes that one federal agency should regulate banks, and that institution should be the Federal Reserve because of its role as a central bank. Syron considers that the Federal Reserve has three critical responsibilities: ensuring financial stability, establishing monetary policy, and maintaining the payments system. These responsibilities are all integrally linked to the banking system. Moreover, bank supervision must extend beyond the financial condition of individual banks to consideration of systemic problems. Only the central bank is qualified to deal with that because the other federal bank regulators focus primarily on safety and soundness and exposure of the FDIC insurance fund (Syron 1994). Federal Reserve Governor Laurence Meyer (1999) has expressed a similar view, stating that the central bank's mission of financial stability is closely connected to the regulation and supervision of banks.

Global Regulator

Given global megabanks, Henry Kaufman (1998) points to the need for a global regulator. He suggests an international Board of Overseers of Major Financial Markets and Institutions that would set capital standards, uniform reporting, accounting, and trading standards for all major institutions. The Basle Committee on Banking Supervision might be a starting point for this type of organization.

CONCLUSION

Merton and Bodie (1995) did not invent the concept that form follows function, but they were the first to apply it to financial institutions. The concept is intuitive, simple, and appealing because we can see changes occurring in our financial system. Today, an increasing number of financial services are being delivered by nonbank providers such as Charles

Schwab, Fidelity Funds, and General Electric. Deregulation, the growth of derivatives, megabank global banking organizations, securitization and the unbundling of loans, and the use of the internet for the delivery of financial services are some of the forces driving change.

While dynamic changes in the delivery of financial services is going on, bank regulators are limited by laws to focus on banks in the legal sense of the word, and on their affiliates. It is clear that bank regulation has not and cannot keep pace with the changes in the domestic and global delivery of financial services.

One recommendation is to consider functional regulation, regulating lines of business, such as the Securities and Exchange Commission regulates securities activities. This still leaves the politically sensitive issues of who or what agencies would be the regulators. Additional research and debate are needed to resolve these issues.

On the international scene, the Basle Committee on Banking Supervision and the European Central Bank are examples of harmonization of banking regulation. Commercial banks continue to play a larger role in developing nations than in the United States and other mature economies; therefore, the technological obsolescence of banks and bank regulators may be premature, at least in developing nations.

NOTES

1. National Bank Act, 12 U.S.C.A. 24 (7).
2. *Board of Governors v. Dimension Financial Corporation*, 474 U.S 361 (1986).
3. Although the loophole was closed, about 160 enterprises were allowed to continue to operate as nonbanks, subject to certain limitations.
4. For a complete listing of activities of nonbank affiliates, see 12CFR225.25(b).
5. For details about the history of banking regulation in the United States, see Spong (1994), Lash (1987), and Krooss and Blyn (1971).
6. The Truth-in-Lending Act is Title I of the Consumer Protection Act of 1969. For additional information, see Lash (1987).
7. For a discussion of why banks mismatch maturities, see Calomiris and Kahn (1991).
8. Some firms have established limited purpose banks (CEBA credit card banks) for the purpose of securitizing their own credit cards. Such banks are chartered with the OCC or they may have state charters. J. C. Penney and Circuit City are two examples of firms that have established limited purpose banks.
9. The Postal Modernization Act was introduced in Congress in 1996 but had little support. In 1999, however, support has increased for it. The bill contains provisions to allow it to provide financial services (Baranick 1999).
10. For a discussion of the theory of narrow banking, see Wallace (1996).

REFERENCES

Anason, D. "Roundtable Leaders Want a Bigger Tent," *American Banker*, September 15, 1999, 3.

Anderson, C. J. *A Half-Century of Federal Reserve Policymaking, 1914–1964*. Philadelphia: Federal Reserve Bank of Philadelphia, 1965.

Auerbach, R. P. *Historical Overview of Financial Institutions in the United States*. Washington, D.C.: Federal Deposit Insurance Corporation, 1978.

Baranick, S. "Bill in Congress Pushes Postal Service in Direction of Competing with Banks," *American Banker*, April 6, 1999, 1, 2.

Board of Governors of the Federal Reserve System. *The Federal Reserve System: Purposes and Functions*. Washington, D.C., 1954.

———. *The Federal Reserve System: Purposes and Functions*. Washington, D.C., 1974.

———. *The Federal Reserve System: Purposes and Functions*. Washington, D.C., 1984.

Boyd, J. H., and M. Gertler. "Are Banks Dead? Or Are the Reports Greatly Exaggerated?" In *The Declining Role of Banking*. Chicago: Federal Reserve Bank of Chicago, May 1994, 85–117.

Brooks, L. "Banks Deals Dry Up, but Sellers Abound." *Wall Street Journal*, September 27, 1999, C1, C2.

Calomiris, C. W., and C. M. Kahn. "The Role of Demandable Debt in Structuring Optional Banking Arrangements." *American Economic Review* (June 1991): 497–513.

Cecchetti, G. "The Future of Financial Intermediation and Regulation: An Overview." In *Current Issues in Economics and Finance*. New York: Federal Reserve Bank of New York, May 1999.

Eastburn, D. P. *The Federal Reserve on Record: Reading on Current Issues from Statements by Federal Reserve Officials*. Philadelphia: Federal Reserve Bank of Philadelphia, 1965.

Edwards, F. R., and F. S. Mishkin. "The Decline of Traditional Banking: Implications for Financial Stability and Regulatory Policy." In *Economic Policy Review*. New York: Federal Reserve Bank of New York, July 1995, 27–45.

Federal Deposit Insurance Corporation. *The First Fifty Years*. Washington, D.C., 1984.

Garmhausen, S. "GE Readies for Bank Push by Beefing Up Fund Menu," *American Banker*, March 4, 1999, 12.

Gilbert, R. A. "Discussant Comments on Pierce, J. L., 'The Functional Approach to Deposit Insurance Regulation'." In *Safeguarding the Banking System in an Environment of Financial Cycles*. Boston: Federal Reserve Bank of Boston, 1993, 139–46.

Greenbaum, S. "Twenty-Five Years of Banking Research." *Financial Management* (Summer 1996): 86–92.

Greenspan, A. "The Evolution of Bank Supervision." Speech before the American Bankers Association, Phoenix, Arizona, October 11, 1999.

Gup, B. E., and P. Agrrawal. "Excess Capacity in Banking: Fact or Fiction," *Bankers Magazine*, July/August 1994, 38–40.

Jordan, J. L. "The Functions and Future of Retail Banking." In *Economic Commentary*, Cleveland: Federal Reserve Bank of Cleveland, September 15, 1996.

Kaufman, G., and L. Mote. "Is Banking a Declining Industry? A Historical Perspective." In *Economic Perspectives*. Chicago: Federal Reserve Bank of Chicago, May/June 1994, 2–21.

Kaufman, H. "Turmoil Points Up Need for New Global Regulator," *American Banker*, November 18, 1998, 29.

Krooss, H. E., and M. R. Blyn. *A History of Financial Intermediaries*. New York: Random House, 1971.

Lash, N. A. *Banking Laws and Regulations: An Economic Perspective*. Englewood Cliffs, N.J.: Prentice-Hall, 1987.

Levitt, A. "Dynamic Markets, Timeless Principles." Paper presented by SEC chairman at Columbia Law School, New York, N.Y., September 23, 1999. See http://www.sec.gov/news/speeches/spch295.htm.

Litan, R. E. *What Should Banks Do?* Washington, D.C.: Brookings Institution, 1987.

Martin, P. "A Long Goodbye," *Economist*, November 24, 1998, 20.

Maxwell, C. E., L. J. Gitman, and S. A. M. Smith. "Working Capital Management and Financial-Service Consumption Preferences of US and Foreign Firms: A Comparison of 1979 and 1996 Preferences." *Financial Management* (Fall/Winter 1998): 46–52.

McDonough, W. J. "Conference Overview: Major Themes and Directions for the Future." In *Economic Policy Review*. New York: Federal Reserve Bank of New York, October 1998, 3–11.

Merton, R. C., and Z. Bodie. "Financial Infrastructure and Public Policy." In *The Global Financial System: A Functional Perspective*, edited by D. B. Crane et al., 263–82. Boston: Harvard Business School Press, 1995.

Meyer, L. H. "Remarks by Governor Laurence H. Meyer at the Ninth Annual Hyman P. Minsky Conference on Financial Structure." Paper presented at Annandale-on-the-Hudson, New York, April 22, 1999.

Miller, M. H. "Financial Markets and Economic Growth." *Journal of Applied Corporate Finance* (Fall 1998): 8–15.

Mishkin, F. S., and P. E. Strahan. "What Will Technology Do to Financial Structure?" Working Paper 6892. Cambridge, Mass.: National Bureau of Economic Research, January 1999.

Moyer, L. "Mellon to Scrap 'Bank' from Name for 'Financial,' " *American Banker*, September 15, 1999, 5.

Ogden, J. "Using Derivatives to Manage Risk: The Banks' Best Solutions." *Global Finance* (March 1999): 17–27.

Phillips, R. J. "Narrow Banking Reconsidered." *Public Policy Brief* no. 17. Jerome Levy Institute of Bard College, 1995.

Pierce, J. L. "Can Banks Be Insulated from Nonbank Affiliates?" In *Governing Banking's Future: Markets vs. Regulation*, edited by C. England. Boston: Kluwer Academic Publishers, 1991.

———. "The Functional Approach to Deposit Insurance Regulation." In *Safeguarding the Banking System in an Environment of Financial Cycles*, 111–30. Boston: Federal Reserve Bank of Boston, 1993.

———. *The Future of Banking*. New Haven, Conn.: Yale University Press, 1991.

Prowse, S. D. "Corporate Financing and Governance: An International Perspec-

tive." In *Southwest Economy*. Dallas: Federal Reserve Bank of Dallas, September/October 1997, 9–10.

Robertson, R. M. *The Comptroller and Bank Supervision: An Historical Appraisal*. Washington, D.C.: Office of the Comptroller of the Currency, 1995.

Seidman, L. W. "Lessons of the Eighties: What Does the Evidence Show." In *History of the Eighties: Lessons for the Future*, vol. 2, 55–64. Washington, D.C.: Federal Deposit Insurance Corporation, 1997.

Spong, K. *Banking Regulation: Its Purposes, Implementation, and Effects*. 4th ed. Kansas City: Federal Reserve Bank of Kansas City, 1994.

Srinivasan, A. "Review Essay: The Future of Banking." Atlanta: Federal Reserve Bank of Atlanta, September/October 1992, 34–40.

Syron, R. F. "The Fed Must Continue to Supervise Banks." In *New England Economic Review*. Boston: Federal Reserve Bank of Boston, January/February 1994, 1–8.

United States Department of Treasury. *National Treatment Study, 1994*. Washington, D.C.: December 1994.

Wallace, N. "Narrow Banking Meets the Diamond-Dybvig Model." *Quarterly Review*. Federal Reserve Bank of Minneapolis, Winter 1996, 3–13.

White, E. N. "Were Banks Special Intermediaries in Late Nineteenth Century America?" *Review*. Federal Reserve Bank of St. Louis, May/June 1998, 13–32.

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Designing the New Architecture for U.S. Banking

George G. Kaufman

Much is being made of the need to design an effective architecture for banking, particularly for the twenty-first century. This implies that the existing architecture is not working as well as possible and is in need of repair or possibly a thorough overhaul. Many are lobbying for such changes. Numerous articles on this topic have been written by academic economists and presented at professional meetings. Bankers and bank competitors have complained almost daily of the inefficiencies and inequities of the current structure. Legislators have responded by introducing numerous bills to correct the actual or perceived flaws. Some of the bills have been enacted in recent years and some are still pending.[1]

Equal concern and passion do not appear to have been expressed about the efficiency of the architecture of most other industries perhaps because banking is more highly regulated than most other industries both in the United States and in other countries and because regulation is both an important determinant and an important component of the architecture of the industrial structure. Since structure affects performance, if the performance of a regulated industry is unsatisfactory, it might be improved by adjusting the structure. Banking is regulated by the government's ability to improve it by adjusting the structure. Banking is regulated by the government to achieve a number of economic, social, and political goals, including ensuring safety and efficiency, limiting economic and political concentration, allocating credit to favored sectors including the government itself, and distributing credit and fran-

chises to political supporters. History has shown that the public appears to be more concerned about the safety of banks than the safety of most other industries, with the possible exception of the airline industry. Governments also discovered long ago that using banks to pursue their own economic and political policies was an appealing and widely perceived cost-free (off-budget) strategy and a less transparent way of purchasing favors than using on–balance sheet strategies.

DISSATISFACTION WITH THE OLD ARCHITECTURE

The current drive to alter the architecture of banking suggests that these objectives have not been satisfactorily achieved, either because the regulations were inherently flawed or because advances in technology, such as telecommunications, computers, and "free" 800 telephone numbers, have permitted the extant "good" regulations to be bypassed. In the United States, many of the old regulations reflect the early settlers' widespread fear of the excessive economic and political power wielded by banks. Many of these immigrants, who had been debtors in the countries from which they had emigrated, felt that they had been exploited by the powerful banks in their former countries. They did not want to replicate the same scenario in the United States. Thus, they tried to keep banks small and not powerful. What better way of limiting the power of the banks than to restrict the number of offices they can have and the types of products and services they can offer? Banks were not permitted to branch across state lines, and many states restricted the number and location of branches within the state. Banks were basically permitted to accept deposits, make shorter-term loans, and engage in limited investment banking. They were not permitted to own equity, make mortgage loans (until the early 1900s), underwrite and to a large extent broker insurance, or engage in real estate transactions. Bank holding companies were often granted somewhat wider product and geographic powers. Through time, however, the demand by a wealthier and aging population for traditional banking products has diminished relative to those of pension funds and mutual funds; advances in technology have permitted other financial institutions to offer similar or on occasion even the exact same products as banks without the same regulatory burdens; and banks have suffered bouts of financial weakness and failures. As a result, the public fear of banks diminished, and legislative restraint of the power of banks became less necessary (Edwards and Mishkin 1995; Kaufman and Mote 1994).

The large number and high cost of bank, as well as thrift institution, failures in the 1980s and early 1990s led to a reevaluation of the regulations specifically intended to increase safety. Many of these regulations had been introduced in the early and mid-1930s on the heels of the Great

Depression and the accompanying large number of bank failures at that time. In particular, the recent failures brought into question the structure of federal deposit insurance and other government guarantees and the discretionary behavior of bank regulators with respect to troubled banks. As a result, both areas were dramatically overhauled by the Federal Deposit Insurance Corporate Improvement Act (FDICIA) of 1991 (Benston and Kaufman 1994, 1998; Carnell 1997). In addition, bank safety was probably improved by the liberalization of geographic and product restrictions which has permitted greater diversification.

Efficiency in terms of lower interest rates on loan services, higher rates on deposit services, and a larger volume of intermediation flow through banks is generally perceived to be improved if advantage can be taken of any potential economies of scale and scope and if explicit and implicit costs of regulation are minimized. As fear of excessive bank influence receded, support for legislative and regulatory restrictions on bank product and geographic expansion more severe than the antitrust restrictions placed on other industries diminished. In addition, the recovery of banking in the 1990s from its serious financial difficulties reduced the threat that the industry would be a financial burden on the taxpayer. Thus, in 1994, almost all federal restrictions on interstate expansion by bank holding companies and most federal restrictions on interstate branching were phased out by Congress. Simultaneously, most states liberalized their restrictions on these activities. For the first time in U.S. history, nationwide banking through physical presence has become a reality.

The reduction of legislative restrictions on bank product is occurring more slowly partly because of opposition by nonbank competitors and partly because of remaining residual fears of excessive bank influence and conflicts of interest, particularly with respect to permitting banks to own nonfinancial firms and nonfinancial firms to own banks, the so-called mixing of banking and commerce. Some restrictions, however, have been liberalized without legislative change through regulatory and judicial reinterpretation of the language of the restrictions. This is particularly true for bank involvement in private securities, underwriting, and trading. The board of governors of the Federal Reserve System has permitted affiliates of bank holding companies to deal in progressively broader ranges of private securities restricted only by a ceiling on the revenues derived from these activities as a percentage of total revenues from their all securities dealing, including dealing in always permissible government securities (Kaufman and Mote 1990). In effect, the Glass-Steagall restrictions on underwriting and trading in private securities have been repealed for all but the smaller banks for which operating through a holding company affiliate may be too costly or those that do not deal in government securities. More recently, the comptroller of the currency has announced the intention to permit national banks to con-

duct these and some other previously prohibited activities in separately capitalized (and deducted from the bank's capital) operating subsidiaries of the bank itself. As will be noted later, this has resulted in a "turf battle" between the two agencies which has become a major stumbling block to the enactment of the bills currently pending in Congress.

Some also want to change the architecture to be able to use banks to a greater extent to allocate credit to minority and low-income groups through the Community Reinvestment Act (CRA). Here the disagreements are intense. One group is strongly opposed to the use of banks to allocate credit regardless of how worthy the cause; the other group believes that the end justifies the means and that the CRA provisions need to be strengthened for banks and broadened to include nonbank financial institutions.

LEGISLATING THE NEW ARCHITECTURE

Current legislative attempts to modify the extant banking architecture are relying in part on game playing using words to make their cause more attractive by co-opting those words that have favorable connotations. Many economists term their own contributions as "dynamic" and their competitors' as "static," and proponents of change in the regulatory structure in banking use such terms as "modernization" and "reform." Who could be against changes described in such terms, at least in principle? The proposals focus on expanding bank product powers, modifying CRA provisions, and choosing among bank regulatory agencies.

If legislators were targeting only removing all restrictions on bank powers, they could enact a short and simple bill calling for the repeal of the Glass-Steagall and the Bank Holding Company Acts (Shadow Financial Regulatory Committee 1999). The bills introduced in Congress are neither this short nor this simple. Rather, after working their way through committees, they run many tens of pages with many hundreds of provisions that expand the powers of banks, bank competitors, and bank regulators a little here, restrict their powers a little there, shift some powers from one group to another, deal with many individual "hardship" cases, provide "favors" for individual legislators' friends and allies, redirect bank credit to targeted sectors, decrease or increase the costs of regulation, and generally give modernization and reform a bad name. Because the issues at stake are rather narrow and technical and are not perceived by the public to be of immediate burning concern, there has not been a groundswell of public support or outrage driving enactment of the legislation. Rather the driving forces have been primarily vested interests, fighting each other for gains in a mostly zero-sum game. The process has been a lobbyist's delight. The tribute paid in support of spe-

cific provisions has been gladly accepted by the legislators, for many of whom the outcome is not of great and lasting concern.

As of the end of September 1999, it was not clear what a final bill, if any, and final architecture would look like. The bills that passed the House and Senate individually in 1999 are at times greatly different from each other, and potential reconciliation looked difficult. The greatest driving forces for speedy enactment of these bills are those with the most to gain or to lose. Foremost of these is Citigroup, which needs congressional approval to maintain and fully integrate all the activities acquired in Citicorp's earlier merger of equals with Travelers Insurance. If not legislatively permitted within five years, some of these activities, particularly insurance underwriting, could not be conducted by Citigroup or any of its affiliates. Another big driver is the Federal Reserve System in its ongoing turf battle with the comptroller of the currency for regulatory supremacy in banking. While most large commercial banks are national banks and regulated by the comptroller, they are also subsidiaries of bank holding companies, which are regulated by the Federal Reserve.

DANGERS OF THE "WRONG" ARCHITECTURE

Any redesign of the banking architecture should be done carefully. Inappropriate or wrong changes can be dangerous. Indeed, a review of banking history suggests that most legislated changes in banking, at least in the United States, would likely fail a benefit-cost test. Through time, they probably produced greater costs than benefits.

As a result of past legislated architecture, U.S. banks are on one end of the global product powers spectrum. (Before the recent liberalization in restrictions on intrastate and interstate banking, U.S. banks would also have been on the extreme end of the global geographic power spectrum.) On the other end of the spectrum are countries that permit universal banking and bank ownership or control of nonfinancial firms as well as nonfinancial firm ownership or control of banks. Such countries include Germany, Spain, and France. Near the center of the spectrum are countries that more or less permit financial universal banking, but not combinations of banking and commerce. These include the United Kingdom and Canada. The precise placement of many countries on this spectrum is difficult to determine because de facto bank powers may differ—be either greater or smaller—than the de jure powers as a result of strict or lax regulatory interpretation or control.

Evidence from industrial countries since 1960 suggests that the most profitable banks measured by either return on assets or return on equity are those in countries with relatively more restrictive architecture, primarily the United States, the United Kingdom, and Canada. (Dutch

banks are also among the more profitable, but the larger banks tend to be global banks which conduct a large share of their operations outside the Netherlands.) The least profitable banks are in France, Germany, Italy, and Switzerland. It is likely that these results reflect more than just the breadth of permissible bank powers. Casual empiricism suggests that the countries with broader powers and lower profitability also tend to have greater concentration and monopoly in financial services, fewer foreign owned banks, and greater government intervention in the ownership or control of the banks. These countries also appear to have more poorly developed capital or securities markets. A recent study conducted by the World Bank classifies the United States, the United Kingdom, Canada, and Holland as market-based economies in contrast to Germany, Spain, and Italy, which are classified as bank-based economies (Demirguc-Kunt and Levine 1999). Switzerland, which has well-developed capital markets, is classified as a market-based economy despite its large bank dominance.

Recent research has shown that banking and financial markets matter for the real economy. The more developed and efficient the financial market, the faster is real per capita growth in the country (Levine "Financial Development"; 1997 Rajan and Zangales 1998). Moreover, countries that have both developed banks and developed capital markets grow faster, on average, than countries that have one but not the other financial intermediation channel developed, which, in turn, grow faster than countries that have neither developed bank nor capital markets (Levine "Stock Markets" 1997).

Casual empiricism from countries that have recently experienced banking and currency crises suggests that having two developed intermediation channels also mitigates the magnitude of financial problems. When one channel—either banking or capital markets—experienced problems, market participants were able to shift to the other channel to some extent and, at least partially, avoid a credit crunch. For example, a recent study shows that when capital markets suffered a severe bout of illiquidity in the fall of 1998, some business borrowers in the United States were able to shift to bank financing (Saidenberg and Straham 1999). However, to the extent capital markets may serve larger participants better than smaller ones relative to banks, the two channels are not perfect substitutes. Competition between developed bank and capital market channels supplements competition within each channel to improve the efficiency of both channels (Greenspan August 27, 1999; Kaufman and Kroszner 1997). The excessive economic and political power of banks that permits them to obtain government support to restrict competition within their own industry and also hinder the development of an independent capital market can be particularly costly at times of severe financial difficulties.

Because U.S. banks are on the restrictive end of the global powers spectrum and because the U.S. capital market is highly developed, it appears appropriate for U.S. legislation to permit banks to move farther toward the center of the spectrum. In light of the evidence, albeit weak, noted above, caution nevertheless should be exercised so that the additional powers granted do not go too far and move U.S. banks to the other end of the spectrum, which through time may reduce efficiency and increase government involvement. Defining the optimal banking and financial structure or architecture and determining where it fits on the spectrum require additional research, possibly even experimentation.

Policy makers should also be cautious about permitting financial megamergers that result in megainstitutions. To date, there is little empirical evidence of significant economies of scale or scope, but considerable evidence that big banks in highly concentrated environments build close relationships with government that may lead to greater government intervention and influence in operations that may, in turn, lead to credit allocation and increase the probability of poor future performance and even economic insolvency. The evidence suggests that most gains in efficiency from mergers appear to come from x-efficiency gains, or improvements in managerial operations closer to the efficiency frontier. To the extent megabanks are relatively more difficult to manage, the potential for such efficiency gains may be greater, but the likelihood of realizing them smaller. Judging from many other countries, greater fear of widespread damage from the failure of megabanks and closer relationships of big banks with government are also likely to lead to greater pressures to invoke "too-big-to-fail" policies to protect all stakeholders, including shareholders, at megabanks (Hoenig 1999).

Banks in Europe are in the process of engaging in megamergers and creating additional megainstitutions. Although the European Union has removed legal barriers to cross-border bank entry and mergers within the fourteen member countries, with the exception of banks in the Scandinavian and Benelux countries, little such activity has occurred. Rather, domestic political forces are promoting within-country consolidation to grow the domestic banks to a size that will both discourage takeovers by foreign banks and be more conducive to cross-border acquisitions of foreign banks. This strategy is more likely to result in reduced competition and increased inefficiency than in reduced risk through greater diversification and increased efficiency. There is little reason for the United States to follow this example solely for the sake of matching size, just as the inability of U.S. banks to match the increased size of Japanese banks in the early 1990s did not harm their competitive position or profitability in the long run. On the other hand, the Japanese suffered greatly for their pursuit of size and market share rather than efficiency and profitability.

FINANCIAL ARCHITECTURE AND ASSET PRICE BUBBLES

Much has been made recently about the dangers of asset price bubbles for the health of the macroeconomy through the wealth effect on consumption. Burst bubbles lead to sharply lower wealth and lower gross domestic product (GDP). But there is an equally if not more important channel for economic mischief from such bubbles through bank insolvencies and credit crunches. Banks and financial institutions and markets in general do not do well when asset price bubbles burst. Banks engage primarily in expected income (or cash flow) and asset-backed lending. When bubbles burst, expected future income and cash flows are generally revised downward abruptly, and the value of collateral in the form of securities and real property declines rapidly below the value of the loans, so that the collateral does not serve as reliable protection for the loan. As a result, bank loan defaults rise sharply, increasing bank losses and failures. This pattern was clear in the United States in the 1980s, Japan in the 1990s, and East Asia and Russia in the late 1990s.

Like any other failure, bank failures reduce wealth (although the wealth of the defaulting or restructured debtors increases) and, if in sufficiently large numbers, aggregate income. But, as noted earlier, some also believe that banking is special and that failures are both contagious and disrupt the payments system. In addition, the failure or near failure of a large number of banks is likely to increase the risk aversion of the industry as a whole to extending risky loans, and it results in a credit crunch. Loan rates will increase driving primarily smaller and riskier firms out of the financial markets. Additionally, if the claims of some stakeholders of failed banks (e.g., some depositors) are insured or guaranteed at par or book value, then the failures are also likely to require transfer payments to these parties from financial supporters of the insurers or guarantors, who are the healthy institutions and ultimately the taxpayers. Such transfer payments have been large in counties experiencing banking crises in recent years, ranging from a relatively low 3 percent of GDP in the United States for the thrift failures of the 1980s (the commercial bank failure required no lasting use of public funds) to 40 percent or more in Korea, Indonesia, Thailand, and Malaysia. Thus, widescale bank failures from the bursting of asset price bubbles may have a substantially greater adverse impact on the macroeconomy than the direct effects of the burst bubbles on nonbank balance sheets and behavior.

Although the appropriate role of central banks in dealing with asset price bubbles has been receiving increasing attention from economists in recent years, it remains highly controversial (Bernanke and Gertler 1999; Greenspan September 27, 1999; Kaufman 1999). Almost by their very

nature, bubbles are difficult to identify ex-ante. One person's bubble is another's equilibrium price based on sound fundamentals. Only ex-post can bubbles be identified to nearly everyone's satisfaction. A number of past attempts by central banks in the United States and elsewhere to prick perceived asset price bubbles before they burst have not been very successful in mitigating the damage. The resulting declines in asset prices resulted in substantial and long-lasting downturns in real economic activity. Some argue that these costs could have been reduced if the central banks had acted still earlier to prevent even the beginnings of the bubble. Others argue that no action would have been better than bubble bursting; in actuality, the perceived bubble may not have been a bubble. Still others argue that, while possibly high, the cost of bursting policies is still low relative to what it would have been had the central bank not acted when it did. The bubble would have inevitably burst later from a higher level for other reasons.

Regardless of whether the central bank acts or does not act to burst a perceived bubble, it can reduce the adverse impact of a bursting bubble on the macroeconomy by protecting banks by requiring them to hold sufficient economic capital to absorb most, if not all, of the possible losses from loan defaults and other events threatening their solvency. As is frequently noted, banks, ceteris paribus, have operated with lower capital-to-asset ratios since the introduction of government safety nets in the form of deposit insurance, lender of last-resort facilities, and guarantees of daylight overdrafts than they did before. This leaves them more vulnerable to large and sudden adverse macroeconomic shocks than in the past. The low average failure rate of banks relative to nonbank failures in the United States before the guarantees, when asset price bubbles also existed, suggests that banks were able to protect themselves reasonably well. Contrary to the current popular view, they appear to have priced the externality of possible contagion and spillover into their capital ratios. Even following the collapse in the stock market and other asset prices in 1929, nearly all medium and large banks survived. Only small, unit, poorly diversified banks failed in large numbers for reasons other than fraud.

The higher capital-asset ratios maintained by most nonbank bank competitors, who are not covered by the federal safety net, suggest that higher capital requirements to near these levels would not represent an undue burden on the banks. Rather, the increase would represent primarily the reduction or removal of a subsidy from government underpricing of its guarantees. If no subsidy were involved, the cost of the now higher deductible and less valuable guarantees to the banks could be reduced commensurately. Moreover, any potentially higher cost could be avoided by permitting subordinated debt (subordinated to the government guarantee agencies) to be included as regulatory capital. Unlike

dividend payments on equity, interest payments on subordinated debt are deductible to the issuer in the United States for income tax purposes. Subordinated debt absorbs losses as well as equity and has monitoring incentives more closely paralleling those of the government guarantor.

Indeed, the capital requirement on banks could even be scaled to the central bank's fear of the existence of asset price bubbles and vary through time. Increasing the value of the capital trip wires required in the FDICIA for prompt corrective action and least cost resolution to values adjusted for the downward bias from the existence of the government safety net should be an important component of any new bank architecture to protect the banks, their customers, and the macroeconomy from a wide range of unexpected, large, adverse shocks.

NOTES

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1. In November 1999, after this chapter was written, Congress passed and President William Clinton signed the Gramm-Leach-Bliley Act (Financial Modernization) which, among other things, repeals the private securities underwriting and trading prohibitions of the Glass-Steagall Act of 1933; revises the Bank Holding Company Act of 1956 to permit financial holding companies to engage in a full range of financial services through subsidiaries, including commercial banking, merchant banking, and insurance underwriting and brokerage; and expands the regulatory authority of the board of governors of the Federal Reserve System by designating them the umbrella regulators of the financial holding companies and limiting the new activities that may be conducted in operating subsidiaries of national banks rather than in affiliates of bank holding companies.

REFERENCES

Benston, George J., and George G. Kaufman. "Deposit Insurance Reform in the FDIC Improvement Act: The Experience to Date." *Economic Perspectives* (Federal Reserve Bank of Chicago), Second Quarter 1998, 2–20.

———. "The Intellectual History of the Federal Deposit Insurance Corporation Improvement Act of 1991" in George G. Kaufman, ed., *Reforming Financial Institutions and Markets in the United States*, Boston: Kluwer Academic Publishing, 1994, pp. 1–17.

Bernanke, Ben, and Mark Gertler. "Monetary Policy and Asset Price Volatility." Paper presented at Conference on New Challenges for Monetary Policy, Kansas City, Missouri, Federal Reserve Bank of Kansas City, August 1999.

Carnell, Richard S. "A Partial Antidote to Perverse Incentives: The FDIC Improvement Act of 1991." In *Research in Financial Services*, edited by George G. Kaufman, vol. 9, 199–233. Greenwich, Conn.: JAI Press, 1997.

Demirguc-Kunt, Asli, and Ross Levine. "Bank-Based and Market-Based Financial Systems: Cross-Country Comparisons." Working Paper 1718. Washington, D.C.: World Bank, June 1999.

Edwards, Franklin R., and Frederic S. Mishkin. "The Decline of Traditional Banking: Implications for Financial Stability and Regulatory Policy." *Economic Policy Review* (Federal Reserve Bank of New York), July 1995, 27–45.

Greenspan, Alan. "Remarks to Symposium on New Challenges for Monetary Policy." Speech presented to the Board of Governors of the Federal Reserve Bank System, Washington, D.C., August 27, 1999.

———. "Remarks to World Bank and International Monetary Fund." Speech presented to the Board of Governors of the Federal Reserve System, Washington, D.C., September 27, 1999.

Hoenig, Thomas M. "Financial Industry Megamergers and Policy Challengers." *Economic Review* (Federal Reserve Bank of Kansas City), Third Quarter, 1999, 7–13.

Kaufman, George G. "Central Banks, Asset Bubbles, and Financial Stability." In *Central Banking, Monetary Policy, and the Implications for Transition Economies*, edited by Mario Blejer and Marko Skreb, 143–83. Boston: Kluwer Academic, 1999.

Kaufman, George G., and Randall S. Kroszner. "How Should Financial Institutions be Structured? Option for Financial System Design." In *Safe and Sound Financial Systems: What Works for Latin America*, edited by Liliana Rojas-Suarez, 97–122. Washington, D.C.: Inter-American Development Bank, 1997.

Kaufman, George G., and Larry R. Mote. "Glass-Steagall: Repeal by Regulatory and Judicial Reinterpretation." *Banking Law Journal* (September/October 1990): 388–421.

———. "Is Banking a Declining Industry? A Historic Perspective." *Economic Perspectives* (Federal Reserve Bank of Chicago), May/June 1994, 1–21.

Levine, Ross. "Financial Development and Economic Growth: Views and Agenda." *Journal of Economic Perspectives* (June 1997): 688–726.

———. "Stock Markets, Economic Development, and Capital Control Liberalization." *Perspective* (Investment Company Institute), December 1997, 1–7.

Rajan, Raghruam G., and Luigi Zangales. "Financial Dependence and Growth." *American Economic Review* (June 1998): 559–586.

Saidenberg, Marc R., and Philip E. Straham. "Are Banks Still Important for Financing Large Business?" *Current Issues in Economics and Finance* (Federal Reserve Bank of New York), August 1999.

Shadow Financial Regulatory Committee. "The Latest Round of Bills on Financial Modernization." *Journal of Financial Services Research*, 155 (April 26, 1999).

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4

What Is Optimal Financial Regulation?

Richard J. Herring and Anthony M. Santomero

INTRODUCTION

The financial system is regulated for a wide variety of purposes. The objective that distinguishes financial regulation from other kinds of regulation is that of safeguarding the economy against systemic risk. Concerns regarding systemic risk focus largely on banks, which traditionally have been considered to play a special role in the economy. The safety nets that have been rigged to protect banks from systemic risk have succeeded in preventing banking panics, but at the cost of distorting incentives for risk taking. Regulators have a variety of options to correct this distortion, but none can be relied upon to produce an optimal solution.

Technological and conceptual advances may be ameliorating the problem. Banks are becoming less special. The United States is leading the way, but the trends are apparent in other industrial countries as well. The challenge facing regulators is to facilitate these advances and hasten the end of the special status of banks. Once banks have lost their special status, financial safety nets may be dismantled ending the distortions they create. Ultimately, regulation for prudential purposes may be completely unnecessary. The optimal regulation for safety and soundness purposes may be no regulation at all.

RATIONALES FOR FINANCIAL REGULATION

A well-functioning financial system makes a critical contribution to economic performance by facilitating transactions, mobilizing savings, and allocating capital across time and space. Financial institutions provide payment services and a variety of financial products that enable the corporate sector and households to cope with economic uncertainties by hedging, pooling, sharing, and pricing risks. A stable, efficient financial sector reduces the cost and risk of investment and of producing and trading goods and services.[1]

Financial markets also provide a crucial source of information that helps coordinate decentralized decisions throughout the economy. Rates of return in financial markets guide households in allocating income between consumption and savings, and in allocating their stock of wealth. Firms rely on financial market prices to inform their choices among investment projects and to determine how such projects should be financed.[2]

In view of these critical contributions to economic performance, it is not surprising that the health of the financial sector is a matter of public policy concern and that nearly all national governments have chosen to regulate the financial sector. Robert C. Merton (1990) is undoubtedly correct when he argues that the overall objective of regulation of the financial sector *should be* to ensure that the system functions efficiently in helping to deploy, transfer, and allocate resources across time and space under conditions of uncertainty.

However, financial regulation attempts to accomplish several objectives beyond facilitating the efficient allocation of resources. In fact, at least four broad rationales for financial regulation may be identified: safeguarding the financial system against systemic risk, protecting consumers from opportunistic behavior, enhancing the efficiency of the financial system, and achieving a broad range of social objectives from increasing home ownership to combating organized crime.

Guarding Against Systemic Risk

Safeguarding financial markets and institutions from shocks that might pose a systemic risk is the prime objective of financial 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 impor-

Table 4.1
Regulatory Measures and Regulatory Objectives

Regulatory Measures	Systemic Risk	Consumer Protection	Efficiency Enhancement	Broader social objectives
Antitrust enforcement / competition policy		✓	✓	✓
Asset restrictions	✓			✓
Capital adequacy standards	✓	✓		
Conduct of business rules		✓	✓	✓
Conflict of interest rules		✓	✓	
Customer suitability requirements		✓		
Deposit insurance	✓	✓		
Disclosure standards	✓	✓	✓	
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	✓			✓

Source: Adapted from Herring and Litan (1995).

tant financial center. Such events can disrupt the normal functioning of financial markets and institutions by destroying the mutual trust that lubricates most financial transactions.

As an examination of the systemic risk column of Table 4.1 indicates, a substantial number of regulatory measures have been justified on the 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. Systemic risk and measures to counter systemic risk are considered in greater detail in later sections.

Protecting Consumers

The second fundamental rationale for financial regulation is the protection of consumers against excessive prices or opportunistic behavior by the providers of financial services or participants in financial markets. (See the consumer protection column of Table 4.1.) 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.[3]

The United States 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. Last year significant attention was focused on substantial price variations within various categories of financial products offered within the European Union.[4] 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. Then, 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 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 the 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, it is hoped that strict enforcement of the conduct of business rules with civil and criminal sanctions will deter firms from exploiting asymmetric information vis-à-vis customers. Strict enforcement of the 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 United States, for example, the Pension Benefit Guaranty Corporation, a government-sponsored entity, insures pension coverage up to $30,000 a year for each worker.

Disclosure requirements also help ameliorate the asymmetric information problem. 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.

Disclosure concerns also extend to the way in which information is made available to the public. The United States 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. 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).

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.

Enhancing Efficiency

Competition policy and antitrust enforcement are the key tools for enhancing the efficiency of the financial system as can be seen in the efficiency enhancement column of Table 4.1. 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 transaction 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 and 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 take a 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 the conduct of business rules and the 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.[5] 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 with better access of the 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.

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 new financial services authority. It should be a fundamental part of the regulatory process everywhere.

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 choose 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.[6]

The housing sector is often favored by government intervention in the financial system. For example, the United States 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 United States 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.

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 United States has required its commercial banks and thrift institutions to serve the credit needs of low-income areas.

The United States has also used regulation to achieve the social objective, first articulated by Thomas Jefferson, of preventing large concentrations of political and economic power within the financial sector, especially among banks. Until recently, the United States 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 United States, banks are required to report all currency transactions of $10,000 or more. Currently, Congress is considering even more stringent reporting requirements, which has raised serious concerns about violations of privacy rights. Similarly the new Financial Services Authority in the United Kingdom has adopted the objective of "preventing . . . financial businesses being used for the purposes of financial crime" (Davies 1998, 2).

WHY BANKS HAVE BEEN ESPECIALLY IMPORTANT

The preceding survey of the objectives of financial regulation has identified three categories of rationales that apply not only to the financial sector but also to some nonfinancial products and services as well. Although the means of regulatory intervention may vary from sector to sector, the objective of protecting consumers from opportunistic behavior by vendors or agents applies equally to medical services, food, and many other consumer purchases. Similarly, the objective of enhancing the efficiency of markets motivates regulation in a broad range of industries in addition to the financial services industry. Budget-constrained governments are always eager to exploit opportunities to advance broad social objectives through off–balance sheet means. Because of its status as a heavily regulated industry, the financial services industry is highly vulnerable to such attempts, but it is not unique in this regard.

One motive for financial regulation is distinctive to the financial services industry. Systemic risk motivates a considerable amount of financial regulation, but it does not apply to regulation in other industries. Moreover, within the financial sector, concerns about systemic risk tend to focus on banks. Why are banks especially associated with systemic risk? What is special about banks?

Many of the products and services provided by contemporary banks are indistinguishable from the products and services provided by other kinds of financial institutions. To that extent banks are less special than they once were, a topic we will investigate later. However, the argument that banks are special is based on three factors: the distinctive functions they have performed, the importance of those functions to the economy, and the consequences these functions have had for the vulnerability of their balance sheets to liquidity shocks.

First and foremost, banks have been the principal source of nonmarket

finance to the economy. Banks gather and assess information about prospective borrowers and their investment opportunities. Using specialized human capital and financial technologies[7] they screen borrowers to identify wealth-enhancing projects that they will then finance. This may, in fact, be their most important contribution to economic performance.[8] The assets that banks acquire in this process are frequently illiquid and difficult for external parties to value without substantial effort.[9] After originating loans, banks have traditionally funded and serviced the loans, monitored the borrowers' performance, and provided workout services when necessary. These efforts enhance the returns from the investment project, as borrowers respond to ongoing monitoring by increasing effort and by making operating decisions that adhere to the proposed purpose of the loan.[10] The bank role as monitor improves the financial performance of the project and the returns accruing to the intermediary itself.

On the liability side of their balance sheets, banks mobilize savings to fund the loans they originate. The second distinctive function performed by banks is to serve as the principal repository for liquidity in the economy. Banks attract demand deposits by offering safe and reliable payment services and a relatively capital-certain return on investment. Banks have developed the capacity to mobilize idle transactions balances to fund investments while at the same time clearing and settling payments on behalf of their depositors. By pooling the transactions balances of many different transactors they can acquire large, diversified portfolios of direct claims on borrowers which enable them to meet liquidity demands while still holding substantial amounts of illiquid assets. For the economy as a whole, the smooth and reliable functioning of the resulting payments system is critical to the health of the economy.[11]

In addition to providing sight deposits, banks offer longer-term deposits that must compete directly with other instruments available in the financial markets.[12] The return on deposits must be sufficient to compensate for the risk and delayed consumption associated with accepting deposit claims on the bank.

These functions—making loans, clearing and settling payment transactions, and issuing deposits—are performed more or less simultaneously. Banks transform the longer-term, risky, illiquid claims that borrowers prefer to issue into safer, shorter-term, more liquid demand and savings deposits that savers prefer to hold. This asset transformation often involves maturity transformation as well. The consequence of the simultaneous performance of these three functions is that banks have balance sheets that are vulnerable to liquidity shocks. While these functions are usually mutually compatible—indeed, some researchers have argued that banks have an advantage in monitoring loans because they can observe the cash flows of their borrowers through transactions accounts (Black 1975; Fama 1985; Lewis 1991)—a sudden, unanticipated

withdrawal of the deposits that fund longer-term, illiquid loans can give rise to instability.[13,14]

Instability in the banking system can undermine confidence in the financial system and disrupt its role in facilitating the efficient allocation of resources that enhances economic growth. Moreover, it can impose massive costs on society.

From 1980 to 1995, more than three-quarters of the members of the International Monetary Fund (IMF) experienced serious and costly banking problems. In sixty-nine of these countries, losses exhausted the net worth of the entire banking system, in several cases driving it to negative levels. Ten countries spent more than 10 percent of their gross domestic product (GDP) in bailing out their banking systems (Davies 1998). These direct costs of recapitalizing the banking system do not include the heavy costs imposed on the real economy caused by the disruption of the payments system, the interruption of credit flows to bank-dependent borrowers, and the withdrawal of savings from the financial system.

The systemic risk rationale for the prudential regulation and supervision of banks starts from the presumption that the three basic functions that make banking special—loan origination, provision of payment services, and deposit issuance—are central to the functioning of the financial system and the real economy, but give rise to bank financial structures that are vulnerable to crises. The opportunity for depositors to run from a bank arises from the fact that deposits must be redeemed at face value on short notice or on demand. The motive for a bank run can arise because banks are highly leveraged—with an equity-to-asset ratio that is lower than other financial and nonfinancial firms—and hold portfolios of illiquid assets that are difficult to value. A rumor that a bank has sustained losses that are large relative to its equity may be sufficient to precipitate a run. Moreover, because forced liquidation of illiquid bank assets can cause additional losses, once a run has begun it tends to be self-reinforcing. Even depositors who were not alarmed about the original rumor of losses may join the run once it has begun because they know that the run itself can cause substantial losses that may jeopardize the bank's solvency.

The failure of a nonbank firm is usually not a source of public policy concern in most countries.[15] Indeed, the failure of one nonbank firm often improves business prospects for the remaining firms in the industry. In contrast, a shock that damages one bank seriously can spread to other banks. Contagious transmission of shocks may occur because of actual direct exposures to the original shock and the failed bank or, more insidiously, because of suspected exposures. In the absence of clear and convincing evidence to the contrary, depositors are likely to suspect that the banks least able to withstand a shock have been damaged. They will attempt to protect themselves by liquidating their deposits at the sus-

pected, weaker banks and reallocating their portfolios in favor of deposit claims on banks perceived to be stronger or have claims on the government.[16] The result is a flight to quality and a banking panic that not only destroys the specific capital of the banks under pressure, but also diminishes the capacity of the financial sector to fund economically viable projects and monitor them to a satisfactory conclusion.[17]

When banks fail and markets seize up, they cannot perform their essential function of channeling funds to those offering the most productive investment opportunities. Some firms may lose access to credit. Investment spending may suffer in both quality and quantity. Indeed, if the damage affects the payments system, the shock may also dampen consumption directly. The fear of such an outcome is what motivates policy makers to act.

Prudential regulation and supervision to safeguard against systemic risk arise in the first instance from this externality. While bank managers and shareholders of a bank have appropriate incentives to take account of the losses to themselves if their bank should fail—destroyed shareholder value, lost jobs, and damaged reputations—they do not have adequate incentives to take account of the potential external costs to other banks and the real economy. Thus they may take riskier positions than if they were charged a fair market price for such risks. Prudential regulation and supervision are designed to counteract the incentive for excessive risk taking.

PRUDENTIAL REGULATION AND SUPERVISION: THE FINANCIAL SAFETY NET

The financial safety net is an elaborate set of institutional mechanisms rigged to safeguard the economy from systemic risk that might result from contagious bank runs. This safety net can be viewed as a series of circuit breakers designed to prevent a shock to one bank from spreading through the system to damage the rest of the financial grid. For our purposes, the safety net can be seen as consisting of six circuit breakers that are triggered at various states in the evolution of a banking crisis.[18]

First, the chartering function seeks to screen out imprudent, incompetent, or dishonest bank owners and managers who would take on excessive insolvency exposure. This usually involves fit and proper tests that bank owners and managers must pass to qualify for a banking license. In the aftermath of the collapse of the Bank for Credit and Commerce International, which was engaged in fraud on an international scale, a number of countries established additional tests for the continuance of a banking license for foreign banks.

Second, in the event that some financial institution managers do attempt to expose their institutions to excessive insolvency exposure, the

prudential supervisory function seeks to prevent it. Prudential supervision is concerned both with leverage and asset quality. Capital adequacy standards, which have been partially harmonized internationally, attempt to constrain leverage risk and ensure that the bank has an adequate buffer against unanticipated losses. Supervisors attempt to control asset risk by risk-weighting capital requirements, diversification rules, restrictions on connected lending, or outright prohibitions on certain kinds of assets. Bank examinations focus not only on the bank's own processes and procedures to control asset risk, but also on individual bank assets to make sure that they are stated at fair value and that reserves for loan losses are appropriate.

Third, in the event that prudential supervision does not prevent excessive insolvency exposure and a damaging shock occurs, the termination authority attempts to make a regulatory disposition of the bank before it exhausts its net worth and causes losses to depositors. If depositors could rely on prompt termination[19] before a bank's equity is exhausted, there would be no incentive to run. But the supervisory authorities face technical and political difficulties in implementing the termination function with such precision. The result is that insolvent banks are often permitted to operate long past the point at which they have exhausted their net worth.

Fourth, if the termination authority acts too late to prevent the bank from exhausting its net worth, deposit insurance may protect depositors from loss and remove the incentive for depositors to run from other banks thought to be in jeopardy. In response to the banking crisis of the Great Depression, the United States established the Federal Deposit Insurance Corporation in 1933 to provide insurance against loss for owners of small deposits. Although most other countries have long had systems of implicit deposit insurance, it is only within the last thirty years that other countries have established similar systems of explicit deposit insurance. Although deposit insurance is motivated by concerns for consumer protection, it may also play an important role in stabilizing the banking system against shocks. The protection is imperfect, however. Even in the United States, where the link to financial stability has been most explicit, deposit insurance has been limited, leaving some depositors vulnerable to loss. The possibility of a run still exists.

Fifth, even if runs occur at other institutions, the lender of last resort may enable solvent institutions to meet the claims of liability holders by borrowing against assets rather than selling illiquid assets at firesale prices. Henry Thornton and Walter Bagehot articulated the rationale for the lender of last-resort function during the nineteenth century. Usually, the central bank functions as the lender of last resort because it has the resources to intervene credibly to meet any extraordinary demand for domestic liquidity. Although the members of the European Monetary

Union have agreed on the powers of the European Central Bank for the conduct of monetary policy, they have not yet agreed on how—or whether—to provide lender-of-last-resort assistance to banks in the Euro zone.

Sixth, even if the lender of last resort does not lend to solvent but illiquid banks, the monetary authority may protect the system from cumulative collapse by neutralizing any shift in the public's demand for cash thus protecting the volume of bank reserves. In this way, the monetary authority can prevent any flight to cash from tightening liquidity in the rest of the system. This is precisely what the U.S. monetary authorities failed to do during the Great Depression. The lesson was not wasted: most modern monetary authorities are committed to maintaining policy control over the reserve base.

In the major industrialized countries, the various circuit breakers that constitute the financial safety net have been generally successful in preventing a problem at one institution from damaging the system as a whole. In the United States, for example, the safety net that was constructed in the 1930s has virtually eliminated the contagious transmission of shocks from one depository institution to the rest of the system. Similarly, in the recent Swedish banking crisis, the Riksbank succeeded in preventing a contagious transmission of shocks to the rest of the financial system and minimized the damage to the real economy.

In effect, banking systems in most market economies operate with the implicit support of their regulatory authorities. With the possible exception of New Zealand, where the authorities have explicitly taken down their safety net for banks,[20] the intervention of the regulatory authorities in times of crisis is rationally expected in every market economy. Financial safety nets have reduced the frequency of bank runs, banking panics, and financial disruption; however, these safety nets may have worked too well. Depositors and other creditors have come to rely on their bank's access to the safety net as a protection against loss with the consequence that they exercise only limited surveillance over riskiness. The pricing of bank liabilities depends heavily on the bank's presumed access to the safety net. The result is that banks are not penalized for taking greater risks as heavily as they would be if they did not have access to the safety net.[21] Consequently, banks take on greater risks.[22]

This moral hazard feature of the safety net has contributed to the frequency and severity of banking problems, which appear to be rising. In both Eastern Europe and the Far East, we have ample evidence of institutions that have assumed excessive risk and suffered severe consequences. As noted above, from 1980 to 1995, three-quarters of the members of the IMF experienced serious and costly problems. For example, the real cost of the savings and loan crisis in the United States has been estimated at less than 5 percent of GDP; current estimates for

the Japanese economy center are five to ten times this proportion. In less-developed economies, where the magnitude of the crisis is even greater and fewer resources are available for resolution, the costs associated with the financial safety net have exceeded the countries' financial capacities.

This has led many to argue that financial regulation and the safety net itself need some adjustments. Indeed, perhaps the entire approach to regulation needs to be reexamined to find a better way to obtain the benefits associated with a well-functioning financial sector, but at a lower cost.

OPTIMAL REGULATION IN THE STATIC CASE: PRICING RISK TO COUNTER MORAL HAZARD

Since the safety net distorts incentives for risk taking by insulating institutions and their creditors from the full consequences of their risky choices, and the consequences are seen as quite costly, the challenge for optimal regulation is to increase market discipline. In principle, this may be accomplished in a number of ways: risk-rated deposit insurance premiums, least-cost resolution combined with prompt corrective action, a subordinated debt requirement, or a narrow bank structure. In practice, none of these remedies is entirely satisfactory.

Risk-Rated Deposit Insurance Premiums

Ideally, the deposit insurer could set risk premiums for deposit insurance that would be identical to the premiums that depositors would demand if the safety net did not exist. In the United States, the Federal Deposit Insurance Corporation Improvement Act (FDICIA) of 1991 required that the Federal Deposit Insurance Corporation (FDIC) implement a system of risk-rated deposit insurance premiums. However, to date, the result has been very crude. The maximum price difference between the safest and the riskiest banks when the system was implemented was eight basis points. This differential was far below the differential that would be charged in debt markets for such large differences in risk.[23] It is also far less than the differences in actuarially fair insurance premiums estimated from option pricing models.[24]

Although the FDIC's approach was especially crude, it is difficult to see how an ideal system could be implemented effectively. The deposit insurer faces two problems. First, the deposit insurer must be able to measure the bank's current net worth, evaluate its risk exposure, and assess how the bank's net worth will vary under alternative scenarios. Such information is not currently available to the regulators and, in view of the opacity of most banks, it would be very costly to obtain and verify. Second, the deposit insurer must be able to constrain the ability of the

insured bank from increasing its exposure to risk after the deposit premium is set. This would require an ex post adjustment procedure to constrain moral hazard that has yet to be satisfactorily specified.[25]

Prompt Corrective Action and Least-Cost Resolution

The FDICIA implemented yet another market-mimicking approach to countering the moral hazard incentive implicit in the safety net. The aim was to make sure that banks would not be able to operate without substantial amounts of shareholders' funds at risk.[26] It attempted to reduce the scope for forbearance by replacing supervisory discretion with rules that would mimic the conditions that banks impose on their own borrowers when their financial condition deteriorates.[27]

The FDICIA rules are designed to stimulate prompt corrective action as soon as a bank's capital position deteriorates. The regulatory sanctions become increasingly severe as a bank's capital position declines from the well-capitalized zone down through three other zones to the critically undercapitalized zone in which the supervisor must appoint a receiver or conservator within ninety days. The objective is to provide the bank's owners with incentives to take prompt corrective action by recapitalizing the bank or by reducing its risk exposures before its capital is depleted. This is a strategy of deploying the termination authority in a way that substitutes for market discipline.

The FDICIA also attempted to end two other sources of distortion implicit in the safety net. The United States, like many other countries, has provided implicit deposit insurance for all depositors at large banks. This subsidy has been provided in two different ways. First is the practice of using purchase and assumption transactions in which the institution purchasing the assets of a failing institution assumes all of its liabilities. The FDICIA reduced the scope for these transactions by requiring that the FDIC use the least-costly method of resolution under the assumption that its only liability is for explicitly insured deposits.

Second is the practice of extending lender-of-last-resort assistance to insolvent banks. This provides uninsured depositors the time and opportunity to flee before the bank is closed. The FDICIA attempted to deter such practices by depriving the central bank of the protection of collateral for advances extended to banks near insolvency. There is a major exception if the Federal Reserve and the secretary of the Treasury agree that such advances are necessary to prevent "a severe adverse effect on . . . the national economy." Whether this will be a significant constraint on Federal Reserve behavior when a large bank is in jeopardy remains to be seen. There is at least some reason, however, to doubt that protection will be automatic, and this should enhance market discipline.

The FDICIA's prompt corrective action measures are subject to the

same problems as risk-rated deposit insurance. Both depend on accurate measurement of the economic value of a bank's capital position and its potential risk exposure. At a minimum, this would require adoption of a mark-to-market accounting system.[28] Moreover, capital adequacy will need to be monitored in shorter intervals than in the past since a bank active in derivatives markets can change its risk exposures drastically within a very short period.

Subordinated Debt

A rule that banks fulfill a specified part of their capital requirements with subordinated debt provides an alternative way to increase market discipline on banks. Subordinated debt is junior to all claims other than equity and so serves as a buffer against losses by the deposit insurer. Subordinated debt has some of the characteristics of "patient money" because it typically has a maturity greater than one year and cannot be redeemed quickly during a crisis. Subordinated creditors have strong incentives to monitor bank risk taking and impose discipline—provided they believe that they will not be protected by the safety net in the event of failure. Indeed, their loss exposure is similar to that of the deposit insurer. They are exposed to all downside risk that exceeds shareholders' equity, but their potential upside gains are contractually limited. In contrast to shareholders, who may choose higher points on the risk-return frontier, subordinated creditors (like the deposit insurer) generally prefer safer portfolios and are likely to penalize banks that take significant risks.

The price discipline of traded subordinated debt—which is actively traded in secondary markets—is a much quicker and perhaps more precise way of controlling bank risk taking than regulatory measures which are often blunt and cumbersome to deploy. A falling price of subordinated debt can alert other creditors about the condition of the bank or the actions of the managers, creating a broader market reaction. Moreover, market prices, which are more forward looking than regulatory examinations, may provide regulators with valuable information on the market's perception of the risk taken by banks (Horvitz 1983).

When bank risk increases unexpectedly, banks may not have to pay higher rates or face possible quantity discipline until their subordinated debt matures. For this reason, subordinated debt proposals generally require that banks stagger the maturities of their subordinated debt so that a modest proportion matures each quarter. In this way, market discipline—through price and quantity sanctions—may be effective and informative, but sufficiently limited in magnitude to provide time for crisis resolution or orderly termination.

Critics of subordinated debt requirements emphasize that subordi-

nated debt holders would face the same informational asymmetry problems faced by deposit insurers but without the authority to conduct detailed examinations.[29] They also question whether secondary markets in subordinated debt would be broad and deep enough to provide reliable price signals.

Narrow Bank Proposals

Another approach to correcting the distortion of incentives that arises from the safety net is to narrow the range of assets that the insured unit of a bank can hold so that the risk to the deposit insurer is essentially zero and so that whatever remaining subsidy inherent in the safety net does not spill out to distort other lines of business. "Narrow bank" proposals (Litan 1987; Pierce 1991; Miller 1995) require that insured deposits be invested only in short-term Treasury bills or close substitutes. Banks would also issue nonguaranteed financial instruments such as commercial paper to fund conventional bank loans, just as finance companies and leasing companies do now.

Alternatively, most of the benefits of the transparency and simplicity of this approach could be maintained, while allowing greater flexibility in portfolio choice, if banks were permitted to hold not only short-term Treasury bills but also other assets that are regularly traded on well-organized markets and can be marked to market daily. This could be implemented in two ways: (1) the "secure depository" approach in which institutions would be required to form separately incorporated entities taking insured deposits and holding only permissible, marketable assets; or (2) the "secured deposits" approach in which insured deposits secured by a lien on a pool of permissible assets would be in a corporate entity holding other assets and liabilities (Benston et al. 1989). Capital requirements for the secure depository (or the analogous excess collateral requirements for secured deposits) would be set to ensure that the chance of insolvency between daily mark-to-market points is reduced to some minimal probability. This would, in effect, permit the termination function to be performed with the precision necessary to protect depositors and the deposit-insuring agency from loss.

Critics argue that the narrow bank approach does not address all of the features that make banks special and especially vulnerable to systemic risk. Government might still feel compelled to exercise prudential oversight over the other parts of financial institutions that provide credit to difficult-to-monitor borrowers and issue liabilities that substitute for lower-yielding deposits in the narrow bank. The commitment to constrain the safety net to the narrow bank might not be credible and thus the distorted incentives for risk taking may continue.

Table 4.2
Banks' Share in Financial Intermediation, 1994

Germany	77%
Japan	79%
United States	23%

Source: Bank for International Settlements, Annual Reports and IMF International Financial Statistics.

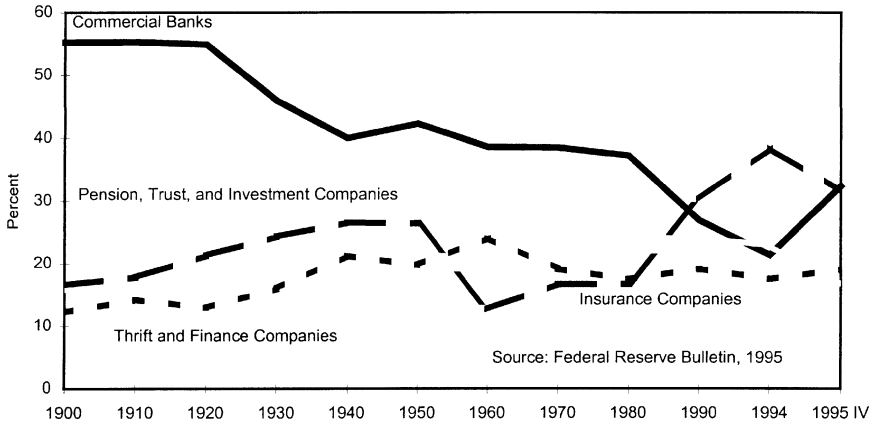
LOOKING BEYOND THE STATIC VIEW: BANKS HAVE BECOME LESS SPECIAL

The case for prudential regulation of banks to safeguard against systemic risk rests on the argument that banks are special. This stems from their central role as providers of credit, as repositories of liquidity, and as custodians of the payments system, which gives them a balance sheet structure that is uniquely vulnerable to systematic risk. Indeed, in most countries, banks retain a central role as the most important providers of credit (see Table 4.2).

The one exception is the United States, where banks have experienced a marked decline in their share of the assets held by the financial sector.[30] Although this declining share is often assumed to be a recent phenomenon, in fact the trend was apparent in the 1920s. Indeed, the 1920s were an era much like the last two decades in which the share of assets held by banks declined and that of pension funds trusts and investment companies grew. In the broader historical context, the anomaly may have been the relative stability of the bank share of total assets from the 1940s through the mid-1970s. Figure 4.1 offers some evidence of this for the U.S. case.

The reasons for this long-term trend and its recent acceleration are, no doubt, numerous. However, technology is clearly an important force. Advances in technology have led to innovations in financial instruments and institutions that have blurred the traditional product-line boundaries that formerly distinguished banks from other financial institutions. The ability to call up information cheaply at any time from virtually any location has enabled other financial institutions to design new products that compete effectively in terms of price and quality with traditional bank products. Regulators have generally responded to these developments by liberalizing some of the regulatory restrictions that constrained competition among banks and between banks and other financial institutions including foreign financial institutions.

Figure 4.1
Relative Shares of Total Financial Intermediary Assets, 1900–1995 Q4



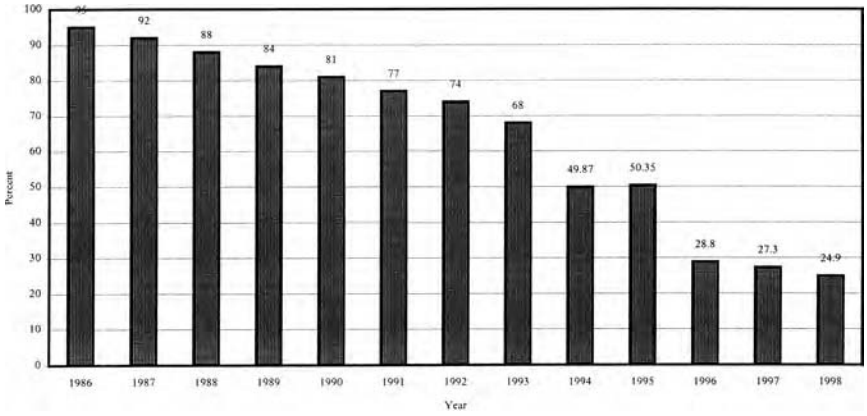
The impact has been most dramatic on the asset side of banks' balance sheets. The increased institutionalization of consumer savings, especially in pension plans, life insurance, and mutual funds, has given other institutions the scale to assess and diversify credit risk in competition with banks. Improved disclosure standards have made information regarding the creditworthiness of borrowers, which was once the proprietary domain of bankers, publicly available. Credit-rating agencies have grown in importance and perform the kind of analysis that was once the comparative advantage of banks. Moreover, when credit-rating agencies have turned their attention to banks, they have often concluded that banks are less creditworthy than many of their prime borrowers.

The decline in the role of banks as intermediators of credit risk has been most pronounced in a U.S. context with regard to business finance. Banks have lost ground to other, less regulated intermediaries such as finance companies and to securities markets, especially the commercial paper market and the high-yield securities market. Indeed, some cynical observers have asserted that the typical bank loan is simply a less liquid, underpriced junk bond.

The decline in business lending is also mirrored in consumer lending (see Figure 4.2). Banks have lost market share to nonbanks such as AT&T, GMAC, GE, and Morgan Stanley Dean Witter. Twenty years ago, banks completely dominated the card-transactions processing business. Now, banks hold less than 25 percent of receivables, and close to 80 percent of credit card transactions are processed by nonbanks, such as First Data Resources.[31]

Increasingly, nonbank, single-purpose providers have successfully competed for some of the most profitable traditional bank products. The

Figure 4.2
Bank Market Share of Credit Card Receivables, 1986–1998

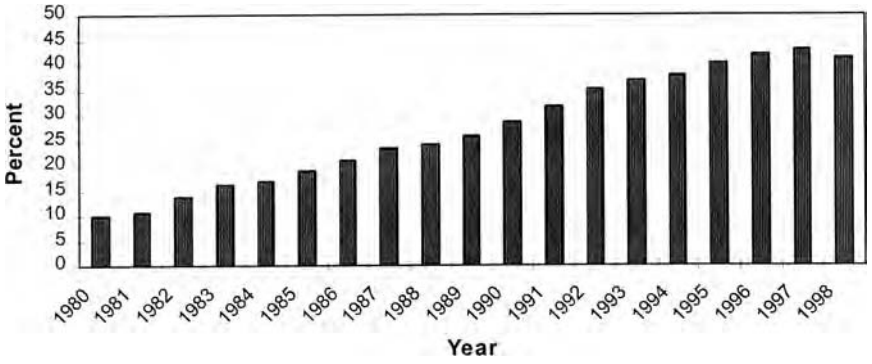


development of securitization techniques has transformed the way in which many kinds of credit transactions—which would previously have been conventional bank loans—are structured.

The growing importance of securitization is especially obvious in the transformation of the traditional mortgage (see Figure 4.3). Formerly, a bank originated, funded, and serviced the mortgage until it was repaid. Now one firm may originate the mortgage. Another firm may fund the mortgage or pool the mortgage with others and partition the anticipated flow of income from the pool into marketable securities that will appeal to particular groups of investors around the world. Another firm may insure the pool of mortgages to facilitate this process. The servicing of the mortgage may be allocated to yet another specialist firm that has data-processing expertise. The consequence is that mortgages will be funded at a lower cost than if firms were obliged to hold mortgages to maturity, and what was once an illiquid bank asset is transformed into a highly marketable security. This unbundling can be executed so smoothly that the mortgagee may be entirely unaware that it has taken place. These techniques have been successfully applied to many other kinds of credit transactions, including credit card receivables, auto loans, and small business loans.

Banks are also losing ground on the liability side of their balance sheets. As the baby boom generation matures and inherits wealth, consumer demand will shift from credit products to savings products. This trend is apparent in most industrial countries. In the United States over the next twenty years, the population under age fifty will remain the same as it is today, but the population older than fifty will double. The traditional bank entry in the competition for consumer savings—the time

Figure 4.3
Securitized Mortgages as a Percent of Total Mortgages, 1980–1998



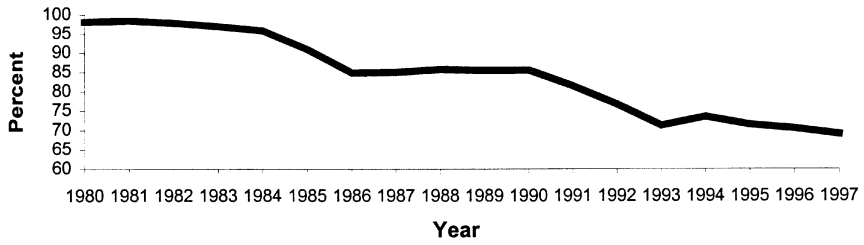
Source: Board of Governors of the Federal Reserve System, "Flow of Funds Accounts," various years.

and savings account—is deservedly losing ground to mutual funds that have much leaner cost structures and can offer higher returns.[32] Bank time and savings deposits have declined steadily relative to fixed-income mutual funds since 1980 (see Figure 4.4).

New technology—often introduced by nonbanks—is jeopardizing even the fundamental role of banks in facilitating payments (see Figure 4.5). Many mutual fund families and most brokerage houses offer cash management accounts that permit individuals to arrange for their salaries to be deposited automatically in their cash management accounts from which routine payments can be made automatically and irregular payments may be made by phone twenty-four hours a day. Personal checks may be drawn on the money market account. In addition, money market accounts can be linked to a credit card that also functions as a debit card at automated teller machines for cash needs. Although payments through the account are cleared through a bank, the role of the bank is a regulatory artifact, not an essential, unique part of the transaction.

Looking ahead, it is not clear how retail customers will want to deal with their banks in the future—or, indeed, whether they will want to deal with banks at all. It is clear that retail customers want ubiquitous access, speed, and reliability. Channels for delivery of banking services are proliferating and some bypass banks altogether. Cyber cash or e-money is the most revolutionary concept. In principle, money can be downloaded to a personal computer or a palm-sized electronic wallet or smart card and used to make purchases over the internet or even from vendors on the street. Banks retain the advantage—due in part to deposit insurance—of consumer trust, but other firms—software, telephone, or

Figure 4.4
Bank Time and Savings Deposits Decline Relative to Fixed-Income Mutual Funds, 1980–1997



Source: *Investment Company Institute Mutual Fund Fact Book*, 1998; Federal Deposit Insurance Company, *Historical Statistics on Banking*, 1997.

cable companies—may have advantages that will prove to be more potent in the world of cyber cash.

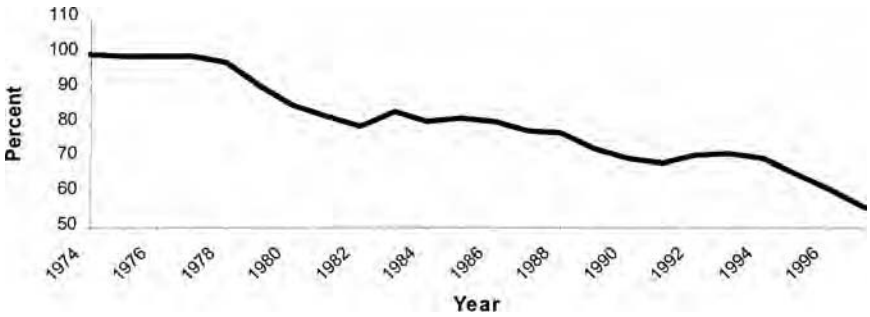
In view of the declining role of the traditional intermediation business, it is not surprising to see that the importance of net interest income to both the banking sector and the economy as a whole has fallen in the United States (see Figure 4.6). Because this decline in the intermediation business is economically motivated and technologically driven, it is likely to be both irreversible and global in impact.

Although the intermediation business has declined, banks have managed to prosper nonetheless by shifting from traditional intermediation functions to fee-producing activities, such as trusts, annuities, mutual funds, mortgage banking, insurance brokerage, and transactions services (see Figure 4.7). Notwithstanding the constraints on allowable bank activities in the United States, imposed by the Glass-Steagall Act and the Bank Holding Company Act, banks have managed to develop new lines of business to compensate for the decline in the traditional intermediation business.

Overall, banks are holding their own (see Figure 4.8), but with a very different configuration of earnings.[33] Spread income accounted for about 80 percent of bank earnings only a decade ago. Now most large regional and money center banks earn more than half their income from fees and trading income.

The result is that banks are markedly less special in the United States than they were even a decade ago. They are no longer the primary source of business and consumer finance. Neither are they the main repository of liquid savings for the financial system. They do remain custodians of the payments system, and for that reason concerns about systemic risk

Figure 4.5
Checkable Deposits Decline Relative to Money Market Mutual Fund Shares, 1974–1998



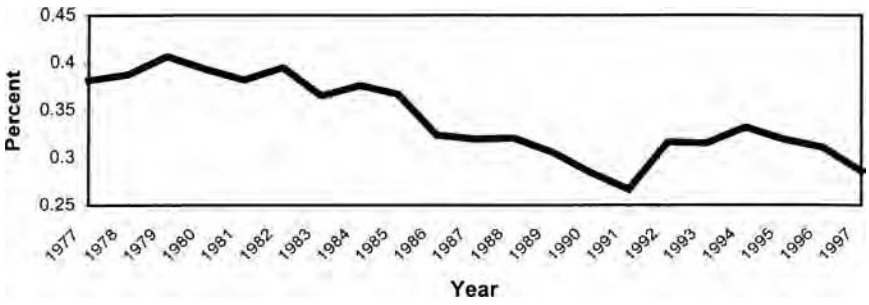
Source: *Investment Company Institute Mutual Fund Fact Book*, 1998; Federal Deposit Insurance Company, *Historical Statistics on Banking*, 1997.

persist. The principal source of concern is what Mark J. Flannery (1998) has described as "credit-based" mechanisms for the exchange of large-value payments. The problem is that many (but not all[34]) national payments systems permit banks to run substantial overdrafts in the process of clearing and settling payments. In effect, the systems rely on the equity of participating banks to control default risks and, failing that, the willingness of governments to intervene and support the system in the event of crisis.

The G-10 Committee on Payment and Settlement Systems has attempted to measure and quantify exposures that result from settling foreign exchange transactions. The Allsopp Report (issued by the Bank for International Settlement in 1996) concluded that exposures could exceed three days' worth of trades with exposures to a single counterparty in excess of a bank's capital. The failure of a counterparty could set off a chain reaction that might bring the whole system to a halt.

This kind of credit exposure is especially insidious. Although it is relatively easy to measure and monitor direct bilateral exposures to a particular bank, it is virtually impossible to evaluate indirect exposures. D. B. Humphrey (1986) illustrated this point when he simulated the consequence of the failure of a single settling participant in the Clearinghouse Interbank Payments System (CHIPS) in the era before bilateral credit limits, net debit caps, and collateralization arrangements were established. He found that the failure had devastating knock-on effects to many other banks in the system as the original default caused other banks to default, which caused still more banks to default. When Humphrey tried the simulation on another day during the same month, the

Figure 4.6
Net Interest Income Less Charge-offs as a Percent of Financial Sector GDP, 1977–1997



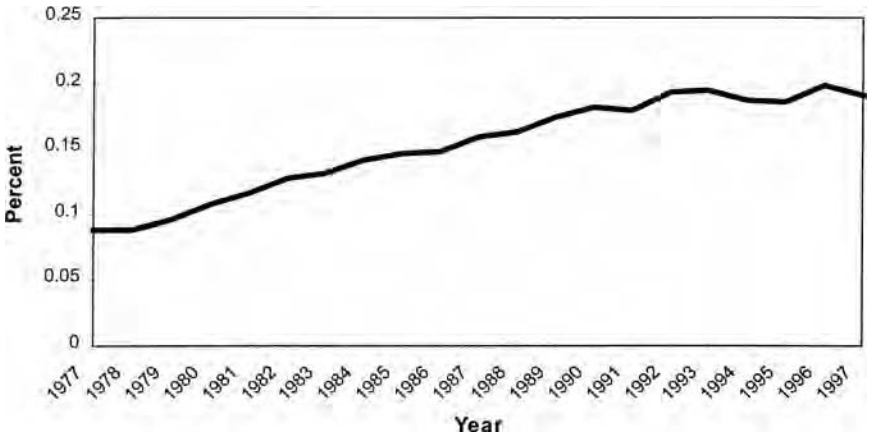
Source: Survey of Current Business; Federal Deposit Insurance Corporation, *Historical Statistics on Banking*, 1997.

scope of the devastation to the payments system was comparable, but a different set of banks was affected. These indirect exposures are opaque not only to outsiders monitoring the banks, but also to the banks themselves.

Under pressure from the regulatory authorities, led by the G-10 Committee on Payment and Settlement Systems, private sector clearinghouses and central banks have been taking measures to reduce and eventually eliminate overdrafts. Real-time gross settlement, in which settlement is made payment for payment without overdrafts, is the objective. Indeed, there are plans for implementation of a continuously linked settlement bank to eliminate default risk from the clearing and settlement of foreign exchange transactions. Collateralization techniques have long been used to eliminate default risk from the settlement of futures contracts, and they have also been used to eliminate the risks illustrated by Humphrey in CHIPS. The private sector, following proposals by the Group of Thirty (Global Derivatives Study Group 1993), has pressed for strengthening the legal infrastructure to support netting of gross exposures so that smaller net amounts need to be settled.

In support of these efforts to reduce credit risk in the payments systems, central banks in the three largest economic regions have committed to expanding their hours of operation so that payment-against-payment transactions can take place in bank reserves. Since December 1997, the Federal Reserve has extended the operating hours of Fedwire from 12:30 A.M. to 6:30 P.M. Eastern Standard Time so that it overlaps with the entire European business day and two-and-one-half hours with Japan. The TARGET system for settling Euros began operations in January 1999 from 7:00 A.M. to 6:00 P.M. Central European Time. By 2001 the Bank of Japan will open its Japan Net from 9:00 A.M. to 7:00 P.M. Tokyo time so

Figure 4.7
Noninterest Income as a Percent of Financial Sector GDP, 1977–1997



Source: Survey of Current Business; Federal Deposit Insurance Corporation.

that it will overlap Fedwire for four-and-one-half hours and TARGET for four hours.

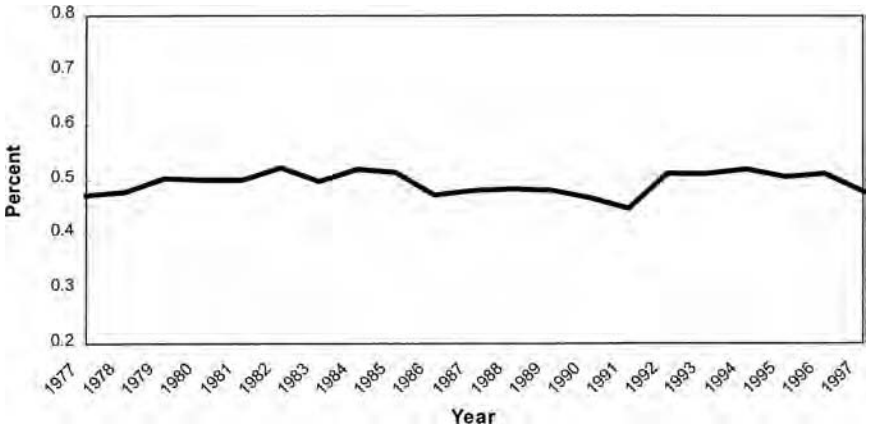
Flannery sees this movement away from a credit-based payments systems as "eliminating the need for prudential government supervision of large financial firms" (1998, 30). Once the issue of bank solvency has been divorced from the integrity of the payments system, the last remaining aspect in which banks are special will have ended. When banks are no longer a source of systemic risk, the safety net can be taken down and banks can be regulated like other financial firms.

"OPTIMAL" REGULATION IN THE TRANSITION: SOME SIMPLE PRESCRIPTIONS

Banks everywhere have been subjected to intense regulatory oversight and limits, to one degree or another, on allowable activities. Banks in the United States have been subjected to relatively tight activity restrictions that have, until quite recently, prevented them from entering many lines of the investment banking business or providing most kinds of insurance to their customers. Nonetheless, they and their counterparts throughout the world have managed to restructure their businesses so that they are much less dependent on traditional intermediation income than they were even a decade ago. As we have seen, most of the large American banks now earn a greater portion of their income in the form of fees and trading revenue with less from spread income.

The same trend is apparent for their counterparts throughout Europe

Figure 4.8
Bank Value Added as a Percent of Financial Sector GDP, 1977–1997



Source: Survey of Current Business; Federal Deposit Insurance Corporation, *Historical Statistics on Banking*, 1997.

and the major OECD nations (see Table 4.3). Using OECD data, Table 4.3 contrasts the ratio of interest income to fee income over two discreet periods, 1986–1988 and 1993–1995. Notice that in each case the relative importance of on–balance sheet net interest income has declined over the period.

European banks by tradition have long been permitted to offer a much broader range of services than their American counterparts. They have been active for some time in underwriting, the direct purchase of equity in the industrial sector, investment management, and a wide array of securities activities. A recent study of comparative financial systems illustrates the wide range of bank activity across Europe and around the world (Barth, Nolle, and Rice 1997). Their comparison across the G-10 and other European Union nations demonstrates that European banks have broad charters and are fully competitive across the entire range of universal banking products.

In view of the more liberal regulatory regime in Europe, it is surprising that European banks continue to be relatively heavily reliant on traditional intermediation services. Spread income is still more important to European banks than noninterest income. In this regard, European banks remain more special than their counterparts in the United States. Nonetheless, they are subject to the same forces of technological advance, innovations in financial instruments and institutions, and heightened competition as banks in the United States. This difference is likely to disappear over time as indicated in Table 4.3.

Table 4.3
Relative Sources of Revenue of Major Banks

	1986-1988			1993-1995			
	Spread	Fees	Ratio	Spread	Fees	Ratio	Change
Belgium	1.69	.47	3.60	1.28	.50	2.57	28.76%
Germany	2.25	.56	4.04	2.11	.57	3.70	8.56%
France	2.00	.48	4.17	1.26	.90	1.40	66.49%
Spain	3.90	.83	4.68	3.02	.93	3.24	30.80%
UK	3.20	1.85	1.73	2.37	1.83	1.30	25.07%

In light of this unmistakable trend, what should be the role of financial regulation? Here the message should be clear. If, as we have argued, it is not possible to correct fully the distorted incentives for risk taking that are implicit in the safety net, it is important to facilitate and nurture the trends that will ultimately make the safety net unnecessary. If the safety net cannot be patched adequately, the best course of action may be to advance the conditions under which it may be taken down.

How can this be accomplished, or at least supported, by regulating authorities? Here, we offer several simple prescriptions. *First*, the authorities should encourage the introduction of technological improvements that are lowering the costs of information and the costs of storing, retrieving, and organizing these data. They should be active supporters of competition in the technology and communication sectors. These technical advances will intensify international financial integration. Already, major investors routinely compare returns across a wide array of international financial arenas, and major borrowers choose from a menu that includes not only traditional domestic sources, but also numerous international alternatives.

Technical advances will accelerate the pace of innovations in financial products and institutions. The ability to call up information cheaply at any time from any location will enable institutions to design new products that will better serve the needs of their customers. This may often be a cheaper substitute for a service provided by a heavily regulated institution and thus will add to the pressures to liberalize regulation where it is counterproductive. Institutions will introduce new processes and streamline existing ones. Cheap and easy access to customer data and the application of expert systems will enable financial firms to target particular market segments more efficiently and to distribute multiple financial products at a very low marginal cost. Technical innovations will also enable financial firms to assess the profitability and riskiness of each line of business with greater accuracy and timeliness and thus manage capital more efficiently. As firms employ sophisticated management information systems to determine which lines of business to expand and which to exit, new kinds of financial institutions will inevitably arise.

The *second* prescription is for regulators to resist the temptation to re-regulate or promulgate regulations that will forestall the inevitable financial restructuring that is part of this change process. The fundamental thrust of the forces of change—intensified international financial integration, increased innovations in financial instruments and institutions, and the liberalization of financial regulation—is to heighten competition in the financial services industry. Greater competition will be painful to many firms. It is likely to reduce the prices of financial services, diminish profit margins, reduce market shares both globally and locally, and reduce the franchise value for some institutions. There will be strong political pressures to restrain these forces of creative destruction by providing implicit and explicit subsidies to local firms in general or selectively to firms in distress. Attempts will be made to restrict entry to slow the pace of change. Thus, the important challenge for regulation will be to maintain pro-competitive policies, which, in the long run, are in the national interest. This is not an easy task.

In addition, the regulatory authorities will be pressured to exercise forbearance to enable weak firms to adjust to new forces of competition or to support local firms facing aggressive external competition. It is important for the authorities to resist. Not only do such actions create a barrier to entry and maintain excess capacity in the market, but they also put the deposit insurer and taxpayers at significant risk. Entrenched managers may resist competitive pressures to downsize, streamline, or merge and instead take on riskier projects to try to maintain the size and profitability of their institutions. Since a regulatory response is likely to lag behind a bank's actual risk exposures, it could have serious consequences on both the financial sector and the real economy that depends upon it for capital.

Next, the standard competition policies will need to be reassessed. Antitrust policy, for example, has an important role to play because incumbent firms may try to bar new entrants. However, antitrust enforcement will need to be reconsidered because the relevant product markets may be global and extend across a range of competitors that includes financial institutions other than banks.

The conflict of interest rules, as well as fit and proper entry tests, should also be reexamined. Care should be taken to make sure that they are calibrated to accomplish consumer protection objectives and efficiency objectives only. It is important that they not deter new entrants unduly.

Third, since market discipline will increasingly substitute for prudential regulation, it is important to ensure that both regulation and the regulatory staff are of a quality that is consistent with global standards. In terms of the former, increasing emphasis must be placed on market values throughout the regulatory process, and it is important to improve

disclosure standards as well. Banks should be encouraged, if not required, to report their exposures to risk in terms of the market value of their assets, liabilities, and off–balance sheet positions. This will enable customers, creditors, and shareholders to evaluate their prospects and react accordingly. They should also be required to report on the risk-management and risk-control systems in place. The development and use of credit rating agencies should be encouraged.

In terms of the credit rating agencies, the quality and expertise of the regulation and examination staff must keep pace with the escalating standards of the global marketplace. In many respects, the infrastructure of any regulatory regime is the people who enforce and oversee the regulations that have been put in place by the political process. In this changing financial sector, investments must be made in this infrastructure to ensure that the regulatory staff are cognizant of global market trends and are capable of ensuring the health of institutions under their regulatory mantle.

The safety net will undoubtedly be subjected to substantial new strains before it can be taken down. The transition will be painful for regulators and for entrenched firms. The gain, however, will be a much stronger, more flexible financial system that will serve its customers at a much lower cost.

NOTES

An earlier version of this chapter was presented at the symposium on the International Competitiveness of the Swedish Financial Industry, March 25, 1999.

1. See Herring and Santomero (1991) for a detailed discussion of the role of the financial sector in a developed economy. For a more recent reference, see Allen and Santomero (1997).
2. This is the role emphasized by Merton (1989).
3. See the next subsection for a further discussion of this point.
4. See European Commission (1998).
5. See Santomero and Babbel (1996), Chapters 1 and 2.
6. See Santomero ("Effective Financial Intermediation" 1997, 1998) for a fuller discussion of this issue.
7. For a fully developed model of this function, the reader is referred to Diamond (1984), Santomero (1984), and Bhattacharya and Thakor (1993).
8. For a fuller discussion of this role and its effect on the economy, see Herring and Santomero (1991).
9. For a discussion of this issue, see Gorton and Pennacchi (1990) and Santomero and Trester (1997).
10. See Allen and Gale (1988) for a discussion of the importance of monitoring to project outcomes.
11. Goodfriend (1989) and Flannery (1998) make this case quite effectively.
12. This point is made theoretically and empirically in Fama (1985).

13. The classic references here are Diamond and Dybvig (1983) and Gorton (1988).

14. See Kareken and Wallace (1978), Jacklin (1987), and Santomero (1991) for a fuller discussion of these issues.

15. Nevertheless, the failure of very large firm tends to attract governmental attention in most countries because of its impact on employment.

16. If depositors withdraw their balance and hold them as cash, bank reserves will contract unless the monetary authority neutralizes the shift. This may be an additional source of contagion.

17. See the work of Bernanke and Gertler (1989, 1990) for two similar models of this phenomenon.

18. This safety net is discussed in greater detail in Guttentag and Herring (1988) and Herring and Santomero (1991).

19. The "termination" of a bank means that the authorities have ended control of the bank by the existing management. Termination may involve merging the bank with another, liquidating it, operating it under new management acceptable to the authorities, or some combination of these actions.

20. New Zealand's policy is especially credible because all major banks are owned by foreign residents.

21. There are a large number of empirical studies on this point. See Gorton and Santomero (1990), Ellis and Flannery (1992), and Flannery and Sorescu (1995).

22. For empirical evidence see Furlong and Keeley (1987, 1991).

23. For example, the differential between B-rated and AAA-rated bonds is typically well over 100 basis points.

24. Kuester and O'Brien (1990), for example, estimated that fair premiums for most firms would be very low, less than 1 basis point. A few very risky banks had fair premiums in the thousands of basis points.

25. Some researchers have argued that private insurance companies should provide some deposit insurance coverage, but private insurers would face the same challenges faced by the government insurer. Moreover, if the government continues to be concerned about systemic risk, its problem may shift from one of guaranteeing banks to guaranteeing private insurers of banks.

26. One of the clear lessons from the S&L debacle in the United States is that losses surge as institutions become decapitalized and shareholders and managers are tempted to gamble for redemption.

27. The fundamental analysis underlying this approach to bank regulation may be found in Benston and Kaufman (1988) and Benston et al. (1989).

28. The FDICIA calls for accounting reforms that would move regulatory measures of capital closer to actual market values, but no real progress has been made.

29. While disclosure practices are endogenously determined, one might expect subordinated debt holders to demand fuller disclosure. As Kane observes, "[A]n outside risk sharer must be able to persuade institutional managers to open their books in ever-changing and nonstandard ways" (1995, 455).

30. Allen and Santomero (1997) present evidence of a trend away from bank finance in other leading countries.

31. See Kelly Holland and Amy Cortese, "The Future of Money: E-Cash Could Transform the World's Financial Life," *Business Week*, June 12, 1995, 70.

32. See Santomero and Hoffman (1998) for even more evidence of this trend away from banking institutions.

33. Boyd and Gertler (1994) have emphasized this point.

34. Australia, New Zealand, Switzerland, and the new TARGET system for clearing and settling Euro payments operate without permitting participating banks to run overdrafts.

REFERENCES

Allen, F., and D. Gale. "Optimal Security Design," *Review of Financial Studies* 1, no. 13 (1988): 229–63.

Allen, Franklin, and Anthony M. Santomero. "The Theory of Financial Intermediation." *Journal of Banking & Finance* 21, nos. 11–12 (December 1997): 1461–85.

Bank for International Settlements. "Reducing Foreign Exchange Settlement Risk: A Progress Report." Basle, July 1998.

———. "Settlement Risk in Foreign Exchange Transaction." The Allsopp Report. Basle, March 1996.

Barth, James R., Daniel E. Nolle, and Tara N. Rice. "Commercial Banking Structure, Regulation, and Performance: An International Comparison," Office of the Comptroller of the Currency. Working Paper, March 1997.

Benston, George J., and George G. Kaufman. *Risk and Solvency Regulation of Depository Institutions: Past Policies and Current Options*. Monograph Series in Finance and Economics, New York University, Salomon Center for Graduate School of Business, 1988.

Benston, G. J., D. Brumbaugh, J. Guttentag, R. Herring, G. Kaufman, R. Litan, and Ken Scott. *Blueprint for Restructuring America's Financial Institutions*. Washington D.C.: Brookings Institution, 1989.

Bernanke, B. S., and M. Gertler. "Agency Costs, Net Worth and Business Fluctuations." *American Economic Review* 1 (1989): 14–30.

———. "Financial Fragility and Economic Performance." *Quarterly Journal of Economics* 3 (1990): 559–83.

Bhattacharya, S., and A. V. Thakor. "Contemporary Banking Theory." *Journal of Financial Intermediation* 3 (1993): 2–50.

Black, Fischer. "Bank Funds Management in an Efficient Market." *Journal of Financial Economics* 2 (December 1975): 323–39.

Boyd, John, and Mark Gertler. "Are Banks Dead? Or Are the Reports Greatly Exaggerated?" *Quarterly Review* (Federal Reserve Bank of Minneapolis), Summer 1994.

Caprio, Gerard, Jr. "Bank Regulation: Case of the Missing Model." Finance and Private Sector Development Division, The World Bank. Policy Research Working Paper no. 1574, January 1996.

Davies, Howard. "Why Regulate?" Henry Thornton Lecture, City University Business School, November 4, 1998.

Diamond, D. W. "Financial Intermediation and Delegated Monitoring." *Review of Economic Studies* 51 (1984): 393–414.

Diamond, D. W., and P. H. Dybvig. "Bank Runs, Deposit Insurance, and Liquidity." *Journal of Political Economy* 1 (1983): 88–114.

Ellis, David M., and Mark J. Flannery. "Does the Debt Market Assess Large Banks' Risk? Time Series Evidence from Money Center CDs." *Journal of Monetary Economics* 30, no. 3 (December 1992): 481–502.

European Commission. "Financial Services: Building a Framework for Action." Communication of the Commission. October 31, 1998.

Fama, Eugene F. "What's Different About Banks?" *Journal of Monetary Economics* 15 (1985): 29–39.

Flannery, Mark J. "Modernizing Financial Regulation (Again)." Paper presented at a conference on Financial Modernization and Regulation, Federal Reserve Bank of San Francisco, September 18, 1998.

Flannery, Mark, and Sorin M. Sorescu. "Evidence of Bank Market Discipline in Subordinated Debenture Yields: 1983–1991." *Journal of Finance* 50, no. 2 (June 1995): 699–718.

Furlong, Frederick T., and Michael C. Keeley. "Bank Capital Regulation and Asset Risk." *Federal Reserve Bank of San Francisco Economic Review* 0, no. 2 (Spring 1987): 20–40.

———. "Capital Regulation and Bank Risk-Taking: A Note." *Federal Reserve Bank of San Francisco Economic Review* 0, no. 3 (Summer 1991): 34–39.

Global Derivatives Study Group. *Derivatives: Practices and Principles*. Group of Thirty Report. Washington, D.C. 1993.

Goodfriend, Marvin S. "Money, Credit, Banking and Payment System Policy." In *The U.S. Payments System: Efficiency Risk and the Role of the Federal Reserve*, edited by D. Humphrey. Boston: Kluwer Academic Press, 1989.

Gorton, G. "Banking Panics and Business Cycles." *Oxford Economic Papers* 40 (1988): 751–81.

Gorton, G., and G. Pennacchi. "Financial Intermediaries and Liquidity Creation." *Journal of Finance* 45 (1990): 49–71.

Gorton, Gary, and Anthony M. Santomero. "Market Discipline and Bank Subordinated Debt." *Journal of Money, Credit & Banking* 22, no. 1 (February 1990): 119–28.

Guttentag, Jack M., and Richard J. Herring. "Prudential Supervision to Manage Systemic Vulnerability." In *Financial Services Industry in the Year 2000: Risk and Efficiency*. Proceedings of the Conference on Bank Structure and Competition, Federal Reserve Bank of Chicago, 1988, 502–633.

Herring, Richard J., and Robert E. Litan. *Financial Regulation in the Global Economy*. Washington, D.C.: Brookings Institution, 1995.

Herring, Richard J., and Anthony M. Santomero. *The Role of Financial Structure in Economic Performance*. Stockholm: SNS Forlag, 1991. In Swedish.

Horvitz, Paul. "Deposit Insurance After Deregulation." *Proceedings of the 9th Annual Conference of the Federal Home Loan Bank of San Francisco*, December 1983.

Humphrey, D. B. "Payments Finality and Risk of Settlement Failure." In *Technology and the Regulation of Financial Markets*, edited by A. Saunders and L. J. White, 97–120. Lexington, Mass.: D. C. Heath, 1986.

Jacklin, Charles J. "Demand Deposits, Trading Restrictions, and Risk Sharing." In *Contractual Arrangements for Inter-temporal Trade*, edited by Edward C. Prescott and Neil Wallace, vol. 1, 26–47. Minnesota Studies in Macroeconomics Series. Minneapolis: University of Minnesota Press, 1987.

Kane, Edward J. "Three Paradigms for the Role of Capitalization Requirements in Insured Financial Institutions." *Journal of Banking & Finance* 19 (1995): 431–459.

Kareken, John H., and Neil Wallace. "Deposit Insurance and Bank Regulation: A Partial-Equilibrium Exposition." *Journal of Business* 51, no. 3 (July 1978): 413–38.

Kuester, K. A., and J. M. O'Brien. "Market-based Deposit Insurance Premiums." *Proceedings of the Conference on Bank Structure and Competition*, Federal Reserve Bank of Chicago, 1990, 62–95.

Lewis, M. K. "Theory and Practice of the Banking Firm." In *Survey of Monetary Economics*, vol. 2, edited by C. Green and D. T. Llewellyn. London: Blackwell Press, 1991.

Litan, R. *The Revolution in US Finance*. Washington, D.C.: Brookings Institution, 1991.

Litan, Robert E. *What Should Banks Do?* Washington D.C.: Brookings Institution, 1987.

Merton, Robert C. "The Financial System and Economic Performance." *Journal of Financial Services Research* 4, no. 4 (December, 1990): 263–300.

———. "On the Application of the Continuous-Time Theory of Finance to Financial Intermediation and Insurance." *Geneva Papers on Risk and Insurance* 14, no. 52 (July 1989): 225–61.

Miller, Merton H. "Do the M&M Propositions Apply to Banks?" *Journal of Banking and Finance* 19 (June 1995): 483–89.

Pierce, James L. *The Future of Banking*. New Haven, Conn.: Yale University Press, 1991.

Santomero, Anthony M. "The Bank Capital Issue." In *Financial Regulations and Monetary Arrangements After 1992*, edited by M. Fratianni, C. Wihlborg, and T. D. Willet. Economic Analysis Series. New Holland Press, 1991.

———. "Deposit Insurance: Do We Need It and Why?" *Ekonomia* 1, no. 1 (Summer 1997): 1–19.

———. "Effective Financial Intermediation." In *Policy-Based Finance and Alternatives: East Asian Lessons for Latin America and the Caribbean*, edited by Kim B. Staking. Washington, D.C.: Inter-American Development Bank, 1997.

———. "Modeling the Banking Firm." *Journal of Money, Credit, and Banking* 16, part 2 (1984): 576–602.

———. "The Regulatory and Public Policy Agenda for Effective Intermediation in Post Soviet Economies." In *Financial Sector Reform and Privatization in Transition Economies*, edited by J. Doukas, V. Murinde, and C. Wihlborg. Vol. 7, 153–75. Elsevier Science Publishers B.V., 1998.

Santomero, Anthony M., and David Babbel. *Financial Markets, Instruments and Institutions*. Irwin Publications, 1996.

Santomero, Anthony M., and Paul Hoffman. "Life Insurance Firms in the Retirement Market: Is the News All Bad?" *Journal of the American Society of CLU and ChFC* (July 1998): 70–86.

Santomero, Anthony M., and Jeffrey J. Trester. "Financial Innovation and Bank Risk Taking." *Journal of Economic Behavior & Organization* 35, no. 1 (March 1998): 25–37.

———. "Structuring Deposit Insurance for a United Europe." *European Financial Management Journal* (June 1997).

5

The Optimum Regulatory Model for the Next Millennium—Lessons from International Comparisons and the Australian-Asian Experience

Carolyn Currie

INTRODUCTION

In February 1993 a poll was published that ranked the regulatory performance of securities markets in Asia (Asiamoney 1993).[1] The ranking, although predictive of the eventual outcome of resistance to contagion from the Asian crisis,[2] was notable for its total failure to query and assess the role of regulatory models governing the most important layer of the financial system, the banking sector (OECD *Systemic Risks* 1991).

The view of the systemic crises in Asian economies as being currency cries ignores the Organization for Economic Cooperation and Development's (OECD's) analysis of crises developed after 1987 (OECD *Systemic Risks* 1991). It also ignores the Australian response to rapid liberalization of its financial sector. Australia's experience in the last decade has been replicated by Asian economies in a maturation phase in the 1990s—a failure to impose strong prudential measures while not liberalizing protective measures led to an incorrect regulatory model being imposed on the key banking sector. This induced a climate in which banks failed in their delegated monitoring role, with concomitant blowout in bad and doubtful debts. Since the systemic crises in the Australian financial system, which resulted in $28 billion of bad and doubtful debts in 1992 (Verrender 1997, 27), authorities have attempted to move the regulatory model to the optimum, based on international best practice.

Overall there is a paucity of literature on classifying regulatory models in Asian financial systems. What has been studied has the same focus as

the Asiamoney poll, which ignores the wider national international and financial system. Such literature uses a narrow definition of national financial markets for dealing in securities and attempts to explain the Asian crisis using traditional economic theories,[3] specifically blaming misallocation of resources,[4] or resorting to theories of bank management,[5] or proffering explanations in terms of a tendency to political interference via a command or control economy.[6] At times all three explanations are used[7] together with reasons of underregulation or excessive deregulation.[8] This does not, however, explain exactly what was wrong with the regulatory models applied in those countries and how to correct them.

This chapter discusses the range of models that can be designed to regulate a financial system, putting forward a new taxonomy and applying it internationally. The usefulness of such a taxonomy is twofold. First, it can be used to test the success or failure of regulatory changes. Second, it can enhance our understanding of the current Asian systemic crises and possible solutions, such as publicly available rating of regulatory models.

A TAXONOMY OF REGULATORY MODELS FOR FINANCIAL SYSTEMS IN DIFFERENT LIFE CYCLE PHASES

A number of authors have classified regulatory models according to various criteria. Most are fairly simplistic, such as that of Allan Frenkel and J. D. Montgomery (1991) who distinguish only two models according to their use of protective measures—bankruptcy procedures and contractual relationships between banks and customers—ignoring prudential supervisory systems. Examples of other simple classification system are those of D. T. Llewellyn ("Rules" 1996) and of C. Goodhart, P. Hartmann, D. Llewellyn, L. Rojas-Suarez, and S. Weisbrod (1998) who distinguish between institutional and functional regulation. The former is regulation according to the type of institution or firm-based regulation, and the latter is regulation according to activity or industry-based regulation.

Very little has been written that refines such distinctions between regulatory models except for the most comprehensive classification system first developed by P. Grabosky and J. Braithwaite (1986) and later refined in subsequent works (Ayres and Braithwaite 1992; Grabosky and Braithwaite 1993). These authors used an interdisciplinary approach derived from psychology, criminology, and sociology to develop a typology to classify the various types of regulatory models used in Australia for every type of activity, not just the provision of financial goods and services. Grabosky and Braithwaite's approach, which concentrates on the

mode of enforcement, is expanded upon here in order to classify regulatory models according to the types of prudential supervisory and protective rules used, as well as exact modes of enforcement, as financial systems may differ greatly in how they enforce what basically may be the same set of rules.

A regulatory model can be defined as one that consists of an agency or group of agencies and a set of measures embodied in legislation or in government policy, with a primary goal of constraining, molding, or controlling the behavior of financial institutions operating within a national economy. The central regulatory body is accountable to the government, or it can have partial or full independence from the government. Its role with respect to the banking sector is to evolve prudential and protective measures and check and enforce compliance to them by applying sanctions.

Since central bank independence in setting regulatory goals is reflected in the types of measures devised to control the financial system, differences in regulatory models governing financial systems can be caused by differences in the prudential supervisory and protective rules. Prudential, or preventive, measures are designed to control the levels of risk assumed by banks and thus affect the probability of bank failures. Protective measures, on the other hand, offer protection to bank customers or to the banks themselves in the case of actual or impending bank failures. Prudential and protective measures can have a different coverage—firm and industry—and a different enforcement mode and strength of enforcement.

Different models of regulation have developed in different countries over time, even if all have common goals. Some models may be more effective than others in terms of goal achievement. In order to assess any change in performance in the financial system or a sector of it that results from a change in the regulatory model, it is necessary to understand the exact components of that model and specify which components have been altered. The most important factors distinguishing regulatory models governing financial systems are the strength of the enforcement mode or regulatory intervention applied when checking compliance with prudential measures, and the degree of restrictiveness of protective measures.

Prudential Supervisory Systems

Grabosky and Braithwaite (1986, 1993) view enforcement modes as consisting of pyramids of increasingly stringent enforcement actions necessary to respond to the diverse objectives of the regulated firms. Regulated firms are subject to escalating forms of regulatory intervention if they continually refuse to respond to regulatory demands.

Grabosky and Braithwaite have identified different types of regulatory intervention, which they call enforcement modes, ranging from weak to strong (non-enforcer to enforcer), based on multivariate clustering analysis, a technique that used thirty-nine variables to isolate nine major factors: *resources devoted by the government, citizen participation in the regulatory process, the degree of federalism displayed in the political system, the degree of legalism and use of the adversarial approach, regulatory standards and investigative strategies, sentencing, and the use of other sanctions*. These nine factors could then be used to identify seven different types of enforcement modes used to carry out any type of supervisory activity.

The weakest score on the thirty-nine variables used to rate agencies according to the major factors identified above would lead to the classification of the regulatory model used by an agency as having a conciliatory enforcement mode; the strongest score on these variables would indicate a strong enforcement mode. Those regulatory models receiving aggregate scores ranging from two to six would be classified then in direct ascending order between the strong and weak poles. Grabosky and Braithwaite were not attempting to produce a uniquely correct classification of every agency's enforcement mode, but to generate a broadly robust typology of agencies (1986, 222).

The seven categories of enforcement modes listed in Table 5.1 range from cooperative regulation and self-regulation to detached command or control regulation.[9] They focus on either particularistic solutions or rulebook solutions. Enforcement modes can be characterized by the degree of aggressiveness, by the degree of publicity given, and by the balance between deterrence and punishment as opposed to positive incentives for exemplary corporate conduct. Aggressiveness can be directly related to the number of staff employed out of the total supervised population.

The first three enforcement modes—the conciliatory, the benign big gun mode, and the diagnostic inspection mode—tend to lead to cooperative fostering of self-regulation with particularized solutions. Cooperative models are concerned to find the best solution to a particular problem irrespective of the law. The other four enforcement modes, detached token enforcement, detached modest enforcement, token enforcement modes, and strong enforcement mode, use all forms of enforcement. Rulebook oriented, they are legalistic, apply universal rules codified in law, and tend to use command, control, or arms-length regulatory relationships. What categorizes these models into separate quadrants is their propensity to enforce. The previous three, at the left end of a horizontal axis, represent weak enforcement; and the latter four, at the right-hand side of such an axis, represent the strongest end of the enforcement spectrum.

Enforcement modes are one dimension that distinguish prudential su-

Table 5.1
A Taxonomy of Prudential Systems—Enforcement Modes on an Industry-Wide Basis

ENFORCEMENT MODES ON AN INDUSTRY WIDE BASIS		
Strength of Enforcement	**Type of Regulation**	**Enforcement Mode**
WEAK Non enforcers operating in a Cooperative Mode fostering self-regulation 	**Particularistic Regulation** 	1. **Conciliators,** where law enforcement is rejected and conciliation is used to resolve disputes. 2. **Benign Big Guns**, whereby enormous power is given in terms of confiscation, takeover of activities, seizure, increasing operational rules, banning of products. Powers are rarely used - the threat is sufficient. This model has been called "regulation by raised eyebrows" or "by vice-regal evasion" (Grabosky and Braithwaite, 1986). 3. **Diagnostic Inspectorates,** where supervision is carried out by encouraging self regulation by well qualified inspectors detecting non compliance. The goal is a co-operative relationship though prosecution will be used to prosecute individuals, rather than companies. 4. **Token Enforcers,** where co-operative and self regulation is not important. 5. **Detached Token Enforcers,** where this model is more rule book oriented, training staff, prosecuting more, seizing assets, targeting repeat offenders. 6. **Detached Modest Enforcers,** involving rule book inspections, steady flow of prosecutions, with modest penalties.
STRONG Enforcers operating in a detached command manner	**Rulebook Regulation**	7. **Strong Enforcers** -uses all forms - licence suspensions, shut down of productions, injunctions and adverse publicity, as well as high penalties.

pervisory systems. Another dimension is the range of sanctions that can be pitched at the firm or the industry. A third dimension is the type of compliance audit methods used. Hence the seven enforcement modes can be combined with a range of sanctions and compliance audit methods to produce a variety of enforcement pyramids representing prudential supervisory systems. Under a theory known as the "pyramid strategies of responsive regulation,"[10] two possible pyramids represent sanctions: one represents the sanction pitched at single regulated firm, the other is pitched at the entire industry.

The form of the pyramid—broad based and high or, at the other extreme, narrow based and low—represents enforcement of compliance with prudential and protective measures using different kinds of sanctioning as appropriate to regulatory goals, where often secrecy of regulators' efforts to enforce compliance is necessary due to the effect on confidence of the banking system. The key contention of this regulatory theory is that the most successful financial systems use a broad-based but highly pitched sanction pyramid: "Lop the tops off the enforcement pyramids and there is less prospect of self regulation, less prospect of persuasion as an alternative to punishment" (Ayres and Braithwaite 1992, 39).

Hence the broader part of the first firm-based pyramid of sanctions consists of the more frequently used regulatory sanctions—coaxing compliance by persuasion. The next phase of enforcement escalation is a warning letter followed by imposition of civil monetary penalties, then criminal prosecution, plant shutdown, or temporary suspension of a license to operate. Each stage ensues only if there is failure to secure compliance. At the top of the first firm-based enforcement pyramid of sanctions, there is permanent revocation of licenses.

Knowledge by a firm of the enforcement pyramid actually increases the effectiveness of the enforcement. If a banking regulator has the power only to withdraw or suspend licenses as the one effective sanction, it is often politically impossible and morally unacceptable to use it, because the sanction is so drastic. Withdrawal of a license involuntarily in banking would result in that bank's losing the implicit or explicit guarantee of the central bank, with a likely bank run or cessation of activities, resulting in possible contagion effects in the rest of the financial system. This is one case of the paradox of extremely stringent regulatory laws at times resulting in a failure to regulate. The design of the regulatory sanction pyramid should ensure that the information costs to the regulated firm of calculating the probability of the application of any particular sanction will act as a barrier, and that there are sufficient politically acceptable sanctions to match the escalations of noncompliance with escalations in sanctions by the state (Ayres and Braithwaite 1992, 36).

A second type of pyramid can be used to represent regulatory sanc-

tions pitched at the entire industry, which can incorporate forces beyond the agency of the single firm, such as industry associations. These can be more important regulatory players than single firms; they can order their individual firms to comply because of signally clever regulatory pyramids by regulators. Self-regulation constitutes the broadest base of the pyramid; enforced self-regulation is the next layer up, followed by command regulation with discretionary punishment. The top layer is command regulation with nondiscretionary punishment such as the imposition of codes of conduct, or interest ceilings on loans, or prudential ratios across the entire banking industry. Obviously, self-regulation is the least burdensome from the viewpoint of taxpayers and the regulated industry. Given the possibility of socially suboptimal compliance with regulatory goals, however, the willingness of the regulator to escalate its regulatory strategy up another pyramid of interventionism must be communicated.

The range of firm- and industry-based sanctions are summarized in Table 5.2. Intrinsic to the success of the use of sanctions combined with one of the seven types of enforcement modes is the use of compliance audits of sufficient strength to deter, if not detect, noncompliance with prudential measures. The importance of this one factor of strong compliance audits to the effectiveness of regulatory models is highlighted in the rest of this chapter, which analyzes the regulatory models existing in Asian financial systems prior to the Asian crisis.

Table 5.3 depicts compliance audit types. These show a considerable variety, ranging from offsite and onsite examinations and utilizing a variety of surprise or spot inspections. They also differ in the use of company-appointed auditors, who cannot be monitored by the central bank, or central bank–appointed auditors. Compliance audits are thus distinguished by dimensions similar to sanction types, ranging from weak to strong in the strength of enforcement, when regulators are applying firm- or industry-based measures.

Regulatory agencies using weak enforcement modes, such as conciliators, benign big guns, and diagnostic inspectorates, tend to use weak sanctions and compliance audits at both the firm or industry level; agencies using strong enforcement modes, such as token enforcers, detached token enforcers, detached modest enforcers, and strong enforcers, tend to use strong compliance audit methods at all levels.

This taxonomy of prudential supervisory systems, which is unique to this chapter, includes three essential elements:

- The predominant enforcement mode (seven types)
- The type of sanctions (which can be summarized into two categories of strong and weak)
- The type of compliance audits (two types of strong and weak).

Table 5.2
A Taxonomy of Prudential Systems—Sanction Types

SANCTION TYPES		
Strength Of Enforcement	**Firm Based**	**Industry Based**
WEAK  **STRONG**	1. **Coaxing by Persuasion** (Armchair Chats) 2. **Written and Oral Communication** requesting further information (ratios and spreadsheets) 3. **Written advice** re escalation in prudential supervisory requirements 4. **On Site Inspections** 5. **Changes to Licences** 6. **Arranged Merger, Takeover, Sale** 7. **Seizure of bank assets and/or assumption of control of day to day running of the bank** by the staff of appointees of the central bank 8. **Revocation of licence**	1. **Consultation** re appropriate preventative measures 2. **Discussion papers** with written and oral input sought from industry via the Exposure Draft process 3. **Imposition of codes of conduct** 4. **Imposition of direct controls**, such as new prudential ratios, new interest rate ceilings, new reserve ratio rules, new capital adequacy rules 5. **Changes to Competition laws** 6. **Cooperation with sister agencies** to initiate prosecution to establish a precedent 7. **Changes to licensing rules, changes to banking laws** 8. **Enforced divestitures or acquisitions** (for instance of non bank financial institutions) on an industry basis. 9. **Nationalisation of the banking industry**

Table 5.3
A Taxonomy of Prudential Systems—Compliance Audits

COMPLIANCE AUDITS		
Strength of Enforcement	**Firm**	**Industry**
WEAK	**1. Offsite examinations** only using information supplied by the bank itself plus audited accounts, supplied by company appointed auditors **2. External (company appointed) auditors to supply additional data and are required to report directly if concerned regarding a bank's risk management.** Note that this system includes no method of monitoring or controlling company appointed auditors in the event of deliberate or unintentional errors in their reports **3.Pre arranged onsite inspections** of certain risk management aspects of a bank by regulators and/or by Banking Law auditors appointed by the central bank **4. Surprise or spot inspections** to check a bank's risk management by Banking Law auditors appointed by the subject bank. Banking Law auditors can liaise with Company Law auditors **5. Surprise onsite inspections** of all aspects of a banks' risk management systems, when auditors are appointed by the central bank, not from the same firm as the banking law auditors, or the company appointed auditors. **6. Surprise onsite inspections** but with reports only going to the bank and central bank **7. Reports published as a method of censure**	**1. Industry** hearings to check on best practice and to bring banks into alignment. **2. Special reports** commissioned by government using outside consultants. **3. Government initiated inquiries** at which evidence is sought from the public **4.Royal Commissions** presided over by a Judge or appointed by the government **5.Commission presided over by a specialist** appointed by an outside agency (e.g., the BIS, or the OECD or the IMF), or presided over by another country (For instance the Niemeyer Commission in Australia in 1930. Niemeyer was appointed by the UK government which was worried about Australia's commitment to honour its trade obligations and hence bonds.)
 **STRONG**		

Different financial systems differ in the strength of each element. A study conducted in 1985 by the International Banking Credit Agency (IBCA), undertaken just as liberalization was commenced in most OECD economies, indicates that there is some empirical support for the claim that the success or failure of a regulatory model after liberalization lies in the strength of its prudential measures in terms of the three components specified above prior to liberalization. It is also related to the strengthening of all the prudential supervisory measures after liberalization.

The distinguishing features of the enforcement mode of these OECD countries, which could be linked to the differential performance of their regulatory models compared to that of the new Asian tiger economies, were as follows:

- In the twelve countries surveyed—the Netherlands, Spain, Sweden, Switzerland, the United Kingdom, the United States of America, Belgium, Canada, France, Germany, Italy, and Japan—all the central banks demanded prudential returns from the banks, and ten of the twelve (starting with the United Kingdom in 1987) conducted in-depth inspections of the banks.
- Ten of the twelve countries surveyed carried out surprise or spot inspections.
- Belgium, Canada, Germany, the Netherlands, Spain, Sweden, and Switzerland, all countries with a relatively stable financial system, appointed banking law auditors in addition to the company law auditors who are appointed by the owners of the bank.
- Of the five countries with no separate banking law auditors, two, the United Kingdom and the United States of America, encountered problems prior to their reform of their prudential measures from 1987. The other three countries, Japan, France and Italy, which appoint no banking law auditors, all encountered problems with a major bank or banking group which has necessitated strengthening of their compliance audits.

In Japan the appearance of a strong prudential system was aborted by what the newspapers called fraud and corruption, or bad corporate governance,[11] possibly resulting from the Keiretsu system. Failure of both internal and external compliance audits in such cases as the Daiwa Bank (Ostrom 1996)[12] may be explained by alleged bribery of regulators at the Ministry of Finance, not exposed until 1998. The government has had to implement a rescue package for the entire banking sector (Ito and Szamosszegi 1998).

What is crucial in any analysis is the extent to which a systemic crisis can be caused by failure to detect bad or fraudulent bank management. How deeply embedded such management is in the financial system owing to flaws in the regulatory model will be exposed only during a systemic crisis. Although Credit Suisse in Switzerland had to write off $700

million after embezzlement and fraud occurred in their Chiasso branch, this did not cause contagion in their financial system, just a merger (Sampson 1997, 207). One off incident can be weathered when the prudential measures are strong, ensuring the overall stability of the system.

What is also evident from this brief comparative analysis of the prudential measures underlying different regulatory models is that the Australian regulatory model, prior to the commencement of reforms in 1992, did not match best practice in OECD countries. In many respects, it was more akin to the regulatory models governing Asian financial markets. The differences prior to 1992 and the improvements made thereafter are a possible explanation of why a crisis in its core banking unit in 1990–1991 did not produce a full-blown run on the Australian financial system when it did in the Asian financial markets.

The Bank of England has had the pressures of near collapse or failure of banks, including Johnson Matthey in the 1980s and the Bank of Credit and Commerce International (BCCI) and Barings in the 1990s, which forced it to move away from its old enforcement mode of regulation by persuasion (Norton 1991). So too has the Australian financial system.[13] Australia has strengthened its enforcement mode since permitting the entry of sixteen new banks in 1985. In 1991–1992, after a committee of inquiry was set up to examine regulatory failure of the model governing the Australian financial system, onsite examinations of banks were introduced,[14] and changes to prudential measures were made to ensure that actions are taken to provide for market risk, to record asset securitization and netting to reflect the true substance, and to ensure that insurance and funds management activities of banks were supervised, particularly where the bank exerts a controlling interest.

In 1997 the onsite examination system set up in 1992 was expanded to include other types of risk such as market risk. Prior to the introduction of onsite examinations to monitor credit risk from 1992, the Reserve Bank of Australia (RBA) supervised at arms length. The reform of the prudential measures constituting the Australian regulatory model, culminating in the formation of the Australian Prudential Regulatory Authority (APRA)[15] in 1998, was undertaken incrementally. It was a formal recognition of the fact that liberalization of protective and prudential measures during the previous decade had failed to produce desired efficiency gains and, in fact, had lowered systemic stability. The increase in Australia in the number of corporate failures, from 1,178 in 1975 to 10,361 in 1992 (Clarke, Dean, and Oliver 1997, 6) and the extent of bad and doubtful debts in Australian banking when they blew out to A$28 billion in the early 1990s, representing 10 percent of broad money, with the major Australian bank at that time, Westpac, unable to fill a $1.5 billion rights issue, provoked a redesign of the Australian regulatory model. Since 1992 all major state banks have disappeared into the control

of another entity due to the size of their nonperforming loans (Verrender 1997).

Despite strengthening the enforcement mode and compliance audit methods in the Australian prudential system, it was not until the Wallis Inquiry in 1997 (FSI, 1997) that proposals were put in place to liberalize all protective measures by removing safety net and liquidity support arrangements, liberalizing industry structure by permitting nonbanks direct access to the payments system, removing activity restrictions relating to shareholdings, mergers of banks, and banks and nonbanks and the level of foreign investment in the industry, allowing banks to take equity in borrowers so as to induce the provision of more symmetric information. Some of these proposals have been put into effect through the treasurer's delegated power. Others, such as the question of mergers of the major banks, still await market tests.

Whether the Australian regulatory model is superior to the Asian regulatory model in preventing abuses in bank management that can generate systemic crises can by analyzed by comparing the protective measures that did not promote efficiency, which were removed in Australia, and might have produced moral hazard if retained, to the restrictive protective measures that remained in place in most regulatory Asian models after liberalization.

Protective Measures

Earlier a distinction was made between regulatory measures that are primarily preventive, such as prudential supervisory arrangements which check on whether banks are acting prudently in order to ensure the stability of the financial system, and those that are protective. The goals of protective measures are safety in terms of depositor, investor, and consumer protection, as well as structural efficiency.

The separation between protective and prudential measures of regulation is not entirely mutually exclusive. They interrelate in several ways. First, the basic idea of protective regulation is the creation of confidence in the banking system, with subsequent beneficial effects on the probability of bank runs and system crises. At the same time, however, protective measures involve the danger of moral hazard and adverse effects on the riskiness of banks.

Prudential measures are designed to check the state of risk management, performance, and adherence to agency relationships. They also check the success of protective measures, and whether additional protective measures are needed or existing ones should be removed. In reverse, protective measures often call for supplementary prudential measures. That is, particular bundles or packages of prudential and protective regulations go together.

To understand any financial system's regulatory model, it is necessary to understand its second side, which involves protective measures that affect banks on an industry basis. These can be discretionary or institutionalized. Table 5.4 classifies these measures and highlights some principal differences and similarities of protective measures and prudential measures.

One similarity is that protective measures and the major prudential measures of sanctions and compliance audits are both firm and industry based; protective measures are aimed at the entire industry, but they can be applied on a discretionary and institutionalized basis. At times, some disclosure rules, such as reports to central banks, are used in a discretionary sense and hence become part of the compliance audit process, or at times a form of sanction. The main characteristic of a discretionary intervention is that it is not granted without some element of uncertainty, since some amount of private risk remains. This uncertainty creates obvious incentives for lenders to monitor the riskiness of the financial institutions to which they are lending. Nevertheless, over time, certain traditions and practices can evolve, and authorities can be more or less generous in determining the thresholds beyond which help is supplied. Important aspects here are the relation of these discretionary measures to formalized deposit insurance, on the one hand, and to routine discount window operations of the central bank, on the other hand. Another difficult question concerns coordination between different national authorities in terms of allocation of responsibilities between the parent and the host country in the case of foreign subsidiaries.

Institutionalized protective measures must be applied on an industry basis in order to ensure consistency, so as to promote regulatory goals of safety, stability, and structure. Institutional interventions include contractual relationships (Llewellyn "Banking" 1996), such as deposit insurance systems used in the United States and recently introduced in numerous other countries. Since, in this case, help is granted for sure, such institutionalized protective measures create confidence in the banking system but also are prone to create problems of moral hazard, as is well known from the U.S. experience of the collapse of the savings and loans subsector within the U.S. financial system (Adams 1990).

The specific form of institutionalized deposit insurance can vary in a number of ways, including fee structure (flat fee versus variable, risk-related fees), degree of coverage (full versus particular coverage with maximum limits), funding provisions (funded versus unfunded systems), public versus private schemes, and compulsory versus voluntary participation. These are related to the enforcement mode and are graded according to where they stand in terms of the strength of the enforcement pyramid.

Considering protective measures only, and reviewing all likely and

Table 5.4
A Taxonomy of Protective Regulatory Systems—Protective Measure Type

PROTECTIVE MEASURE TYPE (ALL INDUSTRY BASED)		
STRENGTH	**DISCRETIONARY**	**INSTITUTIONALISED**
Note that each type of protective measure has a range of weak to strong arrangements **WEAK**  **STRONG**	**Safety net schemes**, apart from deposit insurance schemes. Safety net schemes can include one or all of the following. If all are included the regulatory model or system is becoming increasingly stronger: implicit or explicit guarantees, special shareholder liability, regulatory intervention, both to ensure depositor protection and to prevent runs. --- **Liquidity support arrangements** comprising policies towards lender of last resort and towards the cheque clearing accounts that most banks hold at the central bank (known as Exchange Settlement Accounts).	**Disclosure regulations,** such as secrecy provisions regarding client details as well as rules relating to what information a bank must publicly disclose. There are two types of information demanded - reports to regulators, such as the central bank, a banking ombudsman, and reports to shareholders, which are lodged with a companies and securities regulators and also available to other stockholders, such as depositors and consumers. --- **Activity restrictions,** such as restrictions on permissible activities, restrictions on branching, restrictions on equity holdings, regulations creating market segmentation, interest rate caps and floors imposed on borrowing and lending, restrictions on interlocking directors, restrictions on banking conduct, through either a voluntary or legislated code of conduct which can escalate from no restrictions as in a **Universal Banking model** to a **Restricted Banking model.** --- **Institutionalised Deposit Insurance Schemes:** which can range from weak versions using private insurance, flat fees, partial coverage, unfunded, voluntary to the strong version which is a public scheme, charging risk related fees, offering full coverage, being fully funded and compulsory.

possible combinations of protective measures, one can derive a spectrum consisting of the following:

- Weak discretionary measures combined with weak institutional measures
- Strong discretionary measures only
- Strong discretionary combined with weak institutional measures
- Weak discretionary combined with strong institutional measures
- Strong discretionary combined with strong institutional measures.

The two halves of the regulatory model—the prudential measures and the protective set of measures—can be combined in order to classify regulatory models. The seven enforcement modes adapted from Grabosky and Braithwaite (1986) describe prudential supervisory measures. Together with the variety of strong and weak sanction and compliance audit types, which are an essential part of a prudential supervisory system, the seven enforcement modes can be combined with the five protective measures types to define an overall regulatory model governing the banking sector. This gives a matrix of $2 \times 2 \times 7 \times 5$, or 140 possible regulatory models.

Under this taxonomy, various financial systems with prudential supervisory systems characterized by weak enforcement modes and with weak sanction and compliance audit types, namely conciliators and benign big guns, can incorporate weak discretionary and institutionalized protective measures. An example of a weak-weak conciliatory regulatory model would be Hong Kong, which uses sanctions and compliance audit methods at the weak end of the spectrum, and weak discretionary and institutionalized protective measures. Australia prior to 1991–1992 was an example of a benign big gun enforcement model, which used weak sanctions and compliance audit methods, combined with weak discretionary and strong institutionalized protective measures. It could thus be classified as a weak-medium benign big gun enforcement model prior to the changes made in its regulatory model after 1992, which pushed it toward stronger use of sanctions and compliance audits.

At the other end of the spectrum of regulatory models are various financial systems that have prudential supervisory systems with strong enforcement modes combined with strong sanctions and compliance audit methods, such as detached modest enforcers and strong enforcers, who display a range of strong discretionary and institutional measures. There are numerous examples of this type of regulatory model. The U.S. financial system is an example of a system that uses the strongest prudential and protective measures, both discretionary and institutionalized, and can be called a strong-strong strong enforcer regulatory model. The Swiss, German, and UK financial systems are different from the U.S.

model; they combine a strong prudential supervisory system with strong discretionary but weak institutionalized protective measures. They could be called strong-medium strong enforcers.

Between the two ends of the spectrum are three enforcement modes that apply their prudential supervision in a weak or medium manner: the diagnostic inspectorates, the token enforcers, and the detached token enforcers. Japan is an example of a weak-medium diagnostic inspectorate: weak strength sanctions, compliance audit techniques, and a mix of strong and weak discretionary and institutionalized protective measures.

Use of this classification system produces the major types of regulatory models that occur most frequently. Each major type of regulatory model has been given the nomenclature of the predominant enforcement mode connected with the prudential supervisory system, as this best describes the whole approach of the regulatory model. The taxonomy was developed to identify key regulatory models governing financial systems and classify those of major trading nations to highlight the way in which the Australian and Asian regulatory models differ from other possible regulatory models. The purpose is to be able to predict performance from the type of regulatory model given theories of bank behavior and regulation because it is the opinion of international regulators (Bank for International Settlements 1992, 1993, 1994; OECD *Systemic Risks* 1991) that performance of the financial system in terms of achieving the goals of policy makers is linked to the type of regulatory model. The next section attempts to classify Asian regulatory models in order to explain the differing performance evident across various financial systems in Asia.

A COMPARATIVE ANALYSIS OF REGULATORY MODELS GOVERNING THE AUSTRALIAN AND THE ASIAN FINANCIAL SYSTEMS

Singapore

Standing out as a nation most comparable to Australia after 1992 is Singapore. Singapore, however, has excelled in its enforcement track record of no bank failures, scandals, or systemic crises until 1995 when Britain's 233-year-old Baring Investment Bank collapsed due to trading in open-ended derivatives entered into through Baring's Singapore office. Even with the Asian crisis producing bad loans on an average of between 10 and 20 percent of total bank loans in 1997, Singapore had scores of less than 4 percent.[16]

The Barings crisis in 1995 produced a change in compliance audits of foreign-owned subsidiaries, with both the host and parent country of the bank being equally responsible for audits and sanctions, but with the

parent country bank realizing that it must never place reliance on "what it was told by the . . . auditors and reporting accountants on the existence of a connected lending limit . . . and on the supervision performed by the relevant overseas regulators" (Bank of England 1997, par. 13.58).

The principal reason for Singapore's superior performance can be found in Singapore's adoption of a strong enforcement mode approach to prudential supervision involving onsite inspections rating it as having strong compliance audit techniques and utilizing strong sanctions involving heavy penalties. Such a regulatory model helped avoid the bad lending practices of the rest of the Asian financial systems, such as not applying objective credit standards, borrowing in overseas currencies to buy local-currency assets, and lending beyond an industry's capacity to service, such as to the property and hotel sector. Such lending was often politically directed, and it resulted in unsupportable levels of foreign currency debt. In Thailand's case, levels of debt of less than two-year maturities equal to 120 percent of reserves were incurred; in Korea and Indonesia, foreign currency debt was two times the reserves in 1996.[17]

Singapore has also developed stronger prudential rules than any other Asian country. For instance, the Monetary Authority of Singapore (MAS) announced in June 1991 that local banks would be required to maintain minimum capital adequacy rates of 12 percent, as opposed to the minimum 8 percent set by the Bank for International Settlements (BIS). Banks failing to meet the new minimum capital adequacy standard were required to comply with restrictions of their operations. In order to encourage banks to build up adequate reserves, the government announced in March 1991 that a tax deduction would be allowed on general provisions made by banks and merchant banks of up to 2 percent of total bank loans and investments.[18] Despite its track record of being sensitive to public opinion,[19] there is not the same level of public disclosure of financial statements of banks as in the United States or transparency, leading to doubts as to the level of public accountability and corporate governance as checks on the quality of the enforcement mode. Also some protective measures appear to be still strong with respect to the activities of banks. Foreign ownership rules, for example, remained throughout the 1990s: in 1991–1992, these prescribed levels of no more than 40 percent of banks, 70 percent of brokers, and 49 percent in joint ventures with a 10 percent concessionary tax rate on the income of approved trust companies from the provision of trust services to nonresidents. These measures do not appear to have discouraged dynamic efficiency in terms of innovations, such as scriptless trading and a Dutch auction system for public share issues designed to popularize Singapore as a financial center, together with the introduction of a nationwide computer network for the financial sector.

Thailand

At the other end of the spectrum is Thailand with a weak regulatory enforcement system, as evidenced by weak compliance audits and sanctions, and a very restricted banking system, evidenced by strong protective measures. From 1991 the Thai financial system has undergone changes directing it to a more market-orientated, modern financial system, which would conceivably position Thailand as a regional financial center by the mid-1990s (Norton 1991). A slow liberalization of activity restrictions relating to protective measures commenced—a process of dismantling foreign exchange controls and interest rate restrictions on lending and deposits. Banks were to be allowed to underwrite and sell securities, and nonbanks to engage in foreign exchange trading.

All banks had to meet prudential regulations; however, the weak enforcement mode, combined with weak compliance audits relying on offsite examination of bank relied data, meant that as protective measures were loosened, prudential supervisory measures were not tightened. Despite this, Thai government officials were studying the pros and cons of creating a U.S.–styled deposit insurance scheme to protect small depositors, which had the potential to compound the moral hazard associated with the existing regulatory model.

An example of the application of weak sanctions was the response of Thailand's central bank, the Bank of Thailand (BOT), to the discovery in 1997 that the Bangkok Bank of Commerce (BBC) had 47.2 percent of its assets as low-quality, substandard loans, and the president had borrowed 62.3 percent of these for his own personal use (Bangkok Bank of Commerce 1997, 1998). Instead of ordering the BBC to reduce its capital to write off part of the losses, the BOT, through a government development fund, pumped 100 billion baht into the BBC to bolster its financial standing. This decision was in part responsible for triggering a systemic crisis in Thailand's national economy. By August 1997 other defaults, such as the Somprasong Land Development Bank on an $80 million Eurobond issue, left commercial banks with $15.5 billion in nonperforming loans (Sivasomeboon 1997; Gibson 1997).

"Sloppy banking practices," which were avoided by Singapore, in Thailand fueled excessive lending into certain high-growth industries, such as petrochemicals, semiconductors, and automobiles. The net result was that in the two years preceding the devaluation on July 2, 1997, which triggered the Asian crisis, Thailand's savings supported only 6.7 percent growth, not the 8.2 percent which it grew on average.[20] By October 1997, out of ninety-one finance companies, fifty-eight were suspended, after a government rescue fund had poured 9 percent of the 1996 gross domestic product (GDP) into keeping them afloat.[21]

Hong Kong

Hong Kong is closer to the regulatory model of the Thai financial system than Singapore. Prior to its return to the Republic of China, it suffered contagion in its banking system with bank and securities scandals with BCCI and Peregrine Investments,[22] which can be attributed to the weakness of its enforcement mode, compliance audits, and sanctions. Although there was no formal central bank that controlled monetary policy and protected the system prior to its handover to China, the office of the commissioner of banking was established (succeeded by the Hong Kong Monetary Authority) and prudential rules were introduced, ensuring high capital adequacy—on average equivalent to nearly 18 percent of their risk-weighted assets.

The system relies on the external auditor and the financial institution itself to report relevant information according to guidelines laid down by the Hong Kong Monetary Authority (HKMA), the banking industry, and the accounting profession, who appear to be far too dominant. The HKMA's office is equivalent to the separate supervisory arms in the German, Canadian, and Swiss financial systems, but it does not have the same strength in its enforcement mode, although some amendments have strengthened it recently. For instance, the Banking Amendment (No. 2) Bill 1991 empowered the commissioner to object to certain persons becoming controllers of financial institutions incorporated in Hong Kong, and it also placed limits on loans by, and interests of, financial institutions, particularly advances to directors.

Japan

Japan began to deregulate its financial system in 1991,[23] a process that culminated in its entry and merger with foreign institutions and banks and nonbanks. Although appearing to have developed a strong prudential system, during 1997 and 1998, it emerged that such measures were not as strong as the framework would indicate—the full apparatus of onsite examinations had been aborted by cronyism and corruption. Lenders with at least US$136 billion in bad loans still on the books from the nation's early 1990s bust had recorded over US$600 billion in bad and doubtful debts by June 1998.[24]

The financial commitment to the strength of its enforcement system through strong compliance audits was minimal. Prior to the Asian crisis in the United States, the total number of financial inspectors for the Federal Deposit Insurance Corporation (FDIC), the Federal Reserve Banks (FRB), and the Office of the Comptroller of the Currency (OCC) was roughly 6,000. The Ministry of Finance (MOF) and the Bank of Japan

(BOJ) have about 650 financial inspectors. Although comparisons are difficult because of the different structures and number of banks, we can see the difference in terms of financial assets—one Japanese inspector per $16.8 billion in assets, compared to $0.6 billion per U.S. inspector. The Japanese prudential supervisory process is fraught with non–arms-length relationships between private banks and the MOF and the BOJ, whereby through bribes or lavish entertaining, private banks have traditionally endeavored to obtain information about inspection timetables and criteria (Ito and Szamosszegi 1998, 46).

Failure to adhere to capital adequacy requirements imposed on other financial systems by the BIS in 1989 may have been a result of a flawed set of compliance audit and sanction measures. While cronyism has led to a weak enforcement mode in Japan—"banks, large corporations and governments operate in the same close relationship year after year"[25]—strong discretionary and institutional protective measures led to directed lending, as a result of the political system followed, called command-and-control capitalism.[26]

As a result, Japan has formulated changes to its regulatory model, following the German, UK, and now Australian model of increasing the strength and importance of prudential supervision by having a separate agency. The newly formed Financial Supervisory Agency (FSA) has been charged with the task of investigating the creditworthiness of the country's banking sector.[27] However, the enforcement mode is still at the weak end inasmuch as it permits the disclosure of nonperforming loans, on the basis of self-examination, to be announced by each bank. This practice has been criticized by the chairman of the Japan Federation of Economic Organizations (Keidanren), Takashi Imai, "[T]he BOJ and FSA should re-examine them thoroughly by using common standards and determine whether they really are unrecoverable. . . . After doing that, the financial authorities can order banks to improve their financial condition if necessary . . . and the results of the examinations should be disclosed."[28]

Given this framework, where do China, Taiwan, Malaysia, Indonesia, and Korea fit in? Very little is known about the regulatory model governing the Chinese financial system except that, prior to the Asian crisis, it appears to have had a weak enforcement mode, consisting of weak compliance audits and sanctions, combined with some strong protective measures. Although there were no depositor protection or insurance schemes, directed lending and the extent of government ownership of the banking system introduced moral hazard. The structure of the Chinese regulatory model ensured neither goals of systemic stability nor allocative, dynamic, and operational efficiency: "The country needs a modern banking system, not the profligate method of state-directed credit it has now. . . . The boondoggles and corruption were astounding.

Zhu finally started cutting off the flow of cheap bank loans to pet projects."[29]

Other criticisms of China's regulatory model echo the failure to lend on the basis of credit analysis, rather than political directives; no comprehensive monitoring of bad and doubtful debts by the central regulator, with the lack of a resulting bad loan management plan; the complete lack of formal or informal bankruptcy procedures, which provides no legal framework for banks to seize corporate assets and sell them off to outside investors; and the lack of any monitoring system to check on the quality of the assets of state banks: "[B]ecause there is no insurance program to protect depositors, shutting down bad banks is difficult."[30]

One reform made in 1998 was the scrapping of bank lending quotas, a reform effected in Australia in the early 1980s. This is regarded as the removal of one of the pillars of Stalinist central planning, an important measure in accelerating financial reforms, and an attempt to control financial risk.[31] In the past, China has set an annual lending quota for its four main state-owned commercial banks—the Agricultural Bank, the China Construction Bank, the Bank of China, and the Industrial and Commercial Bank—in order to allocate credit through bureaucratic methods to state industry, permitting control of total credit and money supply, and resulting in a failure to assess profitability and a borrower's ability to repay loans.

Another reform has been the reorganization of the central bank (the PBOC), which has undergone radical change in the 1998 financial year. The PBOC has reorganized their departments into five new departments. Department One supervises the top seven banks—the four state banks and the three policy banks, which represent between 60 and 70 percent of all financial assets. Department One also supervises the 170 foreign banks, using methods of onsite and offsite examination techniques. The other four departments into which the PBOC has now been organized deal with other commercial banks, nonbank financial institutions, rural banks, and SAFE institutions (State Authorities dealing with Foreign Exchange). Apart from reorganization into five departments, the PBOC is now divided into nine regional banks, with 2,000 subbranches to stop local government interference in the supervisory and regulatory function.

Taiwan

Taiwan, by its track record, appears to have a regulatory model with a predominantly weak enforcement model as evidenced by "a bombed out property market and inefficient provincial-owned banks, which control 40% of all lending (which) are holding the economy back. Lenders

have made few provisions against bad debt writeoffs."[32] The central bank in Taiwan is the original Central Bank of China established on February 21, 1928, but relocated to Taipei in December 1949. Its operations are similar to any central bank—regulating financial conditions, implementing foreign exchange regulation and operations, examining financial institutions, issuing currency, providing check clearing and check credit information services, performing fiscal-agency functions, and representing the government in taking part in international financial cooperation.

Malaysia

Malaysia appears to operate under a stronger enforcement model than Thailand and Hong Kong in terms of sanctions.[33] The central bank, Bank Negro, applies a CAMEL formula of capital adequacy, asset quality, management efficiency, earnings performance, and liquidity position in assessing bank management. By December 1997, the central bank, concerned about the level of nonperforming loans rising from 5.9 percent to 15 percent of total lending, liberalized discretionary protective measures related to mergers of the major commercial banks but later, in 1998, imposed exchange controls to stem the effect of the devaluation of the currency on Malaysian banks and on share prices, which by February 1998 registered a 50 percent fall from their previous high levels.[34] Reforms to date have been made to strengthen discretionary protective measures, such as restricting bank credits and stock-market fund raisings, while perhaps weakening institutional protective measures, such as safety net schemes.[35] Compared to Thailand, the twenty-one domestically owned Malaysian banks are not swamped by bad debts; their foreign debt is less than half Thailand's US$90 billion.[36] However, other commentators see Malaysia as being similar to Indonesia with shaky banks, insolvent finance companies, and a corporate sector parched for credit, the net result of a weak enforcement mode and failure to conduct compliance audits and apply sanctions. "On the books, Malaysia has strong financial regulations, but they tend to get bent or ignored when important people are involved, especially in such shaky times."[37]

Indonesia

It has been claimed above that Indonesia has a similar regulatory model to Thailand—its enforcement mode, consisting of a conciliatory mode to compliance audits and sanctions and weak protective measures, has allowed the proliferation of family-owned banks and connections with business to influence bank-lending policy.[38] The failure of the central bank as a prudential supervisor is evidenced by the fire in the top

story that destroyed books and records, by the bank runs on Indonesia's sixteen liquidated banks, and by the prediction that the nonperforming loans in the bank sector will rise by 2000 to 70 percent of all loans, two-thirds of which may ultimately be unrecoverable.[39] This prediction has resulted in a proposed rescue package of $50 billion, rivaling Mexico's 1995 bailout.[40]

Korea

Korea, in its regulatory model, resembles closely the Indonesian and Thai models. Despite attempting to deregulate protective measures, privatize banks, internationalize financial markets, deregulate financial prices, and develop equity markets as alternatives, state interference has persisted in directing bank lending, and prudential measures have remained far too weak and conciliatory. An example is the requirement in the 1970s and 1980s for banks to offer low-interest policy loans to favored companies undertaking heavy industrial projects.[41] This created an impressive constellation of mammoth industrial firms, the *chaebol*, a group of oligopolies which, in turn, provided political support for the ruling party, which was their best form of insurance against default as the state was always behind them, and they could remain in a form of "permanent receivership."[42]

An example of the weak prudential measures is the use by the Korean central bank of a narrow definition for nonperforming loans, which excludes many substandard loans. The net result of the highly leveraged and privileged *chaebols*, with thirteen facing liquidation, combined with lack of prudential supervision, has been a deepening recession and burgeoning corporate bankruptcies with resulting solvency problems for Korea's fragile financial institutions. Nonperforming loans may peak at nearly 25 percent of total loans by 2000, with less than half the commercial banks meeting the international capital adequacy ratio of 8 percent.[43]

The Philippines

The Philippine financial system is said to be in better shape than Thailand's because it has quickly recognized the need to promote bankruptcy-protection filings, and has had less time to overheat, suffering recession while other Asian tiger economies were growing rapidly.[44] Early in the 1990s, protective measures were liberalized with the entry of foreign banks, the encouragement of small, new private banks to compete with big, state-owned behemoths. However, as loans grew by a remarkable 52 percent in 1996, credit standards fell, while there was

a fixed-rate regime, and property prices accelerated. Prudential oversight suffered particularly from the common Asian flaw of "allowing family-owned banks run by people who are also in other business."[45]

Table 5.5 briefly summarizes the taxonomy expounded in this chapter as applied to Asian-Australian financial systems. The purpose of such a classification is to enable assessment of the effectiveness and efficiency of a regulatory model in terms of goal achievement, judged by its ability to adapt to a constantly changing environment, while maintaining the stability, safety, and structure of the banking sector. A strong enforcement mode can go hand in hand with a degree of latitude in protective measures. Such a system is attempting to promote efficiency while relying on a very thorough, strongly policed set of prudential rules as to how those activities are conducted, and within what limits. A strong enforcement mode tends to accompany an emphasis on the role of several auditors and in-depth onsite examinations, as well as the use of offsite monitoring systems. All of the countries discussed in Table 5.5 had weak or modest enforcement modes, with weak prudential measures of compliance audits and sanctions. The resultant crises in their economies (Australia suffered far earlier in 1989 and therefore was more resistant to the Asian crisis through subsequent reforms) is therefore no surprise.

IMPLICATIONS OF REGULATORY FAILURE IN THE AUSTRALASIAN REGION FOR THE OPTIMUM REGULATORY MODEL FOR THE NEXT MILLENNIUM

Since most regulations are aimed at constraining and directing bank behavior, the effectiveness of a regulatory model can be assessed by measuring the effects of bank behavior. Options in conducting such measurement include attempting to correlate changes in bank behavior, induced by changes in regulatory models, with changes in macroeconomic variables such as credit, interest rates, money supply, savings, and investment (OECD Working Papers 81, 94, 95, 96, 98). This approach is rejected because of the difficulties encountered in establishing a causal relationship, owing to the existence of intervening variables and other exogenous factors.

Another alternative is to consider the efficiency effects[46] resulting from the effects of regulatory change on the structure of the industry, either by creating greater competition, such as more products at lower prices, or economics of scope and scale, which can have the same effect. When aspects of distributional efficiency or inequality may be a trade-off against other regulatory goals of safety, stability, and confidence (Sinkey 1992), a qualitative judgment in assessing industry and efficiency effects is difficult. Distributional efficiency is only one aspect of efficiency, and

Table 5.5
Regulatory Models

	Enforcement Mode	**Range of Activities** **- insurance** **- securities** **- real estate**	**Branching**
AUSTRALIA Overall Model Type: Benign Big Gun Model, prior to 1997, now moving towards a stronger enforcement model, with liberalised protective measures	**Benign Big Gun** - enforces prudential rules largely by collection of data, suasion and raised eyebrows. This mode is moving up the scale to possibly a detached token enforcement model with changes to compliance audit methods culminating in a new prudential regulatory model as proposed by the Wallis Inquiry (1997).	Can deal in securities and insurance through a subsidiary not to be guaranteed, by the bank parent. Real estate involvement is limited by prudential guidelines.	Encouraged and unrestricted, although moves to de-branch in 1997 to effect greater operational efficiency is not being opposed.
Equity Holdings & Interlocking Directors in Non Financial Firms	**Segmentation and Concentration**	**Interest Rates**	**Bankruptcy**
Permitted equity holdings but limited by prudential guidelines; 10% limit for banks shareholders. Note that the Wallis Inquiry in 1997 has liberalised this.	Licences limited - high degree of concentration, actively being encouraged by the Wallis Inquiry through liberalisation of restrictions on mergers, provided certain operational efficiency criteria are met.	Unrestricted except for one type of loan (historical)	Formal, with minor relaxations, but with no attempt to move to a system that gives the customer time to trade out of difficulties.
HONG KONG Conciliatory Model, but with weak protective measures.	**Conciliatory** Changes are being made to prudential rules; the Commissioner of Banking requires auditors to report to him; there is the power to veto shareholders, monitor exposures.	Permitted subject to applicable restrictions in Banking Ordinances.	Branches outside Hong Kong exempted from Banking Ordinances.
Equity Holdings & Interlocking Directors in Non Financial Firms	**Segmentation and Concentration**	**Interest Rates**	**Bankruptcy**

Table 5.5 (*continued*)

Permitted subject to disclosure requirements.	Competitive but dominated by two groups.	Unrestricted	Formal
JAPAN Conciliatory prior to the Asian Crisis now approaching a Diagnostic Inspectorate Model with liberalisation occurring in its protective measures (although prior to 1997 the regulatory model gave the appearance of being a Strong Enforcement Model).	**Conciliatory** appears to conduct on site inspections - however the Keiretsu model makes abuses hard to determine. Lack of transparency, accountability, corporate governance and adequate. disclosure characterise the system.	1st April, 1998 marked the first day of relaxation of protective measures towards the undertaking of these activities by banks.	Rules liberalised from 1991 onwards.
Equity Holdings & Interlocking Directors in Non Financial Firms	**Segmentation and Concentration**	**Interest Rates**	**Bankruptcy**
Being liberalised, but the Keiretsu system effectively allowed and promoted organisations acting in concert even with mutual shareholdings of 1%.	Liberalised as at 1st April, 1998.	Moved to deregulate rules relating to small time deposits in 1992. Now moving to free up the huge percentage of term deposits frozen in Post Offices due to tax advantages	Informal
SINGAPORE Detached Modest Enforcement with liberalisation occurring in its protective measures (more like UK. system)	**Detached Modest Enforcement Model** - conducts on site visits, closely regulated - no bank failure to date (apart from Barings) with over 135 banks operating. Capital adequacy rules are the highest in world (12%). However no public accountability mechanisms exist equivalent to world best practice through public disclosure and corporate governance.	Unlimited through subsidiaries with regulatory approval but real estate limited was limited to 40% for most of this decade.	Permitted

Table 5.5 (*continued*)

Equity Holdings & Interlocking Directors in Non Financial Firms	**Segmentation and Concentration**	**Interest Rates**	**Bankruptcy**
Banks in firms limited to 40% of bank's capital - firm in banks requires approval if over 5% - regulations applying for most of the nineties.	Competitive - foreign ownership limited to 40%	Unrestricted	Formal
THAILAND Conciliatory Model, with strong protective measures. **CHINA, TAIWAN, MALAYSIA, INDONESIA, KOREA, and the PHILIPPINES** display similar characteristics of very weak conciliatory prudential measures, but strong protective measures, particularly in the area of directed lending by governments.	Conciliatory - Compliance with prudential rules is only checked through the collection of statistical returns. The predominant regulatory model in S-E Asia of weak-weak prudential and protective measures appears to be the worst possible regulatory model to promote systemic stability and efficiency.	Unlimited through subsidiaries: liberalisation of protective measures relating to the concurrent undertaking of real estate activities.	Permitted
Equity Holdings & Interlocking Directors in Non Financial Firms	**Segmentation and Concentration**	**Interest Rates**	**Bankruptcy**
The model permits a bank to hold up to 10% of equity in a commercial entity while the latter can hold up to 5% in bank.	Foreign ownership is limited to a maximum of 25%. All banks are listed.	Together with foreign exchange controls, these are being liberalised.	Formal

Note: Due to the rapid evolution of these systems, some of the protective measures may have been removed and some of the prudential measures may have been tightened since the writing of this chapter.

Source: Norton (1991), updated via the Internet as listed in the Bibliography.

it limits the total cost-benefit analysis of regulatory change. Innovations may not produce changes in factor productivity but may create user benefits.

Another way of assessing the effects of regulatory change on the financial system is by making studies of user satisfaction and changes in the consumer behavior of those utilizing banking services. This is one way to measure allocative, operational, and dynamic efficiency. This approach is also rejected, however, as being subject to the same limits as studies involving the effects on industry structure and those using only subjective assessment methods.

The preferred option is to use measures that reflect changes in the risk minimization and return maximization behavior of banking, as well as changes in financing and investing patterns, and changes reflecting agency relationships. The rationale is that the design of all regulatory models contains both prudential and protective measures that ultimately aim to delimit banks' risk-taking behavior, as well as influence investing financing and agency behavior. At the same time, these regulatory models are seeking to ensure that banks maintain their viability through the earning of adequate returns. These prudential and protective measures are aimed at constraining bank behavior to achieve the principal goals of stability, structure, and safety that governments have with respect to financial system. One study used microeconomic measures of bank performance to assess the effectiveness of the changes in the regulatory model governing the Australian financial system during the period from 1973 to 1993, selecting a turning point representing the liberalization of protective measures, such as barriers to entry, interest rate, exchange controls, and credit directives (Currie 1997, 1998). Ratios were tested for significant differences before and after the turning point.

This study lends support to the assumptions underlying International Monetary Fund (IMF) proposals for reform of Asian economies—that the regulatory model of weak prudential and a mixture of strength in protective measures is not the optimal. This is shown by the IMF's concentration on increasing the strength of the surveillance of countries and greater transparency[47]—financial sector reform including improved prudential regulation and supervision, with more effective structures for orderly workouts, including better bankruptcy laws at the national level. Sanctions include widespread publicity of those who fail to make the grade, with "countries conditioning access to their markets by foreign banks on a strong home-country supervisory regime" (Hartcher 1998, 10).[48]

Financial systems are to be strengthened through the establishment of global standards along the lines of the Core Principles for Effective Banking Supervision already established by the Basle Committee, which concentrate on strengthening national bankruptcy laws, accountancy

standards, disclosure, loan classification, and overall corporate governance. Moral hazard is to be avoided by keeping protection of creditors to a minimum, but new measures should be introduced to formalize alternative arrangements in the event of a financial crisis.

Policies suggested by the IMF have been criticized for a number of reasons, principally their reliance on higher interest rates, which could attract rather than slow down capital inflows, such as spending cuts for countries which have typically run balanced budgets or surpluses, and the effect on public confidence of excessive haste in bank sector reform involving bank closures.[49] Other fears center on the cascade effect on the high debt model of most Asian firms, where a debt/equity ratio of 4:1 can be typical. Use of high interest rates to correct capital flows could double domestic interest costs to a typical Asian firm and increase foreign debt obligations from devaluation of the local currency. If the return on assets also falls, because of an austerity program, firms can erode equity, capitalize losses, and hence compound problems with the company's debt/equity ratio and hence the country's refinancing difficulties (Wade and Veneroso 1998, 14).

Other criticisms relate to the failure to learn from Latin America's banking crisis of 1994–1995 which had many common features of "economies leveraged to the hilt with short-term, foreign debt; meddlesome politicians; currency devaluations; flighty foreign portfolio investors; imprudent and inexperienced banks; and, to cap it all, regional contagion."[50] The Latin American solution focused on improving the regulatory model governing the financial system—opening banking to foreign ownership,[51] encouraging consolidation rather then closures of banks, strengthening prudential measures and the enforcement mode,[52] improving accounting standards and disclosure, and cutting links between bankers and politics, putting banks in the hands of professionals and enforcing anticorruption laws more rigorously.

All these concerns can be summarized in the effect on confidence. According to J. Stiglitz, the macroeconomic fundamentals of the East Asian countries are still very strong with low inflation, high savings, and an impressive skill base, but "confidence has been adversely affected by concerns about the health of the financial system, and about the substance and perceptions of transparency and governance" (1997, 2).

At the heart of this whole debate is the question of whether there is an optimum in the design of a regulatory model governing a financial system, and an optimum in designing the appropriate response to the evolution of the financial system, whether reregulation or further deregulation. It is possible that one explanation of the failure of regulatory change is evidenced in a study of the Australian financial system (Currie, 1997, 1998). This explanation is that the use of weak enforcement central banks in Asia in conducting prudential supervision, combined with the

use of strong protective measures that were inefficient, can largely explain the collapse of the economies that were running domestic and external surpluses. Weak protective measures relating to activity restrictions give financial institutions the leeway to arrange the industry in a way that is more structurally efficient, and therefore is more likely to promote operational, allocative, and dynamic efficiency. As protective measures are loosened, a strong enforcement mode will either prevent a systemic crisis from developing, or help a financial system withstand one.

This view would support the trend in the United Kingdom and Australia to hive away prudential supervision to a single-purpose regulator for the entire financial system. Such a single-purpose regulator can ensure

> that the bank's management and staff adequately understand each activity which the bank conducts and have a proper appreciation of the associated risks and are competent at managing those risks; (and) whether the supervisory authorities are confident that the structure of the bank, and the activities which it undertakes or proposes to undertake, can be supervised effectively. (Latter 1997, 32)

These two aspects of prudential supervision are perceived to be the main essentials for managing banking crises.

This conclusion also suggests a new plan for supervision and monitoring on a regional basis for the IMF and the World Bank to follow—having a rating scale based on an objectively derived taxonomy of regulatory models as expounded in this chapter, with a preconceived optimum which could remove claims of political interference in dictating a regulatory model. A taxonomy of regulatory models provides tests that enhance current methods of country risk assessment, gives an early warning signal of impending financial crises, and offers transparency in loan rationing.

In order to assess country risk fully for loan rationing purposes, it is necessary to understand the exact components of regulatory models, specify which components have been altered, and be able to measure the effectiveness of that change. As pointed out, no well-defined system exists for classifying regulatory models governing financial systems, yet testing the effectiveness of regulatory models is essential in an international financial system where such diversity exists. The effects of the collapse of one national system can create a regional or international crisis.

The conclusions of the IMF and the BIS regarding supervisory lessons to be drawn from the Asian crisis[53] contain no concrete proposals for improving the methods of assessing regulatory models, improving coun-

try risk assessment, providing early warning signals of impending crises, and rating progress toward improving regulatory models.

The BIS, referring to shortcomings both in the performance of the rating agencies in the Asian crisis ("which may be especially relevant if the regulatory use of ratings is to be increased in the future")[54] and in the country risk-management practices of G-10 banks, highlighted in two separate international reports,[55] recommends some significant changes to be made:

1. "that the concept and measurement of country risk has changed, going beyond the traditional concept of sovereign and transfer risk to include the risks posed by private sector counterparties"[56]
2. "that the interrelationship between different types of risk during times of crisis needs to be measured . . . with the need to place greater emphasis on stress testing and scenario analysis"[57]
3. that the rating agencies need to refine their methodologies in light of the crisis.[58]

In discussing the required changes they have recommended that rating agencies' assignment of country risk and sovereign risk scores be used by all banks in determining risk weights. At the same time, they have recommended that "criteria used to assign country risk weights . . . be expanded to include the quality of home country banking supervision and the extent to which macroeconomic and financial data are publicly available."[59] The need for a robust and transparent rating methodology, the need to reconcile differences across rating agencies, and the need for banks to elaborate the basis for their internal limits on exposures to bank counterparties all point to a commercial use and potential customer base for the taxonomy of the regulatory models discussed above, as well as the associated method of empirically testing the effectiveness of these models as summarized below.

This customer base would include the following:

- The rating agencies, such as Fitch/IBCA, Moody's, and Standards and Poor
- G-10 creditor banks and their supervisors, and other banks and supervisory agencies involved in lending to emerging nations in compliance with Core Principles of Bank Supervision recommended by the BIS may be tied to preferential risk weightings by banks. In addition G-10 countries will be encouraged by the BIS only to authorize foreign bank operations on compliance with Core Principles.
- Supranational agencies, such as the IMF, the Asian Development Bank, and the World Bank, which have to make loan-rationing decisions as to which nations to lend to in a financial crisis.

The Usefulness of a Taxonomy of Regulatory Models Governing Financial Systems

The taxonomy of the regulatory models described above included four essential elements, each of which can be refined into a rating system producing an overall score:

- The predominant enforcement mode (seven types) constituting the prudential supervisory system
- The types of sanctions (which can escalate from weak to strong along a firm-based continuum of from one to eight and an industry-based continuum of from one to nine)
- The types of compliance audits (which can similarly escalate from weak to strong along a seven-point firm continuum and a five-point industry continuum)
- The type of protective measures applied in a discretionary manner at a weak or strong level (safety net schemes and/or liquidity support arrangements) combined with protective institutionalized measures (relating to disclosure, activity, and deposit insurance, which can also be applied in a strong or weak manner).

The above possible combinations yield 140 possible regulatory models, so that a stage of regulatory model score can be deduced by a descriptive checklist approach, with classification at the strongest end of prudential measures and the weakest end of protective measures producing a maximum score for goals of stability, safety, and efficiency. These models can then be tested using microeconomic indicators of bank performance to produce another total score described below. The purpose is to be able to assess current performance from the type of regulatory model because performance of the financial system affects country risk.

Having classified each regulatory model descriptively according to the strength of the components of the model and having allocated a subjective score, a performance ranking can then be given to produce an overall score, using measures that reflect changes in the risk-minimization and return-maximization behavior of banking, as well as changes in financing and investing patterns, and those reflecting agency relationships. Regulators use this method in their own assessment of the achievement of regulatory goals using a surveillance system that relies on microeconomic variables.[60] Ratio analysis of a bank's financial statements constitutes an early warning system for any central bank of the immediate impact of a major change in the financial system, whether regulatory or innovative,[61] and it is specifically spelled out in a public document produced by the new prudential supervisory arm of the Bank of England, the Financial Services Authority.[62] This is done because, in the literature

on financial economics, the numerous studies that model the financial condition of banks show a relatively consistent set of microeconomic variables to be related to bank financial conditions; hence aggregating these measures across the financial system is indicative of its overall performance.[63]

Using such a method of assessing the performance of the financial system's regulatory model by aggregating the financial ratios of banks as a whole and testing them for significant differences before and after regulatory changes, using both parametric and nonparametric tests, is a way of transparently and robustly testing the performance of regulatory models and hence improving methods of country risk and sovereign risk rating. Measures can also be tested in aggregate when comparing bank performance across different systems using reasonably long-time periods of at least five years. This can be used by banks in internal risk-assessment procedures to allocate exposure limits in correspondent banking. Tests can be made comparing the performance of all banks, the major banks in a financial system, or the performance of one bank. In conjunction with a descriptive analysis of the regulatory model used in a financial system, this permits an empirical analysis that provides a basis for assessing compliance with the BIS Core Principles of Banking Supervision.

Current methods of country and sovereign risk ratings used by the agencies referred to above, and the methods of banks and their supervisors in allocating exposure limits both to banks and to countries, as well as the methods of loan rationing by supranational agencies, rely on descriptive analyses of sociopolitical systems and macroeconomic indicators. The focus on microeconomic indicators espoused here is currently in use in an abbreviated form for assessment of bank risk, but is not related to theories of regulation and bank behavior. Also no statistical testing for significant differences in performance measures before and after certain events or between banks is conducted. The specific advantage of the method proposed herein is that it provides a rigorous, theoretical and empirical basis for allocating country and sovereign risk ratings for assessing the risks of correspondent banking and for returning loan rationing for aid purposes.

This method would require endorsement by the BIS for the use of the taxonomy of regulatory models and the associated method of performance testing made by rating agencies in assigning country and sovereign risk assessment, and by G-10 banks and their supervisors in allocating exposures in correspondent banking and authorizing foreign bank operations. It would also necessitate endorsement by the IMF for use of the method of checking progress toward a regulatory optimum in allocating loan funds during a financial crisis. Another precondition would be the improvement of disclosure and transparency both by bank

supervisors and by banks in all financial systems to permit the calculation of the necessary microeconomic indicators. Although major central banks, when assessing credit risk, can inspect credit-management systems directly and access information regarding nonperforming debts, an external assessment of the type proposed in this chapter must rely by necessity on external data. Hence international cooperation by bank supervisory agencies in all countries to make data available both on the regulatory model and the banks themselves, for use by rating agencies, by other supervisors, and by other banks, is necessary to achieve marketability of the product.

Confidence in the method could be demonstrated by prototyping it. The best way to do this is to classify all regulatory models in Asia prior to the crisis, assess them as of 1 January 2000 by using the taxonomy to produce a descriptive score, then collect data of banks within each economy for several financial years before and after some cutoff date connected with the crisis, such as 1 June 1997, and empirically test the performance of banking sectors within these economies. They can be compared internally before and after 1 June 1997 and in aggregate between financial systems using microeconomic indicators of risk and return, as well as ratios indicative of agency relationships, investing and financing patterns, and efficiency ratios. An empirical performance score can then be produced for each financial system as it makes changes to its regulatory model.

Obviously there are certain inherent limits in such a method. The accuracy of the descriptive analysis associated with classifying the regulatory model governing a financial system will depend on the subjective skills of the analyst, although the taxonomy provides more rigor in isolating all components of the model. It will also depend on the analyst's ability to see through the form of the institutional framework to isolate its substance.

The subjectivity of the descriptive component of this product can be alleviated to some extent by the empirical component. As with all studies using financial statement data, however, measurement problems will exist, including missing data and inconsistencies between the banks' disclosure and changes in accounting methods, which can be partially compensated for by reconstructing accounts and at times interpolating figures. Other problems, such as lack of available data, mean that assumptions must be made, particularly in the case of interest rate and liquidity risk assessment. Another problem is that ratios are one method of assessing bank performance and regulatory goal achievement, but they constitute a method that relates the two. Regulatory goals of stability, safety, and efficiency are often couched in terms of containing bank risk and improving bank efficiency. To interpret the outcome, it is also necessary to understand fully the movement in measures that in-

dicate the underlying operational efficiency of the banking sector and also agency relationships. These are often a function of the underlying sociopolitical system, which determines the level of disclosure and the type of corporate governance and accountability measures.

Other risks, such as foreign exchange risk, cannot be assessed by an external analyst without more detailed disclosure than is currently given in the external reports of banks. Despite limits of external analysis, use of financial statement ratios for the purposes of this study is the only feasible alternative that can be used to isolate the effects of regulatory changes on bank behavior which can then be assessed in terms of the goals of regulators.

The type of method proposed in this chapter is therefore concerned with assessing the effectiveness of bank management and hence that of regulators, and thus whether the original intentions of regulatory change have been achieved, in stimulating banks to lend to the right sectors at the lowest cost levels, being able to supply a wider range of products and services, and achieving efficiencies envisaged by deregulation, or in isolating regulatory models that outperform others. This latter function is part of the country and sovereign risk assessment process.

To summarize, the major limitations, constraints, and challenges are the following:

- The ability of the analysts undertaking the classification of regulatory models
- The cooperation of bank supervisors in providing necessary input into this component
- The provision of externally consistent data which meet international accounting standards by banks and the provision of necessary internal data by bank supervisors to rating agencies
- The acceptance by supranational regulators, rating agencies, and banks themselves of this more transparent and robust method of assessing regulatory models and bank performance.

Whatever changes are made to country risk assessment, the pressures of evolving best practice in other OECD countries may force change in the Australasian region to harmonize regulatory models. Asian regulatory models have not yet evolved even to the Australian starting model. Their need for reform in tightening prudential supervisory measures while liberalizing the protective measures is even greater, but it needs to match their stage of economic development, such as having a liquid market for government bonds so that there exists a long-term risk-free interest rate to price loans.

For this to occur, some hurdles need to be overcome: the need to reconsider attitudes toward capital adequacy particularly in Japan, particularly regarding the measuring of risk; to test actual willingness to open

up the system to foreign ownership; to realize that competition and increased business lending is not created through exhortations but through inducements; and to recognize the need to protect the system from risks other than credit as well the need to ensure greater accountability of bank management.

At the heart of the prospects of regulatory change in Asia is a more fundamental problem—that of the underlying political institutions which, through their democratic processes, should endure public monitoring, proper corporate governance, accountability, and hence effective performance of the regulatory model.

NOTES

1. The qualities ranked were regulatory interference in commercial decisions; promotion of new listings, placement/rights issues, mergers and acquisitions, restructuring, and regulation of the issuance of securities licenses; commitment of regulators to increased participation of foreign investors, foreign brokers, and retail investors; enforcement of investor protection, insider trading, share manipulation, qualifications of market participants, and evenhandedness in all dealings; and the development of new products in terms of accessibility, transparency, confidentiality, consistency of ruling, new products, and competence.

2. Responses were then averaged to give the following overall rankings of Singapore first with 11.4 out of 15, Hong Kong with 8.8 average out of 15, then at quite a distance Malaysia with 5.6, Korea at 4.4, the Philippines and Thailand with 1.4, and finally Indonesia with 0.7. When it is remembered that 0 = bad with no improvement, 5 = better, and 10 = dramatic improvement, the events of 1997–1998 appear to follow logically. Even Singapore, acknowledged as being the best-regulated market in Asia, was criticized for lack of innovation, an "us and them" attitude to banking, and interference in commercial decisions. A need to change the overall basic regulatory philosophy was indicated (Asiamoney, 1993, 59).

3. For instance, macroeconomic instability as noted in Akyuz (1998); poor economic policies as expounded by Corsetti, Paolo, and Roubini (1998).

4. As put forward by Stiglitz (1997) and extended by Wade and Veneroso (1998), in terms of lifting exchange controls causing excessive short-term, unhedged dollar loans which when misallocated led to a liquidity crisis.

5. See Latter (1997).

6. As propounded by Honohan (1997) and said to go hand in hand with "insider dealing, corruption, and weak corporate governance," Radelat and Sachs (March 1998, 26–27).

7. See Fischer (1998).

8. IMF (1998) and Claessens and Glaessner (1997).

9. All tables are a unique application and extension (by Currie) of the taxonomy developed by Grabosky and Braithwaite (1986) and Ayres and Braithwaite (1992) devised to explain the differences in the performance of the banking sector in different financial systems, and how that relates to differences in the

regulatory models applied. The use of the typology of enforcement modes is adapted from the aforementioned authors. The concept of sanctions and compliance audits is applied to the financial system. However, the distinction between prudential and protective measures, the ranking as strong or weak, and their combination into a matrix of regulatory models are also unique.

10. As prudential supervisory systems are systems of preventive, rather than protective, regulation (Dale 1996), regulation occurs in a responsive mode, whereby the performance of a bank or the industry as a whole is examined. A response is then made, ranging from no response to a maximum penalty moving up a pyramid of sanctions, with a variety of compliance audit methods used to check on the response, such as on-site or off-site inspections.

11. A. Hartcher, "The Asian Crisis," *Australian Financial Review*, April 7, 1998, 29.

12. For instance, the losses of Daiwa Bank in Japan amounting to US$1.1 billion from unauthorized bond trading at the bank's New York branch on September 18, 1995, was from undetected forged trade slips. The resulting decline in the bank's share price rebounded not only on Daiwa's credibility but on the Japanese banking system in general.

13. The recognition in 1987 in the United Kingdom that prudential measures are such an essential part of the regulatory model that they merit a separate Prudential Supervisory Board governed by its own act, which directly supervises the conduct of financial institutions, conducting on-site examinations, was followed ten years later by the establishment of a supra regulator to monitor all types of financial institutions, the Financial Services Authority (FSA).

14. The recommendation to introduce on-site examinations was made as a result of an inquiry into the performance of the banking system (Martin 1991, recommendation 26, p. xxxii) and adopted in the following year according to the annual report of the Reserve Bank of Australia (RBA 1992).

15. As at July 1, 1998, a separate supervisory body, the APRA, operating in a similar manner to the United Kingdom's FSA and the German Federal Board Supervisory Office, was established. APRA acts as a liaison with the RBA when problems of systemic stability are posed by an institution's management. The RBA, by virtue of its monitoring of all payments on a daily basis, still has a supervisory role.

16. Estimates of the BIS and Jardine Fleming, quoted in "Asia's Economic Crisis—How Far Is Down?" *The Economist*, November 15, 1997.

17. Ibid.

18. During the early 1990s, preparations were made to increase liberalization of the financial system. The Singapore Stock Exchange increased capital-adequacy standards for its members (S$0.5 million to S$3 million) while reducing the permissible aggregate indebtedness from eight to five times capital. Similarly, the Singapore International Monetary Exchange raised capital requirements for both clearing and nonclearing members.

19. In 1992, as a result of petitions from Australia by the Foreign Currency Borrowers Association (FCBA), the MAS has undertaken to investigate the extent of their unwitting involvement in the foreign currency loan fiasco which resulted in A$6 billion of problem loans. These involved loans denominated in Swiss

francs to small businesses which had no foreign currency earnings to offset the exchange risk.

20. "The Outlook—WSJ Interactive Edition," Dow Jones, November 3, 1997.

21. "Thai Finance—More Questions than Answers," *The Economist*, October 18, 1997.

22. Peregrine Investments was a high-flying securities trader and investment bank that grew in less than a decade to become Asia's largest financial house outside Japan. Its collapse was precipitated by an unhedged US$265 million loan to a taxicab company in Jakarta, which was undercapitalized.

23. In June 1991, the Ministry of Finance (MOF) reviewed recommendations to permit banks and securities firms to establish subsidiaries to engage in each other's business, lowering the barriers among Japan's ordinary banks, long-term credit banks, trust business, and securities firms. Other changes in the early 1990s were the introduction of more than three-year time deposits to ordinary banks and the diversification of debentures and floating rate deposits, permitting trusts to offer cash management trusts with yields tied to the underlying investments or deposits with less than one-year maturity. Securities firms were permitted to offer investments in short- and medium-term bonds. In 1991 foreign exchange limits on overseas deposits were substantially increased (from 5 million to 30 million yen without approval; from 30 million to 100 million yen with approval). In October 1990 non-Japanese investment trusts were allowed to operate. In November 1990 steps were taken to deregulate interest rate controls on time deposits, to be completed in 1993. In 1993 the 50 percent ownership limit on banks and securities firms was lifted.

24. "Banks on the Brink," *Business*, CNN site, p. 12—http://www.businessweek.com/1997/08/b351512.htm).

25. W. Gruben, quoted in J. K. Glassman, "Get Tough with Japan," *Washington Post*, March 3, 1998, 17.

26. Ibid.

27. "Business: The Economy Japan's $600 Billion Headache," *BBC News*, BBC Online Network, July 17, 1998—http://www.bbcnews.org/hi/english . . . economy/newsid-134000/134394.stm.

28. "Second-category Loans Need a Closer Look: Imai," *Japan Times*, July 6, 1998, Yahoo News.

29. J. Barnathan, D. Roberts, M. L. Clifford, B. Einhorn, and P. Engardio, "Can China Avert Crisis? China's Economy Is Wobbling, and a Major Shift in Policy Toward Public Spending Is About to Change History," *Business Week's Archives*, March 5, 1998, p. 2, McGraw-Hill Companies—http://www.businessweek.com/1998/11b3569001.htm.

30. Ibid., 4.

31. W. Kazer, "Shanghai Scraps Loan Quotas in Bank Reform," *Financial Express*, December 27, 1997, Indian Express Newspapers (Bombay) Ltd.—http://expressindia.com/fe/daily/19971227/36155313.html.

32. http://www.businessweek.com/1997/08/b351512.htm.

33. For instance, when banks violated guidelines relating to the size of the loan to capital base, loan officers were ordered to bring down the size of the loan (Yap 1997).

34. J. Hookway, "Malaysia Economic Planners Seem to Admit Need for Higher Rates," *Wall Street Journal*, Interactive Edition, December 10, 1997.

35. R. Pura, "Malaysian Leaders Set Austere Economic Plan," *Wall Street Journal*, Interactive Edition, December 8, 1997.

36. "Banking in Malaysia—Next in Line?" *The Economist*, October 4, 1997.

37. "Broken Dreams," *Time Asia*, 151, no. 23 June 15, 1998, 1—http://www.pathfinder.com/time/asia.

38. An example is the Bank Andromeda, jointly owned by ethnic Chinese timber baron Prajogo Pangestu (50 percent; Bambang Trihatmodjo, President Soeharto's second son (25 percent); and Henry Pribadi (25 percent).

39. "Banks on The Brink: Asia's Institutions Can Be Saved—With a Lot of Money," Business section, Asiaweek March 20, 1998, http://www.cnn.com/ASIA NOW/asiaweek/98/0320/index.html.

40. Ibid.

41. "Korean Banks Hard Hit by Hanbo," *Sydney Morning Herald*, February 4, 1997, 26.

42. M. Woo-Cumings, "Bailing Out or Sinking In? The IMF and the Korean Financial Crisis," paper presented at the Economic Strategy Institute, December 2, 1997, Asienhous Essen/Asia House Essen—http://www.asienhous.org/asian crisis/woo-cumings.htm.

43. "Banks on the Brink," 4.

44. D. McDermott and David Wessel, "Financial-Sector Weaknesses Are Rolling Asian Currencies," *Wall Street Journal*, Interactive Edition, October 6, 1997.

45. Ibid.

46. For instance, F. Fecher and P. Pestieau, "Efficiency and Competition in OECD Financial Services," in *The Measurement of Productive Efficiency, Techniques and Applications*, ed. Harold O. Fried, C. A. Knox Lovell, and Shelton S. Schmidt (Oxford University Press, 1993); A. N. Berger and D. B. Humphrey, "The Dominance of Inefficiencies over Scale and Product Mix Economies," *Journal of Monetary Economics* 28 (1991): 117–48; A. N. Berger and D. B. Humphrey, "Measurement and Efficiency Issues in Commercial Banking," in *Output Measurement in the Service Sectors*, ed. Zvi Griliches (Chicago: University of Chicago Press, 1992); A. N. Berger, and D. B. Humphrey "Megamergers in Banking and the Use of Cost Efficiency as an Antitrust Defense," *Antitrust Bulletin* 33 (1992).

47. This plan has been expanded upon by Robert Rubin, the U.S. Treasury secretary, to mean the provision of better information in the form of substantial expansion of the types of economic and financial data made available, in particular the external liabilities of public and private sectors, including publication of usable central bank reserves, forward positions, and foreign currency liabilities of commercial banks (Hartcher 1998, 10). The IMF in turn would be required to provide more information on its analyses and lending conditions, but not including public warnings of a crisis.

48. "Editorial: East Asian Shipwreck," *Financial Times*, February 16, 1998.

49. "The East Asian Crisis" (Institute of Development Studies, May 27, 1998)—http://www.ids.ac.uk/ids/research/easia.html.

50. "How Far Is Down?" *The Economist*, December 1997—http://ww.stern.nyu.edu/~nroubini/asia/sf0983.html.

51. Chile, Argentina, and the United States display foreign-owned assets of at

least 20 percent or more of the total; Japan, Indonesia, Taiwan, and South Korea display levels of less than the Thai economy of 6 percent.

52. For instance, the Chilean central bank publishes findings on how well banks grade loans. Sanctions are applied if reserves are insufficient. The Argentinian central bank monitors banks' auditors. Banks must subject themselves to market discipline by issuing bonds equal to deposits; strict international capital-adequacy standards are applied.

53. BIS, "Supervisory Lessons to Be Drawn from the Asian Crisis" (Basle Committee on Banking Supervision Working Papers, no. 2, Basel, Switzerland, June 1999).

54. Ibid., abstract.

55. A report surveying large banking institutions conducted in 1998 by a working party of the ECSC (Euro-currency Standing Committee, since renamed the Committee on the Global Financial System) and a report of the findings of a horizontal review of U.S. institutions conducted in 1997 and 1998 by the U.S. Interagency Country Exposure Review Committee (ICERC), established by the Office of the Comptroller of the Currency and the Federal Deposit Insurance Corporation (the U.S. banking supervision agencies), to assess transfer risk and to ensure uniform treatment in U.S. banks.

56. BIS "Supervisory Lessons," 3

57. Ibid.

58. Ibid., 4.

59. Ibid.

60. Reserve Bank of Australia (1993, 26–28); Federal Deposit Insurance Corporation, *History of the Eighties—Lessons for the Future*, vol. 1, *An Examination of the Banking Crises of the 1980s and Early 1990s* and vol. 2, *Symposium Proceedings* (Washington, D.C.: FDIC, 1997); FDIC, "Report on GMS Early Warning System Review" (Washington, D.C.: FDIC, Division of Research and Statistics, April 23, 1997).

61. Federal Reserve Bank, "FIMS: A New Monitoring System for Banking Institutions," *Federal Reserve Bulletin* (Washington, D.C.: Board of Governors of the Federal Reserve System, 1995).

62. Financial Services Authority, "Risk Based Approach to Supervision of Banks" (London: Financial Services Authority, 1998).

63. For instance, A. Demirguc-Kunt, "Deposit-Institution Failures: A Review of the Empirical Literature" *Economic Review* (Federal Reserve Bank of Cleveland), 25, Fourth Quarter 1989, 2–18. Other more recent articles on predicting bank failure are James B. Thomson, "Modeling the Bank Regulator's Closure Option: A Two-Step Logit Regression Approach," *Journal of Financial Services Research* (May 1992): 5–23; R. A. Cole and J. W. Gunther, "Separating the Likelihood and Timing of Bank Failure," *Journal of Banking and Finance* (1995); D. S. Jones and K. K. King, "The Implementation of Prompt Corrective Action: An Assessment," *Journal of Banking and Financing Finance* (1995).

REFERENCES

Adams, J. R. *The Big Fix—Inside the Savings and Loans Scandal*. London: John Wiley & Sons, 1990.

Akyuz, Y. "The East Asian Financial Crisis: Back to the Future?" UNCTAD Homepage, United Nations, 1998. http://www.unicc.org/unctad/en/pressref/prasia98.htm.

Asiamoney & Finance. *Asia's Regulators Poll: Asia's Most Improved Securities Regulators*. New York: Dow Jones, February 1993.

"Asia Corruption Poses Risk to Clean Neighbours." *Australian Financial Review*, April 2, 1998.

Ayres, I., and J. Braithwaite. *Responsive Regulation, Transcending the Deregulation Debate*. Oxford: Oxford University Press, 1992.

Bangkok Bank of Commerce. *Annual Report*. Bangkok Bank Public Company Limited, 1997.

———. "Money Market 1998." Research Department of Bangkok Bank Public Company Limited, 1998. http://www.bbl.co.th/research/jan1998-money3.htm.

Bank for International Settlements (BIS). *62nd Annual Report*. Basle: Bank for International Settlements, May 1992.

———. *63rd Annual Report*. Basle: Bank for International Settlements, May 1993.

———. *64th Annual Report*. Basle: Bank for International Settlements, May 1994.

Bank of England. "Extract from the Conclusion of the Bank of England Report on the Collapse of Barings." 1997. http://www.numa.com/derivs/ref/barings/bar03.html#13.10.

Claessens, S., and T. Glaessner. *Are Financial Sector Weaknesses Undermining the Asian Miracle?* Washington, D.C.: World Bank, 1997.

Clarke, F., G. Dean, and K. Oliver. *Corporate Collapse*. Cambridge: Cambridge University Press, 1997.

Corsetti, G., P. Paolo, and N. Roubini. "What Caused the Asian Currency and Financial Crisis?" Asian Crisis Homepage, March 1998. http://www.stern.nyu.edu/~nroubini/asia/AsiaHomepage.html.

Currie, C. V. "An Analysis of Changes in Regulatory Models Governing the Australian Financial System, 1973–1993." Paper presented at the biannual conference of the Australian Institute of Banking and Finance, Melbourne, Australia, September 30, 1997.

———. "Regulation of the Australian Financial System." Ph.D. diss. University of Sydney, 1998.

Dale, R. "Regulating the New Financial Markets." Paper presented at the University of Melbourne Business School, Melbourne, Australia, July 1996.

Financial Systems Inquiry. *Financial Systems Inquiry Final Report*. The Wallis Inquiry. Canberra: Australian Government Publishing Service, March 1997.

Fischer, S. "Asia and the IMF—Capital Account Liberalisation and the Role of the IMF." International Monetary Fund Homepage, September 19, 1997. http://www.imf.org/external/np/apd/asia/FISCHER.htm.

———. "The Asian Crisis: A View from the IMF." Address by Stanley Fischer, first deputy managing director of the International Monetary Fund, at the Midwinter Conference of the Bankers' Association for Foreign Trade, Washington, D.C., January 22, 1998. http://www.imf.org/external/np/speeches/1998/012298.htm.

Frenkel, Allan, B., and J. D. Montgomery. "Financial Structure: An International

Perspective." In *Brooking Papers on Economic Activity*, edited by W. C. Brainard and G. L. Perry. Washington, D.C.: Brookings Institution, 1991.

Gibson, D. J. "Why Are We in This Mess?" Thailand Development Research Institute, 1997. 565 ramkhamhaeng Soi 39, Wangthonglang, Bangkok 10310, Thailand—http://wws.infor.tdr.or.th/.

Goodhart, C., P. Hartmann, D. Llewellyn, L. Rojas-Suarez, and S. Weisbrod. *Financial Regulation, Why, How and Where Now?* London: Routledge, published in association with the Bank of England, 1998.

Grabosky, P., and J. Braithwaite. *Business Regulation and Australia's Future*. Canberra: Australian Institute of Criminology, 1993.

———. *Of Manners Gentle—Enforcement Strategies of Australia Business Regulatory Agencies*. Melbourne: Oxford University Press, 1986.

Hartcher, P. "Fear Needed to Curb Excessive Greed." *The Australian Financial Review*, April 16, 1998, 10.

Honohan, P. "Banking System Failures in Developing and Transition Countries: Diagnosis and Prediction." Working paper no. 39. Basle: Bank for International Settlements, January 1997.

International Banking Credit Agency (IBCA). *Seminar on Comparison of the Major Banking Systems*. London: IBCA Banking, November 29, 1985.

International Monetary Fund (IMF). *Toward a Framework for Financial Stability*. Washington, D.C.: International Monetary Fund, 1998.

Ito, H., and A. Z. Szamosszegi. *A Cure for Japan's Sick Banks*. Washington, D.C.: Economic Strategy Institute, 1998.

Latter, T. *Causes and Management of Banking Crises*. Handbooks in Central Banking no. 12. London: Center for Central Banking Studies, Bank of England, July 1997.

Llewellyn, D. T. "Banking in the 21st Century: The Transformation of an Industry." In *The Future of the Financial System, Proceedings of a Conference*, edited by M. Edey. Canberra: Economic Group, Reserve Bank of Australia, Alken Press, 1996.

———. "Rules v Discretion & Contract Regulation." Seminar paper presented at the University of Melbourne Business School, Melbourne, Australia, July 1996.

Martin, S., ed. *A Pocket Full of Change: Inquiry into the Australian Financial System, Report of the House of Representatives Standing Committee on Finance and Public Administration*. Canberra: Australian Government Publishing Service, 1991.

Norton, J. J. *Bank Regulation and Supervision in the 1990's*. London: Lloyds of London Press with the Center for Commercial Law Studies and the Chartered Institute of Bankers, 1991.

Organization for Economic Cooperation and Development (OECD). *Banks under Stress*. Paris: OECD, June 1992.

———. "Financial Liberalisation and Consumption Behavior." Working paper no. 81, March 1991.

———. "Financial Liberalisation, Asset Prices and Exchange Rates." Working paper no. 95, February 1991.

———. "Increasing Financial Market Integration, Real Exchange Rates and Macroeconomic Adjustment." Working paper no. 96, February 1991.

———. "Macroeconomic Consequences of Financial Liberalisation: A Summary Report." Department of Economic and Statistics, Money and Finance Division. Working paper no. 98, February 1991.
———. *Systemic Risks in Securities Markets*. Paris: OECD, 1991.
———. "Trends in Stock, Corporate Bond and Foreign Exchange Market Volatilities." Working paper no. 94, February 1991.
Ostrom, D. *Bank Failure Complicates Debate on Banking Policy*. Japan Economic Institute Report, Washington, D.C., April 5, 1996.
Radelet, S., and J. Sachs. "The East Asian Financial Crisis: Diagnosis, Remedies, Prospects." Paper presented at the Brookings Panel, Washington D.C., March 26–27, 1998.
———. "The Onset of the East Asian Financial Crisis." Paper presented at the National Bureau of Economic Research (NBER) Currency Crises Conference, February 6–7, 1998.
Reserve Bank of Australia (RBA). *Reserve Bank of Australia Annual Report*. Canberra: Government Printing Office, 1992, 1993, 1997.
Sampson, A. *Money Lenders—Bankers in a Dangerous World*. London: Hodder and Stoughton, 1997.
Sinkey, J. F., Jr. *Commercial Bank Financial Management*. New York: Maxwell Macmillan, 1992.
Sivasomeboon, B. *Business in Good Shape*. Bangkok: Bangkok Post Publishing, 1997.
Spaeth, A. "The Hunt Is Over—As Bad Loans Bring Down High-flying Hong Kong Securities House Peregrine, Investors Search the Rubble for Lessons." *Time* 151, no. 3, January 26, 1998. http://www.pathfinder.com/time/magazine/1998/int/980126/peregrine.html.
Stiglitz, J. "Statement to the Meeting of Finance Ministers of Asean *plus 6* with the IMF and the World Bank." World Bank Group Homepage, 1997. http://www.worldbank.org/htm/extrdr/extme/jssp120197.htm.
Verrender, I. "How $28bn Vanished When the Banks Went Mad." *Sydney Morning Herald*, October 16, 1997, 27.
Wade, R., and F. Veneroso. "The Asian Crisis: The High Debt Model vs. the Wall Street–Treasury–IMF Complex." Russell Sage Foundation, IMF2, March 2, 1998. http://epn.org/sage/imf24.html.
Yap, L. K. "Grace Period: Banks Get Time on Property Loan." *The Star* (Kuala Lumpur), April 4, 1997, 1.

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Banking Trends and Deposit Insurance Risk Assessment in the Twenty-First Century

Steven A. Seelig

INTRODUCTION

During the last decade of the twentieth century, the American banking industry and the global and domestic financial sectors have been undergoing major changes. These changes will profoundly affect bank regulation and deposit insurance as we enter the next century. In recent years there has been unprecedented consolidation in the banking and thrift industries in the United States, and the move toward consolidation is also occurring in many other countries.[1] Banks and nondepository institutions are competing with each other at an unprecedented level, and this is likely to continue, especially as banks receive additional powers to expand their product offerings and take advantage of their new powers. Advances in technology have not only changed the economies of scale in banking but have also affected customers' expectations and demands for services. Increased globalization of economic activity has increased the competitive nature of financial services while at the same time making banks more vulnerable to developments in other countries. The key questions are whether the current system of bank regulation and supervision allows for adequate risk assessment and monitoring to protect the government's interests as deposit insurer and whether the appropriate market incentives exist to promote the appropriate degree of risk taking by banks.

As we enter the twenty-first century, it is the changes in the competitive pressures faced by banks and thrifts, the shift in the size distribution

of financial institutions, and the increasing role of technology and globalization that are of greatest significance to the deposit insurance system. Competition from nonbank firms has caused banks to shift away from lending as their dominant revenue-producing activity and shift into many other activities. Similarly, with the advent of improved technology, and especially the internet, geographic barriers and locational advantages have begun to break down. More important, with the increased flow of information, and the reduction in search costs that have accompanied the spread of the Internet, comes the ability of depositors to move deposits almost instantly and with reduced transactions costs at the margin. The net effect of these changes is to increase banks' exposure to the risk of liquidity pressures. For small banks technological change has meant a more competitive and complex business both operationally and financially. Of greater interest from a deposit insurance perspective, however, is the implications of these changes for large banks.

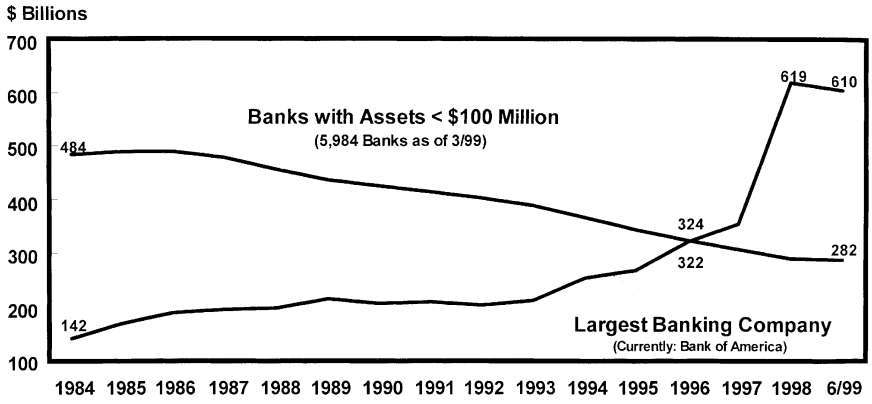
DEVELOPMENTS IN BANKING

Consolidation

The banking industry in the United States has undergone unprecedented consolidation[2] during the past fifteen years. In terms of the numbers of depository institutions, the United States had a relatively fragmented industry throughout much of its history. The total number of banks and thrifts remained at approximately 18,000 from the mid-1960s through the mid-1980s. With the exception of a few large money center banks, the industry was largely made up of large regional banks and a very large number of small banks and thrifts. Beginning with the banking crisis of the 1980s, the number of banks and thrifts has declined dramatically—from approximately 18,000 banks and thrifts in 1985 to 10,327 at midyear 1999—and the number of organizations owning banks and thrifts has declined from 14,775 to 8,441. While the number of firms in the industry has declined, the total assets of the industry grew during the past fifteen years by approximately 63 percent to approximately $6.5 trillion.

Accompanying the structural change in banking has been a dramatic shift in the basic nature of banking. During the past fifteen years borrowing by the nonfinancial business sector has grown by 155 percent. However, the share of these loans held by commercial banks declined by approximately three percentage points to 20 percent. Thus, despite a robust economy and strong commercial loan demand, banks are losing market share to nonbank competitors. The end result of this shift has been that banks have had to rely on noninterest income (fees) to bolster revenue growth. As a result, noninterest income as a percent of net op-

Figure 6.1
Assets of Largest Bank Compared with Banks with Assets < $100 Million



Includes banks and savings associations. Excludes nonbank subsidiaries of holding company.

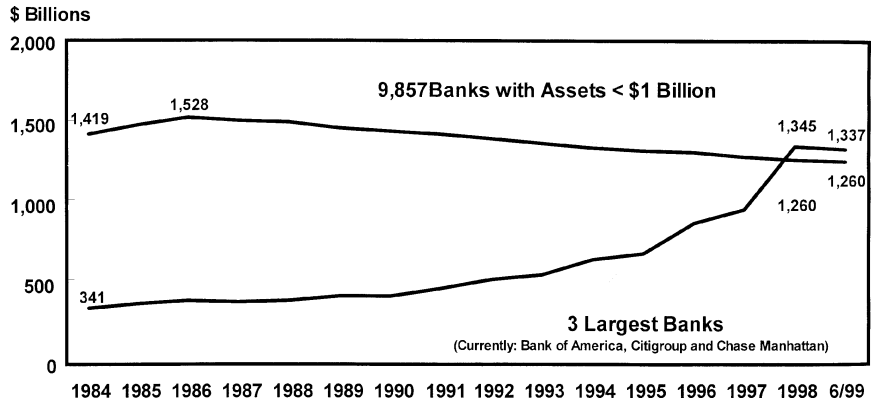
erating revenue grew from 29.6 percent in 1984 to 40.2 percent at mid-year 1999. This greater reliance on other sources of income changes the risk profile of banks and thus has implications for the way banks are supervised.

In addition to the shrinkage in the number of banks, there has been a decided shift in the concentration of assets in the very largest institutions. In 1984 the ten largest banking companies held approximately 19 percent of the total assets in the banking and thrift industries; today, the ten largest firms hold slightly more than 39 percent of total assets. The decline in the importance of small institutions relative to that of the largest banks can be seen in Figures 6.1 and 6.2. Since 1996 the largest banking firm in the United States has had more assets than the aggregate total assets of all banks under $100 million. Moreover, since 1998 the three largest banks have had aggregate total assets greater than the combined assets of all banks with assets less than $1 billion. What is developing is an industry that resembles a barbell with the vast majority of banks at one end and the very largest banks at the other end.

Bank Activities

A cursory review of balance-sheet data for the largest banks indicates some of the changes that are occurring as we enter the twenty-first century. With the increased competition from nondepository institutions for loan business has come a significant decline in net interest income and a rise in noninterest income as a percentage of total income. With the doubling in the share of total assets held by the banks in the ten largest

Figure 6.2
Assets of Three Largest Banks Compared with Banks with Assets < $1 Billion



Includes banks and savings associations. Excludes nonbank subsidiaries of holding company.

banking organizations, to 39.2 percent, their share of net interest income has also increased from 21 percent in 1984 to 35.9 percent in mid-1999. However, mirroring the trend in the industry as a whole, noninterest income has become a greater share of total income—growing for the ten largest banking companies to 47.7 percent of total income from 31.1 percent fifteen years ago. During this period, noninterest income for the industry as a whole grew from 29.6 percent of total income to 40 percent. Although a significant portion, approximately 14 percent, of noninterest income comes from trading income, this relative share has not changed significantly during the past fifteen years. Rather, banks have moved into other fee-generating activities, which add to the complexity of banking and place new demands on the regulators seeking to monitor risk.

Of particular note has been the growth in off–balance sheet activities at commercial banks. Two significant areas of growth are loan commitments and off–balance sheet derivatives. While the ten largest banking organizations have always had a significant share, just under half, of the outstanding loan commitments, they totally dominate the derivatives activity of banks and thrifts with approximately 90 percent of the total. What is perhaps more important is the size of these activities when compared to the total on-book assets of banks. At midyear 1999 the ten largest banking companies had total booked assets of $2.56 trillion, and their unused loan commitments were $1.89 trillion. However, even more significant is the volume of off–balance sheet derivative activity at these bank holding companies. As of June 30, 1999, the banks in the ten largest

banking companies reported off–balance sheet derivatives with a notional value of $29.9 trillion, or more than ten times their total book assets. These changes in the financial profiles of the large banks are consistent with changes in the nature of banking and the competition banks face in their traditional lending activities.

In addition to off–balance sheet assets, banks have expanded into new activities either directly, through the bank, or indirectly, through subsidiaries of the bank or affiliates in a holding company. These activities have encompassed the fields of insurance sales and securities sales and underwriting. This expansion of product lines has resulted from banks using the considerable leeway that exists under current law. As the debate on financial modernization evolves, it is likely that banks will receive expanded powers and banks will shift even more heavily into nonbank activities.

Globalization

Aside from the changes in bank balance sheets caused by domestic competition, the larger banks have adapted to the increased globalization of economic activity that has occurred in recent years. While foreign lending by U.S. banks declined during the 1980s and early 1990s in response to the debt of less-developed countries (LDCs) and domestic banking crises, foreign lending has increased at an average rate of approximately 12 percent per annum since 1993 (see Curry, Richardson, and Heider 1998). Moreover, the share of foreign lending by the largest banks increased during this period. While data on cross-border lending and local currency loans made by foreign branches of U.S. banks capture the direct global activity of U.S. banks, it does not reflect the international exposure inherent in domestic lending to multinational corporations and other firms reliant on international trade.[3] Banks are no different than their customers in becoming more vulnerable to economic shocks in other parts of the world. In fact, to see how interdependent financial markets have become, one need look only at what occurred in U.S. credit markets as a result of the Russian debt default in October 1998.

In addition to the effect of globalization on the asset side of the balance sheet, large banks continue to rely on foreign deposits as a significant source of funds. Foreign deposits constitute slightly more than one-third of total deposits at the ten largest banks and thrifts and approximately 25 percent of total assets. This reliance on foreign liabilities increases the global exposure of the largest banks. Not only are large U.S. banks reliant on foreign sources of assets and liabilities, but one of the largest banks, Bankers Trust, was acquired by Deutsche Bank, a large German bank.[4] The trend toward consolidation and international acquisitions of large banks is one that appears to be continuing in Europe and elsewhere and will likely increase the global nature of banking.

Technological Change

The financial sector has undergone significant change with advances in technology, as has much of the economy. As computer and communication technologies have improved, the ability of business and individuals to move funds both bilaterally and through clearinghouses has become effortless and almost instantaneous. Advances in software and hardware have led to the creation of powerful tools that allow banks to value individual customer relationships, identify customer needs, and cross-sell products and services. Employees answering phones who have on-line access to customer and bank product information can meet many customer needs over the phone. Geographic boundaries have been further eroded by the access provided by the internet. The youth of today, who are so accustomed to using the internet to communicate with friends, do research, and purchase goods, will very likely use their computers for banking transactions—potentially making the bricks-and-mortar branch eventually irrelevant.

IMPLICATIONS FOR DEPOSIT INSURANCE

The changes occurring in banking have significant implications for bank regulation and for the deposit insurance system. Both the changes in the structure of the industry and the changes in the composition of banks' portfolios raise questions about the riskiness of banking and the long-term health of a deposit insurance scheme that relies on an insurance fund. Although one might argue that the goal of regulation should be to avoid any risk to the deposit insurer, this would be poor public policy. If banks are performing their economic role of intermediation and serving the needs of the community, they will take risks. Similarly, in a competitive system, we should expect to see firms enter and exit the banking industry and this implies that there will be bank failures in the normal course of economic activity. The role of deposit insurance is to protect small depositors, maintain public confidence in the banking system, and minimize the broader economic consequences that can accompany bank failures. However, the existence of deposit insurance reduces market discipline and may also create a moral hazard problem for troubled institutions. Since insured depositors have no incentive to monitor and discipline management, government supervisory oversight tries to offset the risks posed by moral hazard. The question is whether the present approach to supervision is appropriate given the changes that have occurred in banking.

From a deposit insurance perspective, the consolidation in the banking industry during the past several years has increased the risk of insolvency of the Bank Insurance Fund (BIF). In a study using Monte Carlo

simulations, Robert Oshinsky (1999) found that consolidation activity of the 1990s has "increased the risk to BIF." He concludes that "the health of the BIF has become more and more dependent on the health of the top 25 banking organizations, and future insolvency may be deeper, and harder to emerge from, than in the past."[5]

Clearly the transformation of the banking industry into a small number of megabanks and a large number of significantly smaller banks raises issues for a deposit insurer. In theory, the reforms adopted as part of the Federal Deposit Insurance Corporation Improvement Act (FDICIA) and the subsequent enactment of national depositor preference should prevent the deposit insurance fund from becoming insolvent by shifting losses to uninsured depositors and nondepositor creditors. However, in all likelihood, there would be massive shifts of uninsured deposits (including foreign deposits) from any large bank perceived to be in danger of failing. Insured deposits and secured borrowings would replace these liabilities, resulting in greater losses to the insurance fund.[6]

It is clear that the current system of bank supervision and risk assessment is appropriate for smaller banks; however, with the increased complexity of banking, especially at the very largest institutions, there will be a need for bank supervision and regulation to evolve as well.

BANK SUPERVISION AND REGULATION

Bank supervision and the process of risk monitoring by bank regulators has traditionally been focused on outcomes rather than on bank prospects.[7] Supervisory oversight relies primarily on onsite bank examinations and offsite monitoring of bank conditions through the evaluation of financial reports and public disclosures. Examiners can confirm the accuracy of financial reports issued by a bank as well as review private information in assessing the condition of the loan portfolio. In addition, examiners assess the adequacy of the bank's internal controls and risk-management procedures. The examination process consists of an examination report containing narrative comments by the examiner and a rating of the bank. While examiners will frequently comment on the future prospects of the bank, the resultant rating system, the CAMEL rating, yields a rating of the condition of the bank that is ex post rather than ex ante. The major focus of supervision has been to evaluate the adequacy of capital after making adjustments for changes in market conditions and the credit quality of the loan portfolio. Most of this analysis is a reflection of the condition of the bank at a specific point in time. While some of the market and credit-risk models used by large banks and their regulators attempt to capture sensitivity to changes in interest rates and economic conditions, it is not clear that these give sufficiently accurate assessments of the risk exposure of a large complex institution.

Models to assess interest rate sensitivity are based on sufficient data to give a fairly reliable assessment of the sensitivity of a bank's financial condition to changes in rates. However, credit-risk models are constrained by a lack of historical loan performance data and information on many bank borrowers.[8] Moreover, when one incorporates the risk exposures associated with the international activities of larger banks, traditional examination techniques are unlikely to provide a true risk assessment suitable for deposit insurance purposes.

Part of the problem may be that most examinations are not performed for the purpose of providing the deposit insurer with information needed to assess the overall risk posture of the insurance fund or to determine the relative long-term risk posed by an individual institution to the fund. While the CAMEL ratings are supposed to reflect, to some degree, the risk of failure, it is viewed as a relatively short-term prospect. Clearly banks rated at 4 or 5 are considered to pose a significant risk of loss to the fund based on the deterioration in financial condition. Nevertheless, the primary purpose of examination is not risk assessment from a deposit insurance perspective. For example, the *Manual of Examination*, issued to all Federal Deposit Insurance Corporation (FDIC) examiners, indicates that safety-and-soundness examinations are performed for several purposes.

1. Maintain public confidence in the integrity of the banking system and in individual banks
2. Determine a bank's adherence to laws and regulations
3. Protect the financial integrity of the deposit insurance fund by preventing problem situations from remaining uncorrected and deteriorating to the point that a cost is borne by the insurance fund
4. Supply the supervisor with an understanding of the nature, relative seriousness and ultimate cause of a bank's problems, and thus provide a factual foundation on which to base corrective measures.[9]

It should be noted that the FDIC is the primary federal regulator for state-chartered banks that are not members of the Federal Reserve System, and most of these banks are relatively small institutions.

The Office of the Comptroller of the Currency (OCC) charters and supervises national banks and distinguishes the objectives of bank supervision between those that are applicable to small and large banks. In supervising community banks, the OCC's objectives are to

1. Determine the condition of the bank and the risks associated with current and planned activities
2. Evaluate the overall integrity and effectiveness of the bank's risk management systems

3. Enforce banking laws and regulations
4. Attempt to achieve correction of deficiencies discovered during examination.[10]

The OCC considers banks with total assets greater than $1 billion to be large banks and, for administrative purposes, places the supervision of these banks under an assistant deputy comptroller in a district office or, if the bank is larger than $25 billion, a large-bank deputy comptroller in Washington, D.C. Although the objectives of supervision are essentially the same for large banks as for small ones, the OCC does include the risks originating in subsidiaries and affiliates in its objectives for large banks and uses significantly different examination techniques for larger banks.[11] The OCC's examination focus for large banks is more risk focused than it is for small ones. The examiners focus on a bank's internal policies, procedures, and models to rate the riskiness of the various activities of large banks.

While the examination process may not be focused solely on the condition of the bank, the assignment of ratings appears to be. This is especially true with respect to ratings that result in a downgrade that might result in further supervisory action. Since bank supervisors must be able to support their recommended actions in a legal proceeding, they must rely on current facts rather than perceptions about the future.

The focus on outcome-based risk assessment and analysis of risk-management systems works well for small banks given that the failures of small banks pose minimal risk to the deposit insurance fund.[12] However, examination and supervision that focus on current conditions and risk-management systems may not translate into a complete set of information from which one can realistically assess the risk that an individual large bank poses for the insurance fund. As banks have become more complex in terms of their global exposures, securities market activities, and the sheer magnitude of their operations, it has become more difficult for examiners to make an accurate assessment of an institution's total exposures at any point in time. Moreover, there is a clear distinction between the risk profile of an institution and the probability of near-term failure. An assessment of how well a bank manages risk is not a measure of its risk to the deposit insurance fund.

As we enter the twenty-first century, alternative means for assessing the riskiness of banks will have to be found. Some of these will augment existing supervisory and regulatory approaches while others should replace current methodologies. Given the size and complexity of large banks and thus the range of exposures they face, regulators will need to recognize the implications of economic trends for risk exposure. This is especially true for deposit insurers who must develop quantitative measures of their own risk exposure. Regulators need to go beyond a current

valuation of assets and an assessment of a bank's internal risk-management and monitoring capabilities. Greater attention needs to be paid to developments outside the banking industry and the potential risk exposures these developments hold for bank portfolios and earnings performance.

The most obvious such exposure, and one currently incorporated into bank supervision in the United States, is bank sensitivity to changes in interest rates. Other broader economic exposures that need to be focused on are country exposures both from a credit perspective and an operational perspective. Regulators should be monitoring economic and political developments in countries where large banks have credit exposure and branch and subsidiary operations.[13] Similarly, regulators should monitor trends in their own national and regional economies and make assessments as to the implications of potential change for the risk profile of large banks. Trends in commodity prices and industry performance can have a significant effect on the risk profile of an individual bank that goes beyond the effect on individual loans to firms in the industry. Thus, regulators need to understand these trends if they are to assess the overall exposure of a change in prices on a bank's portfolio.

An example of a large bank where this type of analysis would have proven useful was Continental Illinois National Bank (CINB). While it has been widely perceived that CINB's problems, and subsequent need for FDIC funds in 1984, resulted from their ill-advised purchase of energy loans from Penn Square Bank (which itself failed in 1982), the problems came from a deeper dependence on trends in oil prices. CINB believed that oil prices would rise to $60 per barrel, from a peak of $40, and engaged in a broad range of lending to firms that would prosper if energy prices rose. Aside from loans to firms in the oil and gas business, the bank made loans secured by tankers, new container ships that while slower than older ships were more energy efficient, and non–energy-related loans to companies in foreign countries whose economies depended on the price of oil. An analysis of the bank's portfolio and its sensitivity to changes in the price of oil and other economic events might have detected the degree of risk in CINB well in advance of the bank's problems.

In response to the growth and increasing complexity of large banks, supervisors and insurers must develop new sources of information and analytical techniques to allow them to evaluate the effectiveness of management practice and measure the risks that accompany the broadening of managerial spans in growing institutions. This analysis should become more prospective than the current supervisory analysis, which is very sensitive to current bank performance. In effect, supervisors need to look at bank management in the same way as equity and credit market ana-

lysts do. They need to assess management performance and practices against those of other banks.

An additional source of information that can be used to assess the risk associated with a specific bank, or group of banks, is financial market data. Market participants, whether they are holders of subordinated debt or equity investors, are continuously assessing the future earnings potential and financial condition of a firm. Several recent studies have shown that external stakeholders are able to evaluate risk effectively.[14] Market information that reflects stakeholder expectations can be used by regulators to assess expectations of both the future earnings of publicly traded banks and the certainty with which the market believes the earnings stream will be achieved. The prospects, performance, and risk taking of the largest banks are monitored by a large number of research staffs at investment banking and brokerage firms as well as by institutional investors. These analysts are not only assessing a single institution but are also making comparative judgments. Interest rate differentials between institutions on similar classes of debt clearly provide an indication of the market's view as to the relative risk of default. Similarly, relative equity price data provide insights into the market's expectations as to relative future earnings flows and the likelihood of success in achieving a specific level of future earnings. A frequent criticism of the use of market data is the paucity of such data for small banks and the burden that would be imposed on small banks if they were required to issue subordinated debt. However, from an insurance perspective, market data are available for the larger banks and, as argued above, these are the ones that pose the greatest risk to the deposit insurance fund.

While in many ways the set of market data is superior to examination data in that it is ex ante, it should be recognized that markets assess the prospects for banks given that the current system of examination and regulation is in place. A recent study conducted by John S. Jordan (1999) found that the supervisory process contributed to the market's assessment of banks in New England. Related literature (for example, Berger, Davies, and Flannery 1998) suggests that supervisory assessments, based on recent examinations, may be superior to those of stock market participants in assessing future performance. Another study found that negative information uncovered by examiners is not generally reflected in market pricing until subsequent quarters (DeYoung et al. 1998). Bank examiners have an advantage over market participants in that they have access to private information about the loan portfolio and can provide the market with this information by making banks write off loans or increase loan-loss provisions. On the other hand, market participants may be better than examiners at assessing management strategies and execution and the risks associated with prospective earnings.

Equity markets are concerned with outlook for institutions, particularly the trade-off between risk and return. Debt markets and examiners tend to focus on the risk of default. While the likelihood of default is a significant risk to the insurance fund, it is not the sole determinant of the risk profile of the fund. A well-capitalized bank that is not in imminent danger of failing but engages in risky lending still poses some level of risk to the deposit insurance fund and affects the overall risk profile of the fund. Market data allow one to distinguish the relative risk between two well-capitalized and profitable institutions.

In addition to improving risk assessment by using market data, bank regulators should study the effects of changes in technology and the risks and regulatory issues that will arise from technological change. Improvements in computer and telecommunication technologies have made banking services available across geographic borders, both within nations and globally. Clearly, the ability of consumers to bank, from their homes, with banks anywhere in the world should cause a rethinking of the definitions of banking markets for competitive analysis. Similarly, the ability of depositors of all sizes to move money quickly and over great distances raises issues of the stability of core deposits and the increased likelihood of liquidity pressures on banks that are perceived to be financially distressed. The internet allows the rapid spread of both accurate and inaccurate information about financial institutions and thus increases the likelihood of bank runs, rational and irrational. Perhaps of even greater interest is the ability of banks to solicit high-cost insured deposits over the internet, either as a substitute or complement to deposit brokers, as a means of funding rapid growth. Similarly, loan origination and solicitation over the internet raises a host of consumer compliance issues. Bank regulators and supervisors will need to monitor developments in electronic banking and funds movement technologies in order to anticipate problems, detect high-risk strategies by rapidly growing banks prior to examination, and address consumer issues that arise from electronic commerce.

Perhaps most important, from a policy perspective, is that regulators and deposit insurers will likely have shorter lead times within which to react to emerging problems in larger banks. The rapid flow of information accompanied by the ease of moving funds is likely to decrease the market's reaction time to real or perceived problems, and regulators are more likely to confront liquidity problems.

The combination of the existing examination approach with a monitoring system that relies on financial market assessments of future bank prospects should give the deposit insurer a better assessment of risk than does the present approach, which relies almost exclusively on examinations.[15] By combining market information obtained from stock prices, relative yield data on bank debt, private information obtained by ex-

aminers, and offsite monitoring tools, bank regulators and deposit insurers should be able to assess better the risk and prospects for large banks and control better the exposure of the insurance fund.

With the increase in the international activities of both domestic and foreign banks, not to mention their customers, there is a greater need for information about both the foreign banks that operate within a country and the foreign activities of domestic banks. As more of the larger banks are owned by foreign institutions, deposit insurers and regulators will have to have a greater understanding of the totality of the institution and its risk exposures. Given the differences in treatments of deposits across borders, in regulations regarding permissible activities, and the ease with which depositors are able to move funds in and out of banks, deposit insurers need to gain access to significantly more information than is currently available about the international activities of banks. There needs to be a greater sharing of information among all bank regulators and deposit insurers. While efforts have been under way to standardize fundamental regulatory standards, such as capital requirements, more work needs to be done to facilitate the free flow of information regarding the condition, risk profile, and activities of all banks. Possibly an international body could be created to serve as a vehicle to facilitate the sharing of information among deposit insurers. In order that the financial markets can better assess the condition of large institutions, efforts should continue to increase the transparency of foreign bank financial statements as well as the international activities of all banks.

CONCLUSION

With the changes that are occurring in banking and the likelihood that the pace of change will continue, bank regulators must keep up and expand the sources of information they rely upon to make judgments about the risks in the banking system. From a deposit insurance perspective, risk assessment—both at the individual bank and system levels—is critical. In order to gain a better measure of bank risk, insurers should augment examination assessments with market-based measures of risk.

The continuing globalization of both commerce and banking increases the need for deposit insurers throughout the world to have greater knowledge about the risks facing financial institutions in many countries. A first critical step toward improving risk assessment both by the market and by regulators is to have increased financial transparency and agreed-upon accounting standards. Increased cooperation and information sharing will be needed for insurers to assess properly the exposures of the institutions they insure as well as the aggregate exposure of an insurance fund to international disruptions.

Once deposit insurers are better able to measure the risk profile of a bank, as opposed to assuming its risk to the fund from its current financial condition, a more meaningful system of risk-based premiums can be introduced. Traditional insurance pricing is based on risk profiles that are independent of the performance of the individual insured (for example, young drivers pay higher premiums even if they have a good driving record). Although a well-managed bank may take greater risks and make greater profits, it may nevertheless pose a greater risk to the insurance fund than a less profitable conservative bank. A risk-based premium system should recognize this risk difference and not just seek to charge high premiums to banks that may be in imminent danger of failing or are perceived to have weakened financially. The use of market data should help to identify the risk differences among banks that are equally profitable and well capitalized.

NOTES

The views expressed herein are the author's and do not necessarily reflect those of the Federal Deposit Insurance Corporation.

1. Recently the three largest banks in Japan announced a proposed merger.
2. All of the data included in this chapter are publicly available from the FDIC at www.fdic.gov.
3. See Curry, Richardson, and Heider (1998) for a discussion of the direct and indirect risks associated with the international lending activities of U.S. banks.
4. Similarly, Republic Bank, New York, is being acquired by HKS Banking Corporation, a British-owned bank.
5. Oshinsky (1999, 20).
6. See Marino and Bennett (1999).
7. Clearly, the supervisory reviews undertaken as part of granting a charter are focused on future prospects.
8. See Nuxoll (1999).
9. FDIC (1999, 31).
10. See OCC (August 1998, 1).
11. See OCC (July 1998, 1).
12. Clearly, while the failure of a large number of small banks poses no financial threat to the insurance fund, there are implications in terms of the workload of the FDIC. More important, widespread failures of banks can have an impact on public confidence in the financial system.
13. The Bank of England has performed this type of analysis as part of its bank supervision responsibilities for many years.
14. See, for example, Flannery and Sorescu (1996) and Flannery, Kwan, and Nimalendran (1998).
15. While bank regulators use off-site systems to monitor banks between examinations, these rely solely on financial information reported by banks.

REFERENCES

Berger, Allen N., Sally M. Davies, and Mark J. Flannery. "Comparing Market and Supervisory Assessments of Bank Performance: Who Knows What When?" Board of Governors of the Federal Reserve System, Working paper no. 32, 1998.

Curry, Timothy, Christopher Richardson, and Robin Heider. "Assessing International Risk Exposures of U.S. Banks." *FDIC Banking Review* 11, no. 3 (1998): 13–30.

DeYoung, Robert, Mark J. Flannery, William W. Lang, and Sorin M. Sorescu. "The Informational Advantages of Specialized Monitors: The Case of Bank Examiners." Federal Reserve Bank of Chicago. Working paper no. 4, 1998.

Federal Deposit Insurance Corporation (FDIC). *DOS Manual of Examination*. Washington, D.C.: Federal Deposit Insurance Corporation, 1999.

Flannery, Mark J., and Sorin Sorescu. "Evidence of Bank Market Discipline in Subordinated Debenture Yields: 1983–1991." *Journal of Finance* 51 (1996): 1347–77.

Flannery, Mark J., Simon Kwan and M. Nimalendran. "Market Evidence on the Opaqueness of Banking Firms' Assets." Mimeograph, 1998.

Jordan, John S. "Pricing Bank Stocks: The Contribution of Bank Examinations." *New England Economic Review* (May/June 1999): 39–53.

Marino, James A., and Rosalind L. Bennett. "The Consequences of National Depositor Preference." *FDIC Banking Review* 12, no. 2 (1999): 19–38.

Nuxoll, Daniel A. "Internal Risk-Management Models as a Basis for Capital Requirements." *FDIC Banking Review* 12, no. 1 (1999): 18–29.

Office of the Comptroller of the Currency (OCC). Large Bank Supervision. *Comptroller's Handbook*. Washington, D.C.: Comptroller of the Currency, July 1998.

———. Community Bank Supervision. *Comptroller's Handbook*. Washington, D.C.: Comptroller of the Currency, August 1998.

Oshinsky, Robert. "Effects of Bank Consolidation on the Bank Insurance Fund." FDIC working paper no. 99-3, 1999.

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Supervisory Goals and Subordinated Debt

Larry Wall

The banking industry is undergoing many changes, some of which tend to reduce the informativeness of long-standing supervisory-risk measures. Banks are using changes in information processing and financial technology to create new tools for measuring and controlling risks. These new tools are allowing banks to arbitrage more effectively the differences between the risk measures used by regulators, such as those for risk-based capital, and the true riskiness of the bank. Furthermore, the barriers separating the financial system into different industries, which had been breaking down in the United States, have been largely swept away by the recent passage of the Gramm-Leach-Bliley Act. The increased affiliation between bank and nonbank activities may further weaken the tools used by supervisors to measure a bank's stand-alone risk.

One possible substitute for the discipline imposed by supervisors is an increase in market discipline. Gary H. Stern (1999) points out that market discipline is not an unproven commodity; the U.S. economy routinely relies on markets to evaluate risk and allocate resources. While the failure of firms is more common in other industries, failures caused by excessive risk taking rarely impose losses of the magnitude absorbed by insured depositories during the late 1970s to early 1990s.

The simplest way to induce increased market discipline would be to reduce the safety net coverage of bank liabilities, especially deposits. However, experience in the United States and around the world suggests that the absence of de jure deposit insurance does not necessarily

imply the absence of de facto deposit insurance.[1] Government policy makers often come under intense political pressure after a bank fails to cover the losses that would otherwise be borne by depositors, and most often policy makers succumb to this pressure. Moreover, market participants will demand risk premiums that reflect only the losses they are likely to bear in case of a bank failure. To the extent that markets rationally anticipate ex post provision of deposit insurance, they will reduce required risk premiums and provide less discipline over bank risk taking.[2]

Another way of inducing increased market discipline would be to reduce the exposure of the safety net to losses by requiring banks to maintain higher levels of equity capital in proportion to their risk exposure. One problem with this approach is that of measuring a bank's risk exposure. Richard Spillenkothen, the director of bank supervision and regulation at the Federal Reserve Board states in SR Letter *SR 99–18 (SUP)*, "Simple ratios—including risk-based capital ratios—and traditional rules of thumb no longer suffice in assessing the overall capital adequacy of many banking organizations."[3] His letter calls for individual banks to develop their own procedures for evaluating their risk exposure and capital adequacy. The problem with the existing risk-based capital (RBC) rules is not only that they rely on inaccurate risk measures but also that systematic errors in the RBC standards distort banks' portfolio allocations. D. S. Jones (1998) shows how banks are using new tools for measuring and managing credit risk to remove assets that are overweighted by the RBC standards from their balance sheet and increase investment in asset categories that are underweighted by the standards. In principle, the regulators could use the same risk measurement tools to reduce a bank's risk exposure. The problem with trying to do so is that the accuracy of the tools in predicting large losses is difficult to verify and the banks with the greatest incentive to underestimate their risk exposure are those that are likely to be of greatest supervisory concern.

Given the potential problems with supervisory discipline and reducing the safety net coverage of many bank liabilities, attention has recently begun to turn to the possible use of bank-issued subordinated notes and debentures (SND) as a way of providing market discipline. SND is junior to all the claims of all other liability holders on a bank's assets. SND thus provides a cushion to absorb losses at failed banks that could reduce the losses borne by the safety net. Furthermore, because SND is the most junior claim, the observed risk premiums on SND issued to unaffiliated parties may provide an upper bound on the market's estimate of the risk exposure of other claims, including deposits. Buyers of SND are less likely to receive ex post government bailouts because buyers are generally among the more sophisticated and more diversified market participants. In addition, interest payments on subordinated debt are tax

deductible, unlike dividend payments on equity issues, which reduces the relative cost of issuing subordinated debt.

Many banks, including most of the largest banks, already voluntarily issue SND to reduce the costs of meeting existing supervisory capital standards.[4] Thus for SND to make an additional contribution to the disciplining bank's risk exposure, some change or set of changes is required in the treatment of SND under the capital regulations. Among the possible changes are (1) changing the capital standards to require higher capital levels and allowing SND to meet a larger portion of the requirements, (2) requiring some banks or bank holding companies (BHCs) to issue SND, (3) changing the set of contract terms required to qualify as an SND issue for supervisory purposes, and (4) changing the regulatory response to the issuance and pricing of SND. Which, if any, of these changes would be desirable ultimately depends on the goal or goals of government supervision of banks' safety and soundness and the expected contribution of SND in attaining the goals.

This chapter considers several ways in which the role of SND may be expanded to assist in the attainment of supervisory goals—in particular, how SND may be used to help attain one of two supervisory goals: minimizing losses to the safety net and reducing the probability of bank failure. One purpose of the analysis is to emphasize the importance of setting a goal and determining the role of SND in contributing to that goal before structuring an SND plan.

The other purpose is to highlight the ongoing role for bank supervision in any SND plan. Any regulation that imposes a cost on a firm will stimulate avoidance activity by the firm (Kane 1977). Any binding SND requirement will, by definition, impose costs on banks and, thus, be subject to avoidance by banks. For an SND plan to be effective for any period of time, it must be incorporated into a system that includes, at a minimum, continuing oversight of banks and SND regulations by the supervisors.

This chapter provides a brief discussion of the supervisory goals, discusses the ways in which SND may provide discipline, describes the role of SND in the current capital regulations, and presents several other ways of structuring SND to help accomplish other supervisory goals.

SUPERVISORY GOALS

Bank safety-and-soundness regulation is generally thought to contribute to two social goals: reducing the probability of banks failing and minimizing the cost of bank failures to the Federal Deposit Insurance Corporation (FDIC). The goal of reducing the probability of bank failure is important to the extent that such failures result in systemic risk.[5] Bank failures may have such an impact, for example, through their impact on

depositor confidence in other banks and their impact on the efficiency of the payments system.[6]

Minimizing the cost of bank failures to the FDIC may be important for a variety of reasons. The cost to the FDIC of resolving failed banks has historically been borne by surviving banks and, thus, constitutes a transfer from the more prudent and luckier banks to the less prudent and less lucky banks. However, if the losses to the FDIC ever exceed the premiums paid by surviving banks, the losses would be borne by the taxpayers. The effect of FDIC-mediated transfers from prudent banks and a taxpayer to less-prudent banks is to encourage greater risk exposure by banks. An increase in banks' riskiness is socially undesirable if an increase in the bank failure rate is socially costly. Such a subsidy to risk taking may also have the effect of encouraging banks to invest in projects whose social rate of return fails to provide adequate compensation for their risk.

Although regulatory goals are often described in terms of preventing failures and protecting the FDIC, another important regulatory goal is that of minimizing the cost of regulation. Any binding restriction will impose costs on banks, by definition, and banks will seek to avoid these costs. Moreover, to the extent that banks are unable to avoid regulations that raise their costs above those of nonbank financial firms, the regulations may merely result in activities being forced out of the banking sector. The problem with the shifting of many types of activities outside banks is that the same concerns that currently apply to banks would apply to the nonbank providers of financial services if regulatory costs drove banks out of business. This is not to say that the regulators should avoid imposing any additional costs on banks. Policies designed to reduce the FDIC subsidy to risk taking will raise the costs of taking risk from the government to the private sector by design. However, regulations that impose costs beyond the minimum needed to achieve regulatory goals may be counterproductive.

HOW SND MAY CONTRIBUTE TO THE GOALS

SND may contribute to the goal of reducing FDIC losses to the extent that it substitutes for funding sources that would otherwise be protected by the safety net. If bank losses in excess of equity are held constant, any increase in SND is likely to result in a decrease in expected losses caused by bank failure. However, if deposit insurance premiums are not sufficiently risk sensitive, any shifting of risk from the safety net to SND holders is likely to raise banks' costs of obtaining funds.

SND may also contribute to the regulatory goals by discouraging banks from taking excessive risk.[7] SND requirements may discourage risk taking by imposing increased direct discipline by SND investors,

derived discipline as a result of other private parties using the pricing signals from SND, and derived discipline as a result of supervisors using the pricing signals from SND.

SND exercises direct discipline by raising the bank's cost of funds, thereby reducing or eliminating the gains that may accrue to equity holders from increased risk exposure. The extent to which SND exercises direct discipline depends on the extent to which it makes a bank's cost of funds more sensitive to its risk exposure. Since SND issues may change a bank's cost of funds only when the debt is repriced, a requirement that banks regularly reprice its SND is essential to obtaining this discipline. Furthermore, the effect of SND on a bank's cost of funds depends on the extent to which SND reduces the risks borne by the safety net.[8] Thus, banks may seek to avoid direct discipline by reducing the amount of SND they issue.

A second way in which an SND proposal may help discipline banks' risk exposure is through actions taken by other private parties that do not hold SND but monitor SND rates to help determine banks' risk exposure. Many banks already issue SND, and market participants may observe the rate paid on these issues. Thus, a new regulation encouraging SND issuance would not necessarily provide derived discipline through other private parties. Nevertheless, an SND proposal may stimulate additional derived discipline in a variety of ways. First, more banks may become subject to this derived discipline to the extent that the plan induces more banks to issue SND. Second, if the plan reduces the cost to private parties of obtaining SND prices, it may encourage greater use of SND prices. Timely SND prices are currently costly to obtain from investment banks which may discourage some potential users from obtaining the information. Third, the plan may encourage private parties to place greater weight on SND yields by setting regulatory benchmarks for these yields. Private participants are at risk in dealing with a financially weakened bank only if the regulators impose restrictions on or close the bank. Thus, market participants are more likely to use a risk measure if they know that the regulators are using that measure. An example of this is the market's recent emphasis on RBC ratios. The RBC measures contain serious flaws as risk measures, but they have been good measures of the likelihood that the regulators will sanction a bank. Therefore, banks face significant market pressures not only to remain in compliance with the RBC regulations but also to exceed the standard comfortably so that the odds of future regulatory intervention are minimized.

The third way in which an SND proposal may help achieve the goals is through derived regulatory discipline resulting from regulators incorporating SND rates into their evaluation of the risk exposure of a bank. The regulators could include information from the SND market in a va-

riety of ways, ranging from using SND as an additional source of information, to formal use of the SND rates as a trigger for some supervisory action. Examples of possible regulatory responses to high SND rates include increased frequency of examination, or triggers for prompt corrective action, requiring banks paying high rates to shrink and requiring banks that cannot issue SND to be closed.

THE ROLE OF SND IN EXISTING CAPITAL REGULATIONS

The role of SND in capital-adequacy rules has been established by the Basle Supervisor's Accord on capital adequacy. The Basle accord establishes restrictions on the extent to which SND is incorporated into capital ratios. Furthermore, to qualify for inclusion, SND must have an original maturity of at least five years, and during the last five years prior to maturity the debt must be discounted at 20 percent per year for capital-adequacy purposes.[9]

If the intent of incorporating SND into the capital requirements is to provide enhanced direct market discipline then corporate finance theory suggests that the Basle accord treatment of SND is fatally flawed. The corporate finance literature recognizes that debt issues made by nonfinancial firms (i.e., firms lacking a government safety net) may also create moral hazard. After debt has been issued, equity holders may have an incentive to take greater risk if the risky project matures before the debt must be repaid. In this case, the equity holders may reap the rewards of a gamble without being required to pay a higher risk premium on the debt if the project succeeds, and debt holders still share in the losses if the project fails. Equity holders do not always, or even usually, benefit from their firm's taking large risks. The potential transfer from a firm's creditors is less than the expected returns from operating the firm prudently. However, for firms near insolvency, the expected gains to shareholders from taking on excessive risk may exceed the small, expected earnings from continuing to operate prudently.

The potential moral hazard problem for banks is especially severe because of the short-term nature of their assets. Bank managers may change a bank's risk exposure very substantially over relatively short periods. Thus studies by Charles Calomiris and Charles Kahn (1991) and Mark Flannery (1994) suggest that the debt designed to reduce a bank's moral hazard risk should have a very short maturity, such as debt that must be redeemed upon demand. In their models, demandable debt discourages excessive risk taking by forcing banks that increase their risk exposure to either pay higher risk premiums or be liquidated before their gamble matures. An implication of their analysis is that requiring banks to issue debt with a minimum original maturity of five years is that such

debt is more likely to exacerbate the moral hazard problem than it is to reduce it.

SND could supply additional discipline by providing a signal about the riskiness of the issuer. The minimum maturity and discounting of SND suggests that the framers of the Basle Accord were not looking for signals for the primary-issue market. Further, the accord is not designed to promote discipline by other private parties or supervisors derived from the pricing of a banking organization's SND. The accord does nothing to require reliable secondary market signals. SND need not be issued in a form that is publicly tradable. Indeed, the accord permits SND to be held by affiliated parties that may not want the yield on the SND to reflect the underlying riskiness of the issuer.

Thus, SND issued in compliance with the Basle Accord is not designed to enhance market or regulatory discipline and likely would have the effect of encouraging additional risk exposure. What, then, is the role of SND in the Basle accord? Paragraph 23 of the accord explains the restrictions on SND:

> The Committee is agreed that subordinated term debt instruments have significant deficiencies as constituents of capital in view of their fixed maturity and inability to absorb losses except in a liquidation. These deficiencies justify an additional restriction on the amount of such debt capital which is eligible for inclusion within the capital base.

This passage suggests that the Basle Committee evaluated SND in terms of its impact on a supervisor's ability to prevent a distressed bank from failing. SND holders cannot be forced to absorb losses unless the bank is closed. Furthermore, the requirement that SND must be redeemed at maturity may place additional pressure on distressed banks. This passage suggests that SND may have been included as an element of capital only because it provides some protection to government deposit insurers at potentially significantly lower total cost to banks than an equal amount of equity.

Even if one accepts that the appropriate regulatory goal is to minimize a bank's probability of failure, the structuring of SND under the Basle accord may not support the achievement of that goal. The problem with the Basle approach is that minimizing the probability that a distressed bank will fail is not necessarily the same as minimizing the overall probability that a bank will fail. The overall probability that a bank will fail is equal to the probability that the firm will become financially distressed multiplied by the probability that the firm will fail if it becomes distressed. The restrictions on SND in the accord may increase the probability of failure if the increased incentives to take risks arising from the restrictions on SND maturity outweigh the benefits of helping distressed

banks remain in operation. Similarly, the existing restrictions on SND may increase the expected losses to the deposit insurer to the extent that they encourage banks to take additional risk. This increase in expected losses would reduce and possibly eliminate the benefits to the deposit insurer from the banks issuing SND.

SND PROPOSALS TO ACHIEVE PUBLIC POLICY GOALS

SND may impose little direct discipline and may even encourage bank risk taking under the current capital-adequacy guidelines because current SND requirements are designed to avoid imposing discipline on distressed banks. This section focuses on designing SND to accomplish specific regulatory goals[10]: the issues involved in using SND to contribute to the goal of minimizing FDIC losses and the issues involved in structuring an SND proposal to contribute to the more ambitious goal of minimizing the probability of a bank's failing. Both discussions consider the ability of an SND proposal to contribute to the goal either through direct discipline or through derived discipline through supervisory use of the risk signals from SND.[11]

Minimize Safety Net Losses

If the primary goal of an SND plan is to minimize safety net losses, the key is to close banks before they incur losses in excess of their uninsured liabilities and equity capital. SND may help by providing a larger base of uninsured liabilities and by providing a market evaluation of the solvency of banks.

Loss Absorption

One way of trying to achieve the goal of minimizing safety net losses is to expand the amount of uninsured, uncollateralized liabilities issued by a bank. The FDIC Improvement Act (FDICIA) encourages supervisors to force prompt recapitalization or close banks when the book value of a bank's equity is equal to or less than 2 percent of total assets. If banks could always be closed before the book value of their equity dropped below 2 percent and the book value of the bank's equity always equaled the market value, bank creditors, including the FDIC, would never suffer any losses. In practice, since neither condition is likely to be met, the exposure of the safety net may be reduced by having some liability that is junior to deposits.[12] This role could be fulfilled by an increase in the equity capital requirement for banks if the minimum level of equity required for failure also increased.[13] However, supervisors may be willing to set higher requirements if SND is allowed because SND is a less costly source of funding after tax for banks than is equity.

Any uncollateralized bank liability that is junior to deposits may reduce the exposure of the safety net to losses. All nondeposit liabilities were made junior to bank deposits by the 1993 passage of the Omnibus Budget Reconciliation Act; therefore, increases in any of these could reduce losses to the safety net.[14] However, if a bank should become financially distressed, these other liabilities may be withdrawn at maturity, or, if they remain in the bank, their holders may successfully demand collateral. In either case, the holders of these liabilities may not be exposed to losses if a bank is observed to be financially distressed prior to failure. In contrast, SND holders may be prevented from escaping loss after a bank becomes distressed. The supervisors may use their power to define the terms of qualifying SND to restrict the ability of distressed banks to redeem SND and prohibit SND investors from receiving collateral.

The requirements for an SND plan designed merely to provide a larger cushion to absorb losses are minimal. The regulators must require a sufficient amount of total capital, including SND, so that expected losses in excess of total capital are minimal, and distressed banks must not be allowed to redeem the SND before failure. For example, the U.S. Shadow Financial Regulatory Committee advocated, in policy statement 126, raising the required risk-based total capital ratio to at least 11 percent for a bank to be classified as well capitalized and to at least 9 percent to be classified as adequately capitalized.[15]

One potential weakness of such an SND plan is that banks may partially avoid the consequences of such a plan by exploiting any inaccuracies in the way in which the plan measures risk for the purposes of setting minimum SND requirements. Indeed, such an SND plan would face exactly the same problem that supervisors currently face in measuring risk for capital-adequacy purposes. Spillenkothen's position, described in the introduction, indicates that existing measures are inadequate and, given the increasing complexity of banks, supervisors need help from the bank's internal models. Yet supervisory reliance on internal models implies a continuing need for supervisory oversight of banks to prevent those with the greatest incentive to take additional risk from providing misleading information about their capital requirements.

The use of SND merely to absorb losses also fails to provide supervisors with help in enforcing timely resolution of failing banks. SND assistance may be desirable in part because supervisors must be able to demonstrate the validity of their evaluation to legislative and judicial overseers. Thus, to an important extent, supervisors bear the burden of being able to demonstrate that the value of a bank's assets has declined sufficiently to meet the legal tests for closure. In contrast for the market's evaluation, the burden of proof is on banks to prove that they are still viable. If the bank cannot make a convincing case to the market, investors

will refuse to purchase any new debt securities. Furthermore, senior supervisors sometimes have an incentive to engage in forbearance in the hope that a bank will return to health or at least that the failure can be postponed until the supervisor leaves office.[16] In contrast, potential new investors in SND have an incentive to identify failing banks before they put their money at risk. Moreover, SND holders may demand higher risk premiums to the extent that they rationally expect that supervisors will not close a bank in a timely manner. Thus, banks would be required to bear an additional unnecessary cost to compensate SND holders for the expected costs of supervisory forbearance.

Prompt Closure

SND may assist in minimizing the exposure of the safety net by providing a market evaluation of the net worth of a bank. SND may be designed to help enforce timely closure by requiring that banks frequently demonstrate that unaffiliated investors are still willing to hold a bank's SND. This demonstration could take place by some combination of rolling over outstanding SND issues and allowing SND holders to put the debt back to the bank whenever the holders choose to. If a bank is unable to persuade market participants to hold its SND, the bank is either insolvent or its risks are so large relative to its equity capital that the expected return to SND holders is negative.[17]

While SND may help enforce timely closure in many circumstances, SND holders may not be able to signal the impending insolvency if the closure decision depends on periodic rollover of SND and the bank started suffering losses in the period between rollovers. One way of reducing this problem would be to provide at least some SND holders with a put option so that a signal could be sent as soon as investors observed a bank headed toward insolvency.

While SND holders with a put option would signal an impending insolvency if they could observe the decline in value of a bank's portfolio, under some circumstances SND holders might not observe the decline until it was too late. If a bank suffered sufficiently large losses, the claims of SND holders may become equity-like claims in that the SND claim may be most valuable if the supervisors do not close the bank and the bank undertakes a large gamble. If the gamble succeeds, the bank has adequate funds to repay SND holders; if the gamble is unsuccessful, the FDIC absorbs most of the losses.

The observed market value of a bank's assets may suffer large drops for two reasons: the return process may contain jumps, and the return process of many bank assets is not continuously observable. The term "jump" is used for both positive and negative returns (increases and decreases in prices). An example of such a jump would be a fall in the price of an asset from $100 to $85. If the bank's portfolio consisted solely

of this asset, and the bank funded the position with over $85 of insured deposits, the deposit insurance fund would suffer losses. Thus, even if a bank has a relatively high level of equity and SND, and the bank is closed as soon as it becomes insolvent, the deposit insurer might still be at risk if the return process on the bank's asset allowed large jumps.

Even if asset prices followed a continuous path, the deposit insurer could also be at risk if investors could observe the value of some parts of a bank's portfolio only at discrete intervals. The values of many bank assets are not readily observable because the assets are not traded and information on their status is released only at discrete intervals. Investors can continuously estimate the value of nontraded bank assets, but these estimates may contain significant error during the period between information releases. If investors substantially overestimate the value of a bank's assets between disclosures, the market's estimate of a bank's net worth could change from positive to negative after a disclosure.

The proportion of bank insolvencies where SND holders would never signal the insolvency but rather act like equity holders is unclear. Even if a bank had a nontrivial probability of becoming massively insolvent between observations, the bank would likely have a higher probability of losing just enough to lead investors to refuse to buy the bank's SND. Nevertheless, given the possibility that SND holders might not signal insolvency, bank supervisors would need to retain the discretion to close insolvent banks. The fact that supervisors could face conflicting incentives resulting in forbearance does not imply that supervisors would always engage in forbearance. Thus, in practice, SND should not be regarded as preventing forbearance, but rather as substantially reducing the probability of forbearance.

Minimizing the Probability of Failure

If minimizing the probability of bank failure should be the primary goal of bank supervision, regulation should focus on the total risk of failure. The current risk-based capital regulations arguably attempt to prevent banks from having an unacceptably high risk of failure. However, the risk-based capital standards rely on such crude measures of risk that any given risk-based capital ratio may be associated with a large range of probabilities of failure. SND may contribute to reducing the probability of bank failure directly by imposing market discipline on bank risk taking and through supervisors' use of the pricing signals from SND.

Direct Discipline

The safety net is intended to reduce the probability of bank failures owing to panic and to reduce the cost of closing failed banks. However,

the safety net may also have the perverse effect of increasing the probability of bank failure by subsidizing bank risk taking. The safety net may subsidize risk taking by absorbing part of the losses when a bank fails and, thereby, reduce the extent to which more risky banks must compensate creditors for their increased risk. An SND plan may contribute to reducing the safety net subsidy and, thus, making the owners of more risky banks pay for their increased risk exposure. If the SND plan eliminates the safety net subsidy, it may reduce the probability of bank failure to that which would be observed absent the safety net.

If SND is to reduce the probability of failure by providing direct discipline, three weaknesses in SND as structured under the current Basle accord must be addressed: (1) the SND may be issued to affiliated parties that valued the debt not on a stand-alone basis but rather as a part of its total investment in the bank, (2) the SND need not be repriced at frequent intervals to reflect changes in a bank's risk exposure, and (3) often banks are not closed until losses substantially exceed the combined sum of their equity and SND.

The problem of affiliated parties owning SND is conceptually the easiest to solve: simply ban such ownership. Some practical problems may arise with such a ban; for example, defining affiliated parties and preventing affiliated parties from indirectly investing in the SND. However, the practical problems do not appear to be insurmountable.

The pricing of SND may be made more sensitive to changes in a bank's risk exposure in a variety of ways. One way would be to require that a bank roll over its outstanding SND frequently. However, frequent rollover could impose higher costs in the form of the investment banking fees needed to issue the debt. One way of avoiding these fees would be to require banks to issue SND that paid a floating rate based on the riskiness of the bank. For example, the rate paid on SND could fluctuate with the bank's credit rating.[18]

Conceptually, the most difficult issue may be setting minimum requirements for outstanding SND sufficiently high to ensure that banks rarely fail with losses in excess of the market value of their equity and SND. A plan to use SND to promote direct discipline is in many respects like a plan to have SND merely reduce expected losses to the safety net. The primary difference is that, if SND is to promote direct discipline, the debt must be subject to frequent repricing so that banks bear the cost (or receive the benefit) from changes in their risk exposure. The similarity of the two plans suggests that banks may seek to minimize direct discipline in the same way they may minimize the extent to which SND holders absorb losses—by exploiting any inaccuracies in the regulatory risk measure. This suggests a continuing important role for supervisors in monitoring banks' risk level and the adequacy of their outstanding SND to absorb losses. Paradoxically, one of the keys to making SND

direct discipline more effective in reducing the overall probability of failure may be to enforce early-closure rules to minimize the probability that losses will exceed equity plus SND. Ideally, banks could be monitored continuously and closed whenever the observed market value of the equity reached some (non-negative) threshold.

Derived Supervisory Discipline

A limitation of direct discipline directed toward reducing the probability of failure is that such discipline is unlikely to reduce a bank's probability of failure below that which would exist in the absence of a safety net. If the supervisory goal is to reduce the probability of failure below that which would exist in a free market, the marginal cost of increasing risk exposure to banks must exceed that which would be provided by uninsured creditors.

One way to increase the marginal cost of additional risk above that which would be set by the market absent the safety net and regulation would be for supervisors to impose penalties on banks based on the adjusted yield observed on their SND. For example, the yield on banks' SND could be compared with the average yield on publicly traded debt issued by nonbank corporations in each of the various bond-rating classes.[19] Banks could be required to maintain a yield no greater than that observed on A-rated bonds which, based on historical failure rates for firms, implies less than a 1 percent probability of failing within one year according to several studies summarized by Edward Altman (1998). Banks whose SND was observed to have yields in excess of this rate would be subject to supervisory actions designed to force them to reduce their risk exposure.

The use of SND yields focuses on an individual bank's overall probability of failure and not merely on the probability that they will fail when they become financially distressed. SND used in this manner need not be vulnerable to existing forms of regulatory arbitrage. A bank would not be able to reduce the risk premium on its SND substantially merely by altering its portfolio in ways that improve its RBC ratio but does not reduce its overall risk. If a bank wanted to avoid being disciplined based on SND yields, it would need to reduce the observed yield on its debt.

Banks could be expected to attempt to reduce the observed yield on their SND. One way of reducing the observed yield would be to misrepresent the true riskiness of the bank. However, banks already have an incentive to deceive market participants, and banks are subject to a number of regulations that limit their ability to mislead, most notably Securities and Exchange Commission (SEC) disclosure requirements for publicly traded securities. Banks may also seek to reduce the observed yield by compensating investors in other ways or having the debt pur-

chased by affiliated parties. Banks that tried to reduce their observed SND rates sufficiently to place them in a higher rating category (for example, to move the rate paid by firms rated Baa2 to the rate paid by firms rated A2) would probably be discovered in the United States.[20] Moreover, if discovered, the bank would probably incur additional supervisory sanctions.[21]

One possible problem with using SND yields to lower the overall probability of failure is that, depending on how it is implemented, it may be too effective. SND yields, after proper adjustment for pricing factors other than credit risk, are likely to be more closely linked to banks' probabilities of failure than are the risk-based capital requirements. Thus, setting the acceptable maximum adjusted yield on SND may be more important to the distribution of risk within the financial system. If SND yields are used to require banks to be less risky than is optimal, banks would not be supporting some desirable opportunities for economic growth. Conversely, if banks are allowed to be too risky, they may fail at rates that are privately, but not necessarily, socially optimal, especially if they are allowed to become so risky that the deposit insurer is subject to potentially significant losses.

Although a theoretical model could be developed to help estimate an optimal probability of failure for banks, both the form of the model and the specific parameters used in the analysis would almost surely be subject to large errors. As an alternative, the failure probabilities for large banks prior to deposit insurance could be used as rough measures of the optimal failure rate. However, even assuming that observed failure rates during that time period were optimal, that would not necessarily imply that these rates are optimal for current large banks or for banks in the future given the ongoing changes to the financial system.

CONCLUSION

Interest in the use of SND to reduce losses to the FDIC and discipline bank risk taking has grown since it was discussed in the early 1980s by the FDIC (1983), George Benston et al. (1986), and P. M. Horvitz (1986). While SND may be attractive in the abstract as a mechanism for providing discipline, in practice the way in which SND is used should reflect the goals of the plan. If the goal is merely to have SND absorb losses, the frequency with which the debt is repriced is unimportant; however, if the goal is to have SND exercise direct discipline, frequent repricing is desirable. Similarly, if the goal of the plan is to use direct discipline, the amount of debt issued is important; if the goal is to use pricing signals from the debt, the amount issued is important only in that it may influence the quality of pricing signals.

Bank regulations may require bank issuance of SND to protect the

safety net or reduce their probability of failure. While such regulations may generate social benefits, they almost surely also entail private costs to bank owners. Thus, banks, especially the financially weakest banks, are likely to seek to avoid the intent of the regulation. Given the likelihood of bank avoidance, any SND plan must provide for some continuing role for bank supervisors. A well-designed SND plan may reduce the importance of government supervisors, but it cannot eliminate their role.

NOTES

The views expressed in this chapter are those of the author and are not necessarily those of the Federal Reserve Bank of Atlanta or the Federal Reserve System. The author thanks Robert Eisenbeis, Frank King, and Joe Sinkey for helpful comments.

1. See Benston (1995) and Kyei (1995) for evidence that the absence of de jure deposit insurance systems does not imply the absence of de facto deposit insurance.

2. See Milhaupt (1999) for an analysis of the Japanese experience with an informal safety net. He concludes that most of the safety net–related problems that arose in Japan were due to the implicit rather than the explicit parts of the safety net.

3. The letter is available on the world wide web at http://www.bog.frb.us/boarddocs/SRLETTERS/1999/SR9918.HTM.

4. See Board of Governors of the Federal Reserve System (1999) for a discussion of the issuance of SND by large banking organizations.

5. See section 4 of Berger, Herring, and Szegö (1995) for a discussion of systemic risk.

6. Whether and to what extent such social costs exist are controversial topics. For example, Benston (1998) argues that the social costs of bank failure are no larger than those associated with many other types of comparably sized nonfinancial firms. A full discussion of the issue of social costs is outside the scope of this chapter. The goal of minimizing the probability of failure is taken as a legitimate goal for the purposes of this chapter because it clearly is a goal of the existing supervisory system.

7. The following analysis of how SND may supply discipline draws heavily on the discussion included in the Board of Governors of the Federal Reserve System (1999).

8. The relationship between outstanding SND and the risk exposure of the bank is important in evaluating the effect of SND on the moral hazard arising from the safety net. Suppose that the regulators could and did guarantee that any bank that became insolvent would be closed before the losses exceeded the bank's outstanding subordinated debt. In this case, the SND holders would bear all of the risk, even if the amount of SND issued equaled only 1 percent of assets. If the rate paid on the SND accurately reflected the risk borne by SND holders, stockholders could not gain from making the bank more risky. Conversely, suppose that the regulators followed a policy of closing banks only after the losses

had exceeded its equity and SND. In this case, other creditors (including the FDIC) would be at risk even if SND equaled 20 percent of assets.

9. See paragraph D.ii.(e) of Annex 1 of the Basle accord for a discussion of the limits on subordinated debt.

10. An overview of the various plans to use SND to impose additional discipline is provided by the Board of Governors of the Federal Reserve System (1999).

11. As noted previously, an SND proposal may also contribute through derived discipline from private parties. However, the extent to which derived discipline would be an effective check is almost impossible to determine ex ante.

12. Moreover, the value of a bank's portfolio may be substantially greater if the bank is kept in operation (going concern value) than if it is liquidated or sold to another bank. In part, the value of a bank as a going concern arises because of the asymmetric information between the existing management and potential buyers of the bank. See Berger, King, and O'Brien (1991).

13. Levonian (1999) shows that SND will be no more effective in discouraging banks from taking excessive risk than a comparable amount of equity, even if the rate on SND is continuously repriced to reflect the bank's risk. However, Levonian's model assumes that a bank could credibly commit to pay a market rate regardless of the size of the bank's losses. If this condition were not satisfied then SND investors might ration the bank as it became insolvent and, thus, prompt supervisors to act earlier than they otherwise would.

14. For a discussion of depositor preference, see Osterberg (1996). In addition, the Federal Deposit Insurance Corporation Improvement Act (FDICIA) of 1991 generally requires the FDIC to resolve banks in the way that imposes the least cost on the FDIC. This provision is widely understood to require that the FDIC generally not provide deposit insurance in excess of the de jure limit of $100,000. The FDICIA's requirements for least-cost resolution and its implementation are discussed by Benston and Kaufman (1997).

15. Shadow Financial Regulatory Committee Statement 156 goes further to advocate that subordinated debt be allowed as an unrestricted substitute for equity and that larger banks be required to issue some fraction of their capital requirements in the form of subordinated debt. Shadow Committee Statement 126 may be found in the *Journal of Financial Services Research*, December 1996 Supplement. Statement 126 may be found on the world wide web at http://www.aei.org/shdw/shdw.htm.

16. See Kane (1997) for a discussion of supervisory incentive conflicts.

17. Variations on this approach are discussed by Keehn (1988), Cooper and Fraser (1988), Wall (1989), and Evanoff (1993).

18. Some observers, such as Shadow Financial Regulatory Committee in Statement 156, have expressed concern that the regulatory use of ratings may subvert the rating process. If the regulators take the ratings at face value, firms will buy ratings to satisfy the regulators even if the ratings have no credibility in the debt market. That concern is relevant to some uses of ratings but does not necessarily apply to using ratings to reprice SND. An important consideration for investors in SND would be the extent to which they believed that the agency rating the SND would change ratings if the firm became riskier. If investors believed that such ratings changes would be made, they will demand a lower risk premium

at issuance than if they did not believe that such changes would occur because the repricing clause would be more valuable. Furthermore, banks that choose rating agencies that did not provide timely ratings changes would be signaling that they valued the lack of timely changes which would further increase the premium that investors would demand.

19. Calomiris (1999) proposes a variation on such a requirement designed to discipline the risk taking of banks in emerging markets.

20. Bond markets in some other countries are significantly less liquid and efficient than U.S. markets which raises the possibility that banks in some countries could cause larger reduction in observed SND rates. Whether such a reduction is possible, however, is a topic that is outside the scope of this chapter.

21. For a more complete discussion of these issues, see Board of Governors of the Federal Reserve System (1999).

REFERENCES

Altman, Edward. "The Importance and Subtlety of Credit Rating Migration." *Journal of Banking and Finance* 22 (October 1998): 1231–47.

Benston, George. *Regulating Financial Markets: A Critique and Some Proposals*. London: Institute of Economic Affairs, 1998.

———. "Safety Nets and Moral Hazard in Banking" In *Financial Stability in a Changing Environment*, edited by Kuniho Sawamoto, Senata Nakajima, and Hiroo Taguchi, 320–77. New York: St. Martin's Press, 1995.

Benston, George, and George Kaufman. "FDICIA After Five Years: A Review and Evaluation." Federal Reserve Bank of Chicago. Working paper series 97–1, June 1997.

Benston, George, R. A. Eisenbeis, P. M. Horvitz, E. Kane, and G. C. Kaufman. *Perspectives on Safe and Sound Banking*. Cambridge: MIT Press, 1986.

Berger, Allen, R. J. Herring, and G. P. Szegö. "The Role of Capital in Financial Institutions." *Journal of Banking and Finance* 19 (June 1995): 393–430.

Berger, Allen, Kathleen King, and James O'Brien. "The Limitations of Market Value Accounting and a More Realistic Alternative." *Journal of Banking and Finance* 15 (September 1991): 753–83.

Board of Governors of the Federal Reserve System. "Using Subordinated Debt as an Instrument of Market Discipline." Staff Studies, Washington, D.C., 1999.

Calomiris, Charles. "Building an Incentive-compatible Safety Net." *Journal of Banking and Finance* 23 (October 1999): 1499–1519.

Calomiris, Charles, and Charles Kahn. "The Role of Demandable Debt in Structuring Optimal Banking Arrangements." *American Economic Review* 81 (June 1991): 497–513.

Cooper, K., and D. R. Fraser. "The Rising Cost of Bank Failures: A Proposed Solution." *Journal of Retail Banking* 10 (Fall 1988): 5–12.

Evanoff, D. "Preferred Sources of Market Discipline." *Yale Journal on Regulation* 10 (1993): 347–67.

Federal Deposit Insurance Corporation (FDIC). "Deposit Insurance in a Changing Environment: A Study of the Current System of Deposit Insurance Pur-

suant to Section 712 of the Garn-St. Germain Depository Act Institution Act of 1982." A Report to Congress on Deposit Insurance. Washington, D.C.: U.S. Government Printing Office, 1983.

Flannery, Mark. "Debt Maturity and the Deadweight Cost of Leverage: Optimally Financing Banking Firms." *American Economic Review* 84 (March 1994): 320–31.

Horvitz, P. M. "Subordinated Debt Is Key to New Bank Capital Requirement." *American Banker*, December 1986, 31.

Jones, D. S. "Emerging Problems with the Basle Accord: Regulatory Capital Arbitrage and Related Issues." Paper presented at a conference on Credit Risk Modeling and the Regulatory Implications, Bank of England, London, September 1998.

Kane, Edward. "Ethical Foundations of Financial Regulation." *Journal of Financial Services Research* 12 (August 1997): 51–74.

———. "Good Intentions and Unintended Evil: The Case Against Selective Credit Allocation." *Journal of Money, Credit, and Banking* 9 (February 1977): 55–69.

Keehn, S. "Banking on the Balance Powers and the Safety Net: A Proposal." Federal Reserve Bank of Chicago, 1988.

Kyei, Alexander. "Deposit Protection Arrangements: A Survey." International Monetary Fund. Working paper no. W/95/134, 1995.

Levonian, Mark. "Using Subordinated Debt to Enhance Market Discipline in Banking." Mimeograph, Federal Reserve Bank of San Francisco, 1999.

Milhaupt, Curtis J. "Japan's Experience with Deposit Insurance and Failing Banks: Implications for Financial Regulatory Design." *Monetary and Economic Studies* 17 (August 1999): 21–46.

Osterberg, William P. "The Impact of Depositor Preference Laws." *Economic Review* (Federal Reserve Bank of Cleveland) 3 (1996): 2–11.

Stern, Gary H. "A Response to Critics of Market Discipline." *The Region* (Federal Reserve Bank of Minneapolis) 13 (September 1999): 2–6.

Wall, Larry D. "A Plan for Reducing Future Deposit Insurance Losses: Putable Subordinated Debt." *Economic Review* (Federal Reserve Bank of Atlanta) (July/August 1989): 2–17.

8

Market Discipline for Banks: A Historical Review

Charles G. Leathers and J. Patrick Raines

INTRODUCTION

A requisite condition for achieving efficiency in all types of market transactions is a form of money that provides a safe and efficient means of payments. In addition, macroeconomic stability requires a supply of money that contributes to sustained high levels of employment and output, price stability, and a satisfactory rate of economic growth. In a rapidly changing institutional environment, how can banks as money-creating institutions balance their innovational searches for profit-maximizing organizational structures and products with the social need for a money that is safe, efficient, and optimally supplied?

Certainly, this is not a new question. In 1840 American free-banking advocate Richard Hildreth (1968, 95) wrote that there were two important questions in banking: What system of banking will be most advantageous to the public and how can banks be rendered most profitable to the stockholders? Hildreth's answer to both was for the government to allow free competition in banking. Similarly, modern free-banking advocates argue that greater reliance on "market discipline" to regulate banks is the best way to deal with modern problems of inflation and financial instability, and to meet the challenges presented by financial innovations that affect the means of payments.

Some proponents of market discipline claim that central banks acting as monetary authorities would not be needed if governments observed a strictly laissez-faire policy toward the provision of all financial services.

They predict the natural emergence of private arrangements to ensure that monetary services can be safely and efficiently left to competitive private enterprise. For example, Lawrence White claimed that replacing "a state monopoly central bank" with the provision of monetary services by free market institutions would prevent the type of inflation and deflation periods that were caused by "unbridled flat money" under the central bank during the 1970s and 1980s (1989, 1–2). White rejected both "rules" and "discretion" as being the proper regulator of the money supply, arguing instead that a free market approach to banking automatically constrains the money supply (2–3).

In that extreme form, market discipline means total reliance upon competitive market forces imposing losses and ultimately failure on suppliers that do not operate efficiently. In contrast, the traditional view has been that the banking system must be largely insulated from market discipline. Beyond the question of whether private monies can provide a universally accepted means of payment, there is the need for optimality and stability of supply. Even in nonbanking sectors, where it is widely accepted that the social interest can be served by the regulating force of market competition, no theory of competitive markets promises market stability. At best, the static Marshallian theory of perfectly competitive markets only ensures that in the "long run" market price and quantity will move to an equilibrium that maximizes net consumer welfare (maximizes the combined consumer/producer surpluses). Of greater relevance is the Schumpeterian theory of dynamic competition in which innovational shocks exert positive long-run effects but create instability in the short run. Significantly, financial innovations play a large a role in Schumpeterian dynamics (see Minsky 1990).

Historical Experiences

Nonetheless, the theoretical literature on free or laissez-faire banking and arguments for its potential applicability in the present time continue to grow (see Selgin and White 1994). Some advocates of free banking argue that its viability has been demonstrated by historical experiences. According to White, the Scottish experience with free banking in the eighteenth and nineteenth centuries provides "a vindication of free banking in theory and in practice and a rehabilitation of the advocates of free banking" (1984, ix). Larry Sechrest asserts, "In many writer's minds, the theoretical case for free banking has been intimately tied to the alleged success in Scotland" (1993, 82). The American experience with free banking before the Civil War traditionally has been interpreted as demonstrating the need for a central bank and rather extensive regulations of commercial banking. Free-banking advocates, however, claim that the

traditional view ignored the successes and incorrectly viewed the failures as endemic to free banking.

This chapter briefly reviews the theory of free banking to identify the institutional features of a system in which market forces are supposed to (1) ensure that banks operate with safety for depositors, (2) provide a stable and efficient universal system of payments, and (3) achieve macroeconomic goals of price stability, a high and stable employment level, and a satisfactory rate of economic growth. The Scottish and American experiences with free banking are outlined. In both cases, banks issued notes that circulated as the major form of currency. There was, however, a third case of less-regulated banks that engaged in deposit banking and did not issue bank notes. In the late 1800s and early 1900s, the New York state banking laws allowed trust companies to operate as commercial banks without having to meet the same regulations. The experiences of those trusts are reviewed, and the dangers of insufficient regulations in more modern times are illuminated.

INSTITUTIONAL FEATURES OF FREE BANKING

George Selgin and Lawrence White conceded, in 1994, that identifying "the likely institutional arrangements of a laissez faire monetary regime requires imaginative speculation. Trying to assess the desirability of the hypothesized institutions only compounds the speculation" (1718). White described free banking as "the system under which there are no political restrictions on the business of issuing paper currency convertible into full-bodied coin" (1984, 1). Sechrest offered a more complete list of the conditions necessary for free or laissez-faire banking, including (1) no central monetary authority; (2) unrestricted freedom of individual private banks to issue bank notes as well as demand deposits; (3) banks free to pursue whatever policies they find advantageous in issuing liabilities and holding asset portfolios, subject only to the general legal prohibition against fraud or breach of contract; (4) unrestricted entry into the banking business, and banks free to open or close branches; and (5) a complete absence of all of the following: interest controls on loans and securities, restrictions on investment in any particular industry, government deposit insurance, minimum capital or reserve requirements, and restrictions on the kinds of activities banks can undertake, such as investment banking (1993, 3).

The "Invisible Hand" in Free-Banking Theory

How is Adam Smith's famous "invisible hand" supposed to work under a system of free banking? If banks are free to issue their own notes,

what assurance is there that those notes will circulate as currency—or that an optimal supply of money will be provided?

As suggested in White's depiction of free banking as involving paper banknotes convertible into "full-bodied coins," free-banking theories usually require some sort of commodity monetary standard. In that regard, they are basically following Adam Smith's discussion of Scottish banknotes in *Wealth of Nations* in which banknotes substituted for specie and were convertible upon demand for gold or silver (Smith 1976, 292). In Smith's view, banknotes were a social improvement because they substituted a less costly "instrument of commerce" for a "very expensive one" (292). People accept notes because they are confident the notes can be redeemed at any time for specie.

The core thesis of market discipline–free banking advocates is that depositors are sufficiently rational; they have sufficient information to know which banks offer safety for their depositors and holders of notes and which do not. Banks falling into the latter category will quickly fail. Bankers are rational enough to know that depositors will withdraw funds if the banks are perceived to be unsafe. Competition for depositors and the need to keep notes in circulation force each bank to operate within a safe zone relative to the amount of risk that depositors and note holders are willing to assume. Banks that are willing to take greater risk on the asset side will have to reward depositors with higher interest rates or lose deposited funds.

An optimal supply of money is ensured under the law of reflux, or the principle of adverse clearings. The general theory of free banking holds that the convertibility of inside money (notes or deposits issued by banks) into outside money (specie) restrains the supply of currency and deposits to optimal levels. The original version of this argument is found in the works of Adam Smith and John Fullarton (see Skaggs 1991, 457). With the existence of a clearinghouse arrangement, all banks agree to accept notes issued by other banks. The principle of adverse clearings predicts that banks will quickly return other banks' notes to be redeemed in specie. It is impossible to oversupply paper currency and create monetary inflation unless all banks act in concert.

THE FREE-BANKING EXPERIENCE IN SCOTLAND

Much of this theory is based on the institutional system that evolved in Scotland in the 1700s and early 1800s. We begin this discussion with a brief review of the institutional developments in Scottish banking from its beginning in 1695 to 1845, the period within which free banking in Scotland began and ended.

Scottish Banking: 1695–1845

The development of banking in Scotland began in 1695 when the Bank of Scotland was created by an act of the Scottish Parliament. The bank was a public corporation, with a provision requiring that the shares be freely bought and sold at the going market price (although two-thirds of the shares had to be held in Scotland). It was granted a twenty-one-year legal monopoly on banking and the right of note issue. Stockholders were given limited liability, and the dividends on bank stock were free of any taxation during that twenty-one-year period. With headquarters in Edinburgh, the bank opened branches in four Scottish cities.

In contrast to the Bank of England, the Bank of Scotland did not act as the government's financial agent and had no connection with the management of the public debt. On the contrary, lending to the state was forbidden. It was intended to be a purely commercial bank, providing secured loans to merchants and noblemen and discounting commercial bills. While it began accepting deposits (paying no interest), the real basis for its extended business in the early years was the issuing of notes in making loans and advances on discounted bills (Checkland 1975, 31).

Almost immediately, the Bank of Scotland faced an attack from the Darien Company, a Scottish trading company that had intended to engage in banking operations and opposed the chartering the Bank of Scotland. By issuing its own notes, Darien acquired large quantities of the Bank of Scotland's notes which it presented for redemption in specie, creating a liquidity crisis for the new bank. The Bank of Scotland's efforts to gain support from London failed because the Bank of England's own financial difficulties forced it to suspend payments partially in May 1696. The Bank of Scotland managed to survive by a partial call on subscribed capital and by calling in loans. By August 1697, the Darien Company's own financial difficulties forced it to cease the attack (33–35). One consequence of the attack was the closure of the branches the Bank of Scotland had established in Glasgow, Aberdeen, Dundee, and Montrose.

Until 1704 the Bank of Scotland issued notes only in large denominations (five-pound notes were the smallest). In 1704 it began issuing one-pound notes, a move that opened the way for a greater extension of the note issue and the beginning of the displacement of coins in smaller transactions. In December 1704, the bank was forced to suspend payments because of a specie shortage in England and Scotland caused by the war with France. When rumors circulated in Scotland that the government was going to raise the monetary value of specie, people rushed to change their notes for specie. In May 1705, payment on notes was resumed (38). In 1715 the bank again had to suspend specie payments for eight months as a result of the Jacobite rebellion. During that crisis and its aftermath, the bank's twenty-one-year monopoly of corporate

banking in Scotland ended, but the bank seems to have made no effort to gain its renewal (47–48).

In 1727 the Royal Bank of Scotland, also located in Edinburgh, was chartered by an act of the British Parliament. The Bank of Scotland, known as the Old Bank, had vigorously sought through political means to prevent the creation of the second public bank. The Royal Bank immediately launched an attack against the Bank of Scotland in the hopes of either destroying it or forcing an amalgamation on terms favorable to the new bank. It began to exchange its notes for large quantities of the Bank of Scotland's notes and presented those notes for redemption in specie. For several years, the two banks engaged in a note "duel." At one point, the Bank of Scotland suspended payments, called in loans, made a 10 percent call on stockholders, and even closed for several weeks in 1728. Its notes continued to circulate at face value even during the suspension. After a note holder won a suit against the bank for failing to honor the promise given on the face of its notes, the Bank of Scotland began to insert an "option clause" on its printed notes, with the option being a six-month delay with an annual interest rate of 5 percent. While the act that created the Bank of Scotland had provided "summary diligence" in redeeming its notes in specie on demand, that provision did not extend to other banks. Opposition to option clauses led the British Parliament to pass an act in 1765 that made summary diligence enforceable for all banknotes and prohibited option clauses.

Two banking innovations occurred during the note duel of 1728. The Bank of Scotland began actively to solicit deposits by offering interest on the balances. The Royal Bank developed a more flexible method of lending in a cash advance, the forerunner of the overdraft. The Bank of Scotland had required that an approved loan be taken fully in notes. Under the cash advance, a line of credit would be approved, with the merchant taking only that part which was needed at the moment, thereby minimizing the interest cost on loans (63). Adam Smith gave special praise to this banking innovation in his *Wealth of Nations* (1976, 299).

Each of the Edinburgh banks formed partnerships to create new banks in Glasgow to promote circulation of their notes (White 1984, 28). Those banks, which began issuing their own notes, were able to survive despite note duels launched by the two Edinburgh banks. Another new bank which opened in Aberdeen in 1747 was excessive in issuing notes, and by 1753 it had been drained of its specie and forced to close.

A third Edinburgh bank emerged when the British Linen Company, which was started to promote the linen trade as wholesalers, began issuing non–interest-bearing banknotes, payable on demand. The company, which started the first successful branch banking, expanded so vigorously that it had the largest circulation of banknotes by 1845. Its

charter, however, could be reviewed at any time after its initial thirty years, rendering it vulnerable to political attacks from rival banks. In 1784 the company petitioned the government for a permanent charter to allow it to operate as a public bank. Political pressure from the Bank of Scotland and the Royal Bank prevented any such charter from being granted (Checkland 1975, 150–51). Finally, in 1813, British Linen was granted a charter with limited liability for its stockholders.

According to White, free banking in Scotland really began in 1765, although the meaning of "free" was highly qualified (1984, 30). A number of small private and provincial banks entered the industry in the late 1750s and 1760s. Some of the new banks issued notes in small denominations (in fractions of a pound). After being petitioned by Scots, the British Parliament prohibited the issuance of notes denominated less than one pound in Scotland in the same act that prohibited option clauses. While that act imposed the two regulations, both of which met with Adam Smith's strong approval, the concept of "free banking" was instituted as the right of note issue was made universal.

After their early efforts at "note dueling" failed, the Bank of Scotland and the Royal Bank began routinely to accept each other's notes to be returned for redemption in specie. The motive was economic self-interest since that arrangement made banknotes more acceptable to the public. In the 1770s, the Bank of Scotland instituted the Scotland note exchange. All notes were accepted at par and redeemed through a twice-weekly exchange of notes. Membership in the exchange became recognized by all banks as a "valuable brand-name capital asset" (White 1984, 31). In 1772 the Ayr Bank failed after issuing notes on bad credit. Since other banks held few of its notes, its failure had little negative effect on the Scottish banking system. To bolster public confidence in banknotes, attract depositors, and put their own notes in wider circulation, the Bank of Scotland and the Royal Bank advertised that they would accept the notes of the defunct bank (32). There was little risk involved since the unlimited liability of the Ayr Bank's 241 shareholders forced them to bear all the losses. Claims of creditors and note holders were eventually paid in full.

In 1810 the Scottish banking system was still dominated by the three Edinburgh banks. The Bank of Scotland again had opened branches, which by 1810 numbered twenty. The Royal Bank had no branches but developed correspondent relationships with provincial banking companies. The number of Scottish banks had reached its all-time high of thirty-seven, but the provincial banks exhibited a firm life cycle associated with the limited opportunities for large-scale banking in small market areas. According to S. G. Checkland, those banks were governed by a kind of logic curve (1975). In response to a local need, a new bank would be launched with a good deal of optimism. Based on a note issue, it would

have little difficulty in becoming established and would flourish for a time, reach a certain size, and then stagnate, falling behind the needs of the growing community, though usually continuing to be profitable for the partners. A new bank would then be launched, which would go through the same cycle. The limitations on provincial banking included management inadequacy (local banks became content with a modest scale of trading and relatively safe profits) and a lack of sufficient capital because it was not sought on a large scale. Such banks also needed an Edinburgh connection (Checkland 1975, 175–77).

Some scholars argue that free banking in Scotland actually existed only during the era of joint-stock banking, which began in 1810. The term "joint-stock banking" perhaps needs clarification. Stockholders of the three "chartered" Edinburgh banks—the Bank of Scotland, the Royal Bank, and (after 1813) the British Linen Bank—were granted limited liability. A number of provincial banks had been organized as joint-stock banks, but their charters were terminable after twenty-one years. The new joint-stock banks that emerged after 1810 were different by virtue of being larger in capitalization, number of stockholders, and branch activity (283). In actuality, these joint-stock companies were partnerships with hundreds of partners since the stockholders were not granted limited liability (378).

In 1830 the Scottish banking system consisted of the two "public" banks (the Bank of Scotland and the Royal Bank), the British Linen Company, two new joint-stock banks with national branches, and the provincial banks, a total of thirty-six separate banking enterprises. Only the two public banks had any considerable capital until the new joint-stock banks began. Apart from a suggestion in 1825–1826 that one-pound bank notes be dropped, which was successfully opposed in Scotland, the government made no effort to alter or control the Scottish banking system and continued to insist on the conditions of free banking. At the same time, market forces were at work, which led to the standardization of types (319–20). Between 1831 and 1850, there was a large turnover of banking concerns. Seventeen banks were begun but thirty-six were either closed or taken over (371). The joint-stock companies surpassed the public banks as the dominant element in the system, with nearly 60 percent of paid-up capital and accounting for over two-thirds of the Scottish note issues (377).

The free banking era in Scotland came to an end in 1844–1845, when the British Parliament imposed control on the increase of banknotes by Scottish banks. The nineteen Scottish note-issuing banks were allowed to continue issuing their individual notes, but any new Scottish bank would have to gain the cooperation of the Bank of England to provide notes that the bank could then issue (456–57).

A Successful Experience with Market Discipline?

According to White, Scotland achieved "success with laissez faire banking," achieving "remarkable monetary stability" without a central bank or monetary policy, and with virtually no political regulation (1984, 23). Because Scottish banks were less affected by periods of "commercial distress," Scottish industry seemed to have been less affected than industry in England (44). White interpreted the entry of the British Linen Company into banking as an illustration of the freedom of entry under the free-banking system (29) and the failure of the Ayr Bank as an illustration of the effectiveness of market discipline (30).

White's interpretation of the Scottish free-banking experience as representing a positive case for modern free banking has been viewed favorably by a number of free-banking advocates. Unquestionably, the Scottish banking system did function *reasonably well* relative to other banking systems of the time. But the real issue is whether it demonstrated an effective reliance on market discipline. That devolves into two related questions. Did the Scottish free-banking system really represent laissez-faire banking, void of any centralized system and regulation? Did the Scottish banking system really perform as effectively as suggested by White?

A Centralized System

While the institutionalized and unified Scottish "note circle" has been viewed as providing an automatic control over excessive issuance of banknotes through the very rapid return of notes to offending banks, it was not a sufficient condition for stability. Rather, the Bank of Scotland and the Royal Bank informally provided central bank services and discipline over the other Scottish banks. Both public banks made redemption demands with large quantities of notes to control banking behavior (Checkland 1975, 126–27). The Bank of Scotland in particular pressured provincial banks and especially those in the lesser burghs to restrict note issues. It would agree to accept a bank's notes only if that bank agreed to be reasonable in issuing its notes. On those that did not, the Bank of Scotland made sudden demands for redemption of large quantities of notes (75). While it left the policing of the system largely to the Bank of Scotland, the Royal Bank assumed the equally important central banking role of providing credits to and holding balances for other banks (145).

The Scottish banking system was centralized in yet another way: through a heavy dependency upon the Bank of England for liquidity needs. Scottish banks held little specie reserves and quickly sent any excess gold to London. This was possible because, although notes were legally redeemable in specie upon demand, Scottish banks had several

ways of obstructing redemption. "It is plain from the formidable range of devices for forcing notes into circulation that the holding of bank notes by Scotsmen was not merely a 'psychological' preference, made possible by literacy and enlightenment" (85). By the late 1700s, Scottish banks had developed several means of maximizing note issues; for example, by putting pressure on firms that borrowed from them to push the circulation of their notes, and by minimizing the specie they paid out (185). Checkland describes the Scottish system as "one of continuous partial suspension of cash payments" (185), which "contributed greatly to Scottish banking success" (186). The public banks usually took up the notes of insolvent banks to avoid any threat to public acceptability of banknotes in general (187). As we noted earlier, there was little risk involved because of the unlimited liability of owners.

Scottish banks learned early on to depend on London and, in particular, on the Bank of England for liquidity (193; see also 432). That took the form of holding government securities as assets that could be sold quickly, creating credits on their London correspondents (194). Thus, the pattern had become in a real sense a centralized one, as Adam Smith had recognized in 1776 in his *Wealth of Nations*.

Stability and Optimality in Operations

Scottish banking in the period from 1745 to 1772 faced two familiar challenges. One was an administrative need to learn how to organize banks so they would be profitable for the owners. The second was a policy need to develop an understanding of the effects of the banking system on the economy, and vice versa. A natural harmony of interest was not necessarily forthcoming. "Because the game was a competitive one, and often fiercely so, bankers in their search for profitable business might place the economy, and their own part in it, in jeopardy. . . . Forming new institutions and adopting new practices in a fully competitive situation was risky and often ruthless business" (Checkland 1975, 92; see also 416).

A fundamental question about market discipline is whether the market is perfectly competitive or oligopolistic. While theoretical arguments of efficiency can be made from competitive market models, it is difficult to make a case that competition in oligopolistic markets tends to maximize efficiency. That is important because the Scottish banks exhibited a definite tendency toward an oligopolistic market structure. While economies were not sufficient to allow a natural monopoly situation to develop, they were substantial enough that small banks were squeezed out by broadly branched bank companies (White 1984, 35–36). A characteristic of oligopoly is that it encourages collusion rather than competition, and there is evidence of such behavior on part of the Scottish banks. During

the financial boom of 1836, the Scottish bank in conclave agreed to raise the lending rate to 5 percent and to increase the borrowing rate by a half-percent. In so doing, they were acting "in the hope that the present understanding may continue and that no change may be made without mutual notice" (quoted in Checkland 1975, 411).

The claim of stability in Scottish banking is challenged by the large turnover in the industry. Of the 109 banking firms that began operating before 1845, only 20 were still operating in 1845. Nineteen of those issued notes, and nine had entered the industry rather recently. By 1810 Scottish banks had to be as concerned about sudden withdrawals of deposits as about runs on their notes (Checkland 1975, 187). In the heyday of Scottish free banking, 1831–1845, the weaknesses of the provincial banks were exposed by successive financial crises, and the banks were either taken over by larger banks or closed. Checkland described the establishment of new banks as in part "the children of the speculative urge" (1975, 412) and credited the Scottish banks, especially those in Western Scotland, with contributing to the "speculative excesses" of the boom of 1825 by "over-generous credit extension" (407–8). Even the Bank of Scotland tended to ride with the boom, along with other banks "finding it increasingly difficult to distinguish real business from speculation" (416).

The degree of innovation in bank operations is also in some doubt. Since Adam Smith is often regarded as the original theorist of market discipline, his theory of bank management is quite relevant. He argued that banks should be very cautious in their operations, restricting their loans and advances to short-term commercial loans that are repaid quickly. Free entry into banking was not a sufficient condition in itself to ensure vigorous innovative performance by any of the banks. The cautious management practices followed by Scottish bankers gave rise to several kinds of restraints on banks financing the growth needs of the community. One was the trend toward the greater safety of operating on a relatively modest scale. The other was turning toward investments in government securities (Checkland 1975, 176).

Scottish Free Banking Was Not Laissez-Faire Banking

Scottish free banking was definitely not laissez-faire banking. Three important regulations were in place after 1765: the prohibition on option clauses, the prohibition on small notes, and legal ceiling interest rates. After 1714 Scottish banks usually charged the upper limit of 5 percent, referred to as the "legal rates of interest" (Checkland 1975, 184). In *Wealth of Nations*, Adam Smith had given bankers advice on how to vary their lending and note issuance modestly under normal conditions. As the industrial revolution took hold in the early 1800s and the Scottish economy began experiencing periods of economic expansion that accelerated

into booms, Scottish banks found themselves in a difficult situation. Unable to raise interest rates on loans above legal levels, banks had little incentive to expand their lending. Raising interest rates on deposits to prevent a sudden wave of withdrawals would reduce the margin between the cost of deposits and the rate on loans. At the same time, banks were being pressured by the business community to increase loans, a pressure that Smith warned banks to resist in *Wealth of Nations*. Individual banks, however, found themselves unable to reduce lending because to do so would have negative impacts on the business community. As Checkland noted, a bank would suffer heavy losses "if it so acted to bring the structure down" (1975, 433).

To some extent, this was a problem of legally imposed interest rate ceilings, which also limited competition for deposits (Checkland 1975, 192). At the same time, it was also a problem imposed by the lack of an effective monetary policy. Checkland summed up the situation as follows: "Each bank, therefore, though it might attempt to control lending, was ultimately ineffectual in this, and was forced to increase advances until the system produced crisis, detonated by the failure of some component businesses, and soon threatening all" (433).

A point that has been raised by Sechrest (1993) and by Jack Carr, Sherry Glied, and Frank Mathewson (1989) is particularly noteworthy. The three Edinburgh "chartered" banks enjoyed privileged positions. An especially important one was the limited liability enjoyed by their shareholders while shareholders of all the other banks were subject to unlimited liability. Sechrest correctly observed that unlimited liability was a significant regulatory barrier to entry (1993, 90). He also noted a long-standing government instruction to customs officers to accept only notes of the chartered banks in payment of duties (90). To that we would add Adam Smith's statement that princes could create a certain value to paper money by making taxes payable in that money (Smith 1976, 328).

THE FREE-BANKING EXPERIENCE IN THE UNITED STATES

Economic historians usually date the free-banking era in the United States as beginning in 1838, when New York enacted legislation that permitted granting a bank charter to any group of citizens that could meet a set of legal requirements. Prior to that, bank charters were granted by special act of the state legislature on the basis of a demonstrated need for a new bank and evidence that the applicants were fit persons to operate a bank. Critics alleged that political corruption in the granting of bank charters had resulted in many undercapitalized and poorly managed banks. Although Michigan had enacted free-banking legislation in 1837, that law had serious flaws. Interestingly, New York and Michigan

have been judged by historians as representing the successes of free banking and worst failures of free banking, respectively.

With the New York law providing a model, eighteen states enacted some variation of free-banking legislation before the free-banking era ended with the creation of the National Banking System in 1863 (Rockoff 1975, 3). According to Hugh Rockoff, little or no "free" banking was done in nine of those states. Among the states in which free banking was active, six experienced problems with "wildcat" banking, while three had some of the "soundest" banking of the era (66).

The initial free-banking legislation was a response to the Panic of 1837 and the subsequent economic depression which in length and severity was one of the worst in American history, lasting until 1843 (Myers 1970, 99). Developments in banking and federal treasury policies in the United State during the 1830s were important contributing factors. Between 1830 and 1837, the number of state banks had doubled, and their note expansion had tripled. After President Andrew Jackson vetoed the bill that rechartered the Second U.S. Bank in 1832, treasury deposits in that bank were drawn down. Initially, the treasury funds were transferred to seven banks in Philadelphia, Baltimore, Boston, and New York, six of which were considered to be Jackson's "pet" banks. By 1836 treasury funds were on deposit with thirty-three banks. In part, this was a consequence of Congress's passing an act that restricted deposits in any one bank to no more than three-fourths of that bank's capital.

In 1836 the large federal government surplus was transferred to the states, which drained specie from banks in the northeast, especially in New York. Banks in New York suspended specie payments in May 1837, and banks in other regions followed suit. By October, a regional imbalance had developed. More funds were to be paid out to Northern states than were deposited with Northern banks. While just the opposite was true in the South, funds could not be transferred from the Southern banks because they had suspended specie payments and the U.S. Treasury could not accept their notes. The specie problem was intensified when Jackson issued the Specie Circular in 1836, which required that payments for federal lands be made in specie (Myers 1970, 92–100).

The suspension of specie payments in 1837 and the depression that followed the Panic of 1837 provided the immediate impetus for a general revision of state banking laws that was intended to ensure that banks would follow more conservative policies (Fite and Reese 1965, 258). Bank reform was a major economic issue, but there were very divergent opinions on the appropriate reform measures. When New York enacted free-banking legislation, three different views on banking prevailed. One group, reflecting the Jeffersonian agrarian philosophy, was opposed to all banks. A second group favored no increase in the number of bank charters awarded by state legislatures, that is, a continuation of the status

quo. A third group, the free-banking advocates, wanted "to throw open the business of banking, like all other mercantile business, to free competition" (Hildreth 1968, 109). Despite the efforts of a political coalition of the first two groups, aimed at preventing any easing of the requirements for starting banks, New York's free-banking law was enacted in 1838.

Under that law, any applicant would be granted a charter to open a bank by meeting certain requirements, which included a minimum capital stock of at least $100,000 and the submission of semiannual reports to the state comptroller. Applicants were not required to demonstrate a need for the bank or that they were fit persons to operate a bank. Shares were transferable and shareholders were given limited liability. Banknotes were engraved and printed by the state comptroller. By depositing collateral security in the form of bonds of federal or state governments or mortgages, free banks would receive notes of equal amounts that they could put in circulation through loans or discounting bills. Banks received the interest on the deposited securities as long as their notes were redeemed in specie on demand. If a bank failed to redeem its notes, the trust fund would pay and the deposited securities would be sold (Hildreth 1968, 200–209). Initially, a specie reserve of 12.5 percent for banknotes was imposed, but that requirement was later removed.

In enacting free-banking laws, the primary concern of the states was to maximize the freedom of banking while protecting the note holders against losses in the case of bank failures (Rockoff 1975, 6–7). No protection was provided for either depositors or stockholders (Rolnick and Weber 1983, 1084). In most cases, note holders were given first lien on bank assets if notes were not redeemed.

As was the case with Scottish free banking, whether free banking in the United States was a successful experience with market discipline essentially devolves into two questions: To what extent did the free-banking system comply with the laissez-faire requirements specified by advocates of market discipline and were the experiences with free banking ones of success or failure?

Was American Free Banking Laissez-Faire Banking?

The free-banking era has been described as a "conscious attempt to introduce the principle of laissez faire into banking" (Rockoff 1975, i). Bray Hammond assests that "[f]ree banking was an application of *laissez-faire* to the monetary function" (1957, 573), but Hammond also saw fit to qualify that statement with a quote from a 1849 report by Millard Fillmore, then the comptroller of New York, that "the free-bank system . . . takes its name from the fact that all are *freely* permitted to embark in it who comply with the rules prescribed" (573).

The rules that required banks to have minimum levels of capital stock, to deposit securities with the state agency before they could issue banknotes, and to make regular reports kept the free-banking system from being one of laissez-faire. To enforce those rules, state bank examiners came into existence, and they visited banks without warning to verify their accounts and assets (Myers 1970, 123). Thus, the "free" in free banking meant only that new banks could be started without having to convince legislators that a need for another bank existed. This was a change from a public utility (natural monopoly) concept in which a community need had to be demonstrated as well as the fitness of the owners to operate a bank (Rockoff 1975, 1–2). It was not, however, according to Rockoff, a change to regard banking as ordinary business. The state necessarily became involved not only in ascertaining that minimum capital requirements had been met, but also in accepting and holding the deposited securities and in printing and engraving the banknotes.

Rockoff has noted the possibilities of damage clauses in the form of a provision that authorized the banking authority to assess the bank and pay note holders a certain penalty—the "normal rate of interest"—for the failure of the bank to redeem its notes in specie (1975, 9–10). Such clauses would have effectively provided a type of insurance for note holders similar to deposit insurance, which is incompatible with laissez-faire banking (and which modern advocates of free banking abhor). Generally, free-banking laws provided for double liability of stockholders (Rolnick and Weber 1986, 879). A true laissez-faire approach would have meant unlimited liability of stockholders, but Rockoff has argued that it might have hindered the accumulation of capital in banking, citing the case of Georgia's free-banking law which did provide unlimited liability (1975, 10). In addition, state banking laws that limited branch banking were not affected by the free-banking legislation.

"Wildcat Banking" or Successful "Market Discipline"?

In 1840 R. Hildreth, perhaps the most articulate advocate of free competition in banking during that era, expressed both confidence and realistic expectations about the impact of New York's free-banking law. He declared that the law "has ensured for the system of free banking a fair trial. Nor does its success, or its speedy introduction into the other states, appear to be doubtful" (Hildreth 1968, 113). At the same time, he cautioned against undue optimism:

> That the system of free banking will at once put an end to all fraud or mismanagements, that it will prevent fluctuations in trade, or will introduce a mercantile millennium, it would be ridiculous to imagine. Fraud, mismanagement and fluctuation are incidental to all business transactions. But as free competition in every

other branch of trade has been found beneficial, and has afforded a certain degree of protection against these evils, so free competition in banking must and will be attended with the same results. (113)

In 1848 British economist J. R. McCulloch, a strong advocate of tight regulations on the issuance of banknotes, expressed the view that free banking in America represented the "worst parts of the American banking system" (1938, 187). Hindsight of the entire era of free banking only reinforced that perception. Since the late 1800s, historians have generally viewed the free-banking experience as a failure. Margaret Myers, for example, stated, "The ease of obtaining charters in many states and the inadequate restrictions in many charters were important factors in the unsatisfactory performance of the American banking system during much of the nineteenth century" (1970, 122). She also noted the ineffectiveness of the enforcement of the requirements imposed on free banks. The protection provided for note holders and depositors of free banks was often "more apparent than real; the tales of the bank examiner trotting along the main highway in his buggy from one bank to the next, while an Indian runner raced through the woods bearing the just-counted gold to the next bank on the examiner's list, are probably not completely apocryphal" (123; see also Hammond 1957, 601).

Within a year of the passage of Michigan's free-banking law, "more than forty banks had been set up under its terms. Within two years more than forty were in receivership" (Hammond 1957, 601). Most of the notes of Michigan's wildcat banks ultimately lost all of their value (Rockoff 1975, 17). The free-banking act of 1837 was repealed two years later. Michigan passed a new free-banking act in 1857, which might be interpreted as a demonstration of the recognized successes of free banking in other states. But the experience under the 1837 law certainly gave free banking its first notoriety. Contemporary accounts suggest that Michigan banks monetized state debts by buying bonds with their notes, then disappearing; used kegs of nails and broken glass with layers of coin on top as specie reserves; and engaged in multiple counting of the same specie reserves (Hammond 1957, 601). Rather than limiting the amount of paper currency, free banking meant "in effect, an indefinite and unlimited number of banks" (573). Free banking was "American democracy's choice of a permanent policy of monetary inflation—a policy that assures plenty of funds for all who wish to borrow, prices that rise in the long persistently though haltingly, and a dollar that never ceases for long to shrink in value" (573).

Rockoff contends that the traditional view rests on purely anecdotal evidence of a small number of stories about wildcat banking (1975, ii). Similarly, Rolnick and Weber (1983, 1986) have acknowledged that the popular belief that banking is inherently unstable is based on historical

events of which American free banking is considered to be the worst case. While they have conceded that free banking did have its problems, they also have argued that it was not as chaotic as believed (1983, 1080, 1090). Free-banking experiences provide no compelling evidence of any inherent instability, which Rolnick and Weber define as producing bank runs or panics. Economic shocks caused many banks, including free banks, to fail, but did not lead to bank runs or panics (Rolnick and Weber 1986, 878). On the other hand, data cited by Rockoff (1975) and Rolnick and Weber (1983) show that a high percentage of free banks closed, ranging from a low of 36 percent in New York to a high of 86 percent in Indiana. A smaller percentage failed to redeem their notes at par, ranging from 8 percent in New York to 56 percent in Minnesota (Rolnick and Weber 1983, 1085). Rolnick and Weber concluded that note holders' losses were smaller than many had estimated and that, based on time in circulation, free banks' notes were relatively safe (1983, 1087). Hence, they contend that it is misleading to characterize the overall free-banking experience as a failure of laissez-faire banking. Yet, their argument clearly concedes that the entire banking system was unstable, which favors the traditional view that a central bank was needed.

Rockoff (1975) noted that "wildcat banking" occurred in only some of the free-banking states. By his definition, "wildcat banking" meant not only that banks issued notes that they could not continuously redeem in specie, but also that those banks came into existence as the result of a liberal entry provision under free-banking laws (5). Rockoff attributed the differences in experiences among states under superficially similar free-banking laws to several factors. The most important was that eligible bonds (or other securities such as mortgages) were accepted as collateral for notes at inflated legal values rather than true market values. Wildcat banking generally occurred because where the market values of bonds were less than their par values, banknotes could be issued in larger amounts than were safe. There was also the problem of the link between the deficit-spending policies of states, which affected the supply and quality of bonds, and the volume of banknotes issued by the free banks (Rockoff 1975, 10). In some cases, legislators failed to realize that, by allowing banks to deposit bonds of other states, the issuance of banknotes in their own state was tied to the deficit-spending policies of other states (11). Similarly, Rolnick and Weber found that that decreases in the market values of bonds of Southern states left banks holding those bonds with insufficient reserves to back their notes (1986, 886–87).

The research conducted by Rockoff, Rolnick, Weber, and others helps to explain why free banks in some states were more fragile than free banks in other states, but it offers no evidence that supports the argument that market discipline provides adequate assurance of stability, safety, and optimality in the supply of money. Even if free banks in a

number of states performed no worse than other banks, the system as a whole failed repeatedly. The traditional view that the system needed a central bank remains the only compelling interpretation of the historical experience with free banking in Scotland and the United States.

The Suffolk Banking System

The argument that unregulated banks will not increase the money supply to inflationary levels rests on the belief that private clearinghouses for banknotes provided effective checks in Scotland and in New England from 1825 to 1858 under the Suffolk banking system. In 1824 the Suffolk Bank of Boston formed a coalition with the other Boston banks to create a fund to be used to purchase country banknotes and return them for redemption. Their intent was to eliminate the competition from notes of country banks circulating in the city. Failing to achieve that, the other banks in the coalition suggested that the Suffolk Bank accept deposits of and clear at par all country banknotes that participating banks chose to deposit. Country banks could participate by maintaining permanent non–interest-bearing deposits with Suffolk or another Boston member of the Suffolk system, and additional non–interest-bearing accounts with Suffolk that were sufficient on average to redeem their deposited notes.

Like the Bank of Scotland and the Royal Bank, the Suffolk Bank essentially became a private regional central bank, offering loans to members of the system in addition to providing clearinghouse services. In holding member bank deposits and clearing member banknotes, the Suffolk Bank was able to monitor and influence member banks' activities. The Suffolk Bank essentially became a natural monopolist in clearing banknotes, realizing economies of scale and enhancing its profits through exploiting economies of scope (Rolnick, Smith, and Weber 1998, 114).

The Suffolk Bank's role as a private central bank demonstrated the need for a central bank, but the Suffolk system ended in 1858, which illustrated the unreliability of private arrangement to conduct the public services of a central bank. The natural monopoly interpretation appears validated by the Suffolk Bank's response to the competition created by the chartering of the Bank of Mutual Redemption in 1855. In 1858 the Suffolk Bank announced that it was withdrawing from clearing notes for country banks and did so in 1860 (Rolnick, Smith, and Weber 1998, 111). There appeared to be room for only one clearing bank, which confirms the interpretation of a natural monopoly.

UNREGULATED TRUSTS IN NEW YORK

Finally, we turn to a historical case in which the banks involved did not issue banknotes. In most states in the latter half of the nineteenth

century, trust companies operating as fiduciary institutions chartered by state governments were also allowed to engage in commercial banking. By 1875 the *Bankers' Magazine* was complaining that trust companies in New York were doing banking business without being subject to the restrictions of banking laws (Smith 1928, 331). The trusts had a comparative advantage over both national and state banks in "deposit currency" as they were not subject to reserve requirements and had greater freedom in lending, particularly with reference to real estate (332). In 1889 the *Bankers' Magazine* complained that trusts were dependent on reserves of associated banks while competing with banks for general deposits, and warned that at some point the trusts would prove to be a source of weakness to the banking system (333).

Complaints from banking interests about unfair competition from the trusts increased in the 1890s as their numbers rose and their total deposits and lending expanded rapidly. Trusts actively solicited deposits by paying interest, something the banks did not do. In 1898 the *Commercial & Financial Chronicle* sarcastically observed that the trusts were experiencing "wonderful growth" by offering rates on deposits of up to 5 percent when call loan rates were 1½ percent or less (quoted in Smith 1928, 334). A general incorporation law for trusts enacted in New York in 1887 and amended in 1892 encouraged the growth of trusts by placing them on the same footing as banks with regard to loans and discounts but with no supervision or reserves requirements (337–38). In other states, courts nullified laws that prohibited or limited trusts engaging in banking.

Those who advocate dependency on market competition to regulate banks must recognize that large banks may collude to prevent competition. The response of large banking interests to trusts in New York provides a case example. In the absence of a central bank, banks had to clear their checks on their own. The New York Clearing House Association, organized for the purpose of clearing checks between members, was "dominated by the more conservative and solidly entrenched institutions which were either within the Morgan sphere of influence or the National City Bank sphere of influence or were in substantial accord with those financial powers" (Allen 1935, 120). The management of the Clearing House had the power to dictate terms to the lesser banks in times of crisis. To suddenly deny a bank access to the Clearing House services effectively meant closing that bank (120). Most of the trusts were not members, but many cleared their checks through member banks. The Clearing House management regarded the exemption of trusts from reserve requirements as both unfair and a danger to the banking system. In 1899 it moved to adopt rules requiring that trusts clearing checks through member banks submit to examinations, provide weekly statements, and maintain a cash reserve starting at 5 percent of deposits and

rising to 10–15 percent of deposits by 1904 (Smith 1928, 345–46). The trusts resisted, arguing that most of their deposits were time deposits, whereas banks had largely demand deposits, and thus did not need liquid reserves (347). In 1905 the trusts withdrew from the Clearing House and cleared their checks by messengers.

There is no doubt that trusts played a major role in the Panic of 1907, but historical accounts differ on the nature of that role. According to James G. Smith (1928), the panic was caused by legislation enacted in New York in 1906 that required trusts to maintain 10–15 percent reserves against aggregate deposits. The withdrawal of funds on deposit with the New York central city reserve banks by the trusts to meet the required cash reserves caused a liquidity crisis. As the central city banks lost reserves, they restricted lending, which resulted in a liquidity crisis in the stock market in the spring of 1907 (Smith 1928, 347–48). The tightening of reserves caused the fall panic of 1907 because it had eliminated the elasticity of credit at a time when fall crop-moving demands for funds in the interior occurred. In early 1908, the law was amended to apply reserve requirements only to the trusts' demand deposits. Smith (1928) claimed that not a dollar of deposits in trusts was lost during the panic.

A different interpretation reveals serious weaknesses in the whole banking system, including behavior spawned by the absence of effective regulation which allowed stock market speculators to put banks at risk. Two speculators, F. Augustus Heinze and Charles W. Morris, the latter a notorious crook, gained control over a number of banks and trust companies by "chain banking," which used a variation of "check kiting." Money was borrowed to buy controlling shares in a bank, which would be used as collateral against a loan from that bank to buy controlling shares in another bank, and so on. The less regulated trusts were especially well suited for that operation. In 1907 Heinze and Morris attempted to corner the market in United Copper stock with the support of the Trust Company of America, the Lincoln Trust, and the Knickerbocker Trust. When their attempt was foiled by John D. Rockefeller's Standard Oil group (in revenge for earlier encounters with Heinze's copper dealings), depositors began withdrawing funds from the Mercantile National Bank, which was controlled by Heinze and Morris. While the Clearing House came to the bank's aid, the management publicly announced that Heinze and Morris must be removed from banking. That announcement increased public unease, and the bank was forced to close. Pressure then mounted on the three trusts affiliated with the Heinze-Morris group. The large Knickerbocker Trust Company faced heavy withdrawals of deposits and was forced to close. Subsequently, the Trust Company of America, located on Wall Street, faced a run, as did the Lincoln Trust Company.

J. P. Morgan and his group were reluctant to bring the aid of national

banks to the trusts, viewing the situation as a "trust company" panic to be left to the trusts to resolve collectively. Although Morgan and his group had used the trust companies earlier in a scheme that allowed insurance companies to multiply assets and evade laws that regulated insurance companies, they were ready to allow them to fold as banks. The head of the Rockefeller group's National City Bank convinced Morgan that failure of the large trusts would hurt the national banks (Wheeler 1973, 275). Ultimately, Morgan forced his will on the presidents of the trust companies, and they subscribed to a loan fund of $25 million to save the Trust Company of America (Allen 1935, 112–43; Wheeler 1973, 282). Morgan's decision to protect that institution has been interpreted as one of conniving self-interest. Trust Company of America was holding as collateral against a loan the controlling stock in an iron and steel corporation that Morgan wanted (Wheeler 1973, 278). When Morgan was ultimately able to purchase that stock at a fraction of its market value, public suspicion arose that he had engineered the panic for that purpose.

The events surrounding the Panic of 1907 illustrated how much more complex and interrelated the banking and financial system was in the early 1900s than it was in the eras of free banking in Scotland and the United States. In the aftermath, trust companies became as regulated as banks, and the Federal Reserve Act was passed in 1913 in recognition that the American banking system needed a central monetary authority.

CONCLUSION

There is nothing in the historical experiences of free banking in Scotland and the United States to support modern arguments for market discipline of banks. There is no evidence that free banking provided payments systems that even for those times were stable and efficient. Rather, the traditional interpretations that the problems of banking in the past illustrated the need for a central bank to act as a monetary authority are convincing. Adam Smith remarked that it must be acknowledged that "[t]he commerce and industry of the country . . . cannot be altogether so secure, when they are thus, as it were, suspended upon the Daedalian wings of paper money, as when they travel about upon the solid ground of gold and silver" (1976, 321). The free-banking experiences in Scotland and especially in the United States suggest that those "Daedalian wings" were extremely fragile, patched, and tattered.

The success of the Scottish system had more to do with the informal central banking roles played by the Bank of Scotland and the Royal Bank toward the other Scottish banks and the central banking role played by the Bank of England for all of the Scottish banks. The successes of the free banks in states such as New York had to do with state regulations.

The success of the Suffolk System in New England demonstrated the need for central authority. Despite the optimistic promises of the free bankers, it seems clear that the "Daedalian wings" of modern electronic payments systems must have solid ties to central banks. Banks and the payments system can be disciplined by market forces, but only at a tremendous cost to society. The need is for a system that *prevents* failures rather than one that disciplines with losses those institutions that do fail.

REFERENCES

Allen, Fredrick Lewis. *The Lords of Creation*. New York: Harper & Brothers, 1935.

Carr, Jack, Sherry Glied, and Frank Mathewson. "Unlimited Liability and Free Banking in Scotland: A Note." *Journal of Economic History* (December 1989): 974–78.

Checkland, S. G. *Scottish Banking: A History, 1695–1973*. Glasgow: Collins, 1975.

Cowen, Tyler, and Randall Kroszner. "Scottish Banking Before 1845: A Model for Laissez Faire?" *Journal of Money, Credit, and Banking* (May 1989): 221–31.

Fite, Gilbert C., and Jim E. Reese. *An Economic History of the United States*. Boston: Houghton Mifflin, 1965.

Goodhart, Charles. *The Evolution of Central Banks*. Cambridge, Mass.: MIT Press, 1988.

Hammond, Bray. *Banks and Politics in America*. Princeton, N.J.: Princeton University Press, 1957.

Hildreth, R. *Banks, Banking, and Paper Currencies*. 1840. Reprint, New York: Greenwood Press, 1968.

McCulloch, J. R. *The Literature of Political Economy*. 1848. Reprint, London: Longman, 1938.

Minsky, Hyman P. "Schumpeter: Finance and Evolution." In *Evolving Technology and Market Structure*, edited by A. Heertje and M. Perlman, 51–74. Ann Arbor: University of Michigan Press, 1990.

Myers, Margaret G. *A Financial History of the United States*. New York: Columbia University Press, 1970.

Rockoff, Hugh. *The Free Banking Era: A Re-Examination*. New York: Arno Press, 1975.

Rolnick, A. J., and W. Weber. "Inherent Instability in Banking: The Free Banking Experience." *Cato Journal* (Winter 1986): 877–90.

———."New Evidence on the Free Banking Era." *American Economic Review* 73, no. 5 (1983): 1080–91.

Rolnick, A. J., B. D. Smith, and W. E. Weber. "Lessons from a Laissez-Faire Payments System: The Suffolk Banking System (1825–58)." *Review* (Federal Reserve Bank of St. Louis), May/June 1998, 105–20.

Sechrest, Larry J. *Free Banking*. Westport, Conn.: Quorum Books, 1993.

Selgin, George A., and Lawrence H. White. "How Would the Invisible Hand Handle Money?" *Journal of Economic Literature* (December 1994): 1718–49.

Skaggs, Neil. "John Fullarton's Law of Reflux and Central Bank Policy." *History of Political Economy* (Fall 1991): 457–80.

Smith, Adam. *An Inquiry into the Nature and Causes of the Wealth of Nations*. Reprint, Indianapolis: Liberty Press (Glasgow Edition), 1976.
Smith, James G. *The Development of Trust Companies in the United States*. New York: Henry Holt, 1928.
Wheeler, George. *Pierpont Morgan and Friends*. Englewood Cliffs, N.J.: Prentice-Hall, 1973.
White, Lawrence H. *Competition and Currency*. New York: New York University Press, 1989.
———. *Free Banking in Britain*. Cambridge: Cambridge University Press, 1984.

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Market Discipline and the Corporate Governance of Banks: Theory vs. Evidence

Benton E. Gup

Bank regulators once had a relatively easy task of supervision when banks were small, and banking consisted of accepting short-term deposits and making short-term loans. That is no longer the case. Today, bank regulators must deal with complex global megabanks and new technologies that are rendering government regulation inept and ineffective. They hope that private market regulation, or market discipline, can help them discharge their supervisory responsibilities. This chapter examines market discipline and the extent to which it works. Specifically, it deals with the concept of private market regulation and how it relates to banks; principal agent conflicts; the evidence about the successes and failures of market discipline, as well as the suggested use of subordinated debt; and the requirements for market discipline.

PRIVATE MARKET REGULATION

Private market regulation, or market discipline as it is commonly called, comprises the mechanisms that signal the behavior of firms to holders of debt and equity who, in turn, affect the franchise value of the firm and influence its future behavior. A key feature is that market discipline is expected to influence future behavior. This is in contrast to the use of the term by some bank regulators who focus primarily on the cost of borrowing (Stern 1999).

The franchise value aspect of private market regulation is exemplified

in stock markets, such as the New York Stock Exchange. Stock market prices are considered "efficient" because they reflect all information contained in past stock price movements (weak form of the theory), they reflect the published information (semistrong form of the theory), or they embody all available information (strong form of the theory). The efficiency occurs because the listed firms are relatively transparent, and they are monitored continuously by securities analysts, the media, and investors. Changes in stock prices signal stockholders' reactions to current earnings announcements and expectations of future earnings. Although U.S. stock prices are reasonably efficient, stock market anomalies, such as the weekend effect, the January effect, and others suggest that they are not as efficient as previously thought (Fortune 1991). Nevertheless, institutional investors that hold about 65 percent of domestic stocks do impose some market discipline. Institutional investors and stock market activists played a major role in the corporate shake-ups of Eastman Kodak, General Motors, Sears Roebuck, and International Business Machines in the 1990s (Ip 1998).

In a speech, Federal Reserve Board Chairman Alan Greenspan (1997) examined historical evidence from U.S. banking history and concluded that in the future, as in the past, we need to place greater reliance on private market regulation. No chartered banks in the United States failed until massive fraud brought down the Farmers Exchange Bank in Rhode Island in 1809. Thereafter, a series of macroeconomic shocks—the War of 1812, the depression of 1819–1820, and the Panic of 1837—resulted in large numbers of failures. In the absence of those shocks, the stability of the banking industry reflected private market discipline. With respect to current times, he concluded that rapidly changing technology is rendering much government regulation irrelevant.

According to Wolfgang Artopoeus, the president of the Federal Banking Supervisory Office in Germany,

> In many countries—Germany among them—supervisors have traditionally held the opinion that too much reliance on disclosure is detrimental, since it could cause depositors to react in destabilizing ways and make it more difficult to resolve a bank's difficulties quietly. But as a supervisor's primary task is not getting banks out of trouble but preventing them from getting into difficulties in the first place, it would be counterproductive under today's conditions not to allow the disciplinary forces of the market to assist supervisors to the fullest extent possible in ensuring sound and prudent banking (1997, 383).

Using clearinghouses and exchanges as examples of self-regulation, Greenspan stated that the self-interest of industry participants generates private market regulation (1997). They establish margins and capital requirements to protect the interest of their members. What he failed to

say is that there is continuous monitoring by participants because of their daily transactions. Moreover, their debts are cleared at the end of the day or shortly thereafter. This differs significantly from monitoring that is provided by holders of long-term debts who receive interest payments twice a year.

Debt holders also act in their own self-interest. S. Park and S. Peristani (1998) found that riskier thrifts had to pay higher rates and attracted smaller amounts for uninsured deposits. C. H. Golembe and D. S. Holland wrote that when the market judges a bank to be in dire trouble, market participants may cause a substantial loss of deposits, or cause the bank's stock price to fall, which may result in a change of management or ownership, or even the closing of the bank (1986, 280). While that may be true, the bank was already in "dire trouble" before the market recognized the problem.

Increased emphasis has been placed on market discipline to provide corporate governance for banks. One reason is the widening gaps of knowledge and information between the participants in global financial markets and the regulatory and supervisory authorities (Shirakawa, Okina, and Shiratsuka 1997, 35). Andrew Crockett, general manager of the Bank of International Settlements (BIS), states that regulators are finding it increasingly difficult to keep up with a complex and rapidly changing financial system. They believe that is "useful—perhaps necessary—to get the market itself involved in the regulatory process" (1998). According to William McDonough, president of the Federal Reserve Bank of New York, "[A]s financial institutions and their activities become more complex, diversified, and global in nature, I believe that market discipline will become an even more important ally of the supervisor than it is now" (1998, 9).

Recent federal legislation has placed greater emphasis on the role of market regulation. Provisions of the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA) impose higher capital standards which shift more risk to shareholders. In addition, changes in depositor preference for payoffs puts creditors and uninsured depositors behind insured depositors if a bank is liquidated. The notion that banks should issue more subordinated debt to the public also has been suggested as a means of establishing market discipline. Finally, Gary Stern (1998), president of the Federal Reserve Bank of Minneapolis, favors amending the FDICIA to address the too-big-to-fail issue, to let uninsured depositors know that they would suffer some losses. He argues that this would increase market discipline.

Regulators favor market discipline because it reduces government-directed investment and reduces subsidies and safety nets, along with the moral hazard problems associated with safety nets. Accordingly, in January 1996, New Zealand's Reserve Bank regulators placed greater

reliance on market discipline—increased public disclosure by banks, increased accountability of bank directors and management, and reduced prudential supervision (Brash 1997). While the initial reports of the new approach are encouraging, it should be noted that New Zealand is a small country and seventeen or eighteen of the nineteen banks are foreign owned.[1] Thus, New Zealand's Reserve Bank "free rides" on the home-country bank supervisors. Moreover, there have been no bank failures in several decades. Therefore, without a severe economic downturn or crisis, it is not possible to judge the effectiveness of the market system.

PRINCIPAL AGENT CONFLICTS

Government regulation of banking firms differs substantially from private market relationships (Flannery 1994). Governments (de facto or de jure) have taken a creditor position and bear some of the default risk. It follows that safety and soundness regulations are designed, in part, to protect their creditor position. In addition, governments' primary motivation in regulating banks is to prevent widespread financial market failures. Accordingly, bank regulators examine banks to obtain audit information, regulatory discipline information, and private information about the banks' condition. A. N. Berger and S. M. Davies (1994) found that the private information from CAMEL rating downgrades revealing unfavorable information about the bank condition was substantial. On the other hand, according to Berger, Davies, and Mark Flannery (1998), supervisory assessments of bank performance are much less accurate overall than both debt and equity market assessments in predicting future changes in performance. Finally, J. Peek, E. S. Rosengren, and G. M. B. Tootell (1997) found that confidential supervisory information on bank ratings improved the forecast accuracy of variables critical to the conduct of monetary policy.

In contrast to inside information provided by bank examinations, private market regulation stems from decisions of investors that are reflected in security designs and prices. The motivation of these investors is assumed to be wealth maximization. Flannery (1998) argues that the oversight of banks could be improved if federal supervisors incorporated more market information into their analysis and action plans. The conflicts between principals and agents are discussed below in the context of control mechanisms.

Control Mechanisms

J. Byrd, R. Parrino, and G. Pritsch (1998) identified four types of agency problems and the mechanisms to deal with them. The agency problems

Table 9.1
Control Mechanisms and Conclusions

Mechanism	Conclusion
Stock ownership	Large stock ownership by managers may create problems if they use the control for personal interests
Compensation	Stock options are useful in shifting risk preferences toward those of stockholders
Board of Directors	A strong independent board can limit the divergence of managers from shareholder wealth
Managerial labor market	Effect – managers are marketable
Market for corporate control	Poor decisions that reduce value attract bidders and increase the likelihood that managers will be let go after the firm is acquired. This is less effective if they hold large blocks of stock.
Blockholders and activist investors	Large stockholders have more incentive than small shareholder to monitor management activities
Debt and dividends	Leverage increases the risk of financial distress. It also forces managers to distribute cash instead of investing it in value reducing investments. Dividends reduce internal funds.

Source: Byrd, Parrino, and Prtisch (1998).

are that managers exert less effort than the stockholders expect of them, they have different time horizons, they have different risk preferences, and they misuse corporate assets. A summary of the mechanisms to mitigate agency problems is shown in Table 9.1. Byrd, Parrino, and Pritsch conclude that the best solutions to the agency problem from the stockholder's point of view are to require managers to own stock in the firm, to compensate them in stock or based on accounting performance, and to have access to large amounts of internally generated funds.

A. Agrawal and Charles Knoeber (1996) examined the effectiveness of the seven control mechanisms, shown in Table 9.2, and they reached somewhat different conclusions than those in the Byrd, Parrino, and Pritsch study. They found that the relative importance of the control mechanisms depends on how they are measured and whether they are considered individually or in combination. They found significant statistical relationships between firm performance and insider ownership, outside directors, debt, and corporate control activity when tested using single-mechanism ordinary least squares (OLS) regressions. However, in an expanded OLS, the effect of insider ownership disappeared when all of the mechanisms were used in the regression, and the effects of debt and corporate control were not significant. They argue that these findings are consistent with the optimal use of each of the control mechanisms except outside directors.

Both of these studies considered the ownership structure of the firms

Table 9.2
Control Mechanisms of Two Studies

Byrd, Parrino, and Pritsch (1998)	Agrawal and Knoeber (1996)
Stock ownership	Insider stock ownership
Blockholders and activist investors	Blockholder ownership
	Institutional ownership
Compensation	
Board of Directors	Outside directors
Managerial labor market	Managerial labor market
Market for corporate control	Market for corporate control
Debt and dividends	Debt financing

as key variables. The growth in institutional ownership of stocks parallels the growth of stockholder activism. Since 1990, the share of domestic shares held by institutions has increased from 51 percent to 65 percent (lp 1998). Institutions such as the California Public Retirement System (Calpers) and Teachers Insurance & Annuity Association/College Retirement Equity Funds (TIAA-CREF) have been outspoken shareholder activists. In 1998 Calpers and other major stockholders defeated a Marriott International proposal to create two classes of stock. The headline of a *BusinessWeek* article declared that TIAA-CREF speaks softly and carries a big stick (Byrne 1999). The article documents the role TIAA-CREF played in changing corporate governance policies in General Motors, International Paper, W. R. Grace, Disney, Heinz, and other firms. In another study, W. T. Carleton, J. M. Nelson, and M. S. Weisbach (1998) found that, when TIAA-CREF wanted changes in the policies of selected corporations, they reached agreements with 95 percent of the targeted companies. TIAA-CREF monitors over 2,000 U.S. companies "in which it invests and presses for improved management when appropriate . . . ensuring . . . the highest possible returns."[2] Institutional investors also played an important role in the management shake-ups of Eastman Kodak, General Motors, Sears Roebuck, and IBM.

Although this may be so in the United States for large, publicly traded companies, it might not apply to privately held firms or to firms in other countries. Investors in different countries have different incentives to in-

tervene (Mayer 1998). The dispersed shareholdings in the United Kingdom and United States may not provide sufficient incentives for any one investor to monitor and control the performance of firms. Where there are large dominant shareholders, the returns to active governance are greater.

ARE MARKET CONTROL MECHANISMS EFFECTIVE?

The basic idea is that a lack of competition and transparency may contribute to poor management. The problem of poor management is supposed to be corrected by market discipline, which is provided by debt and equity investors as well as by competitors that affect corporate performance. There is no doubt that markets provide useful information to investors and regulators about traded bank holding companies and their subsidiaries (Flannery 1997). The evidence includes abnormal stock returns, the proportions of stock held by insiders and institutions, and credit ratings. Nevertheless, markets may have little or no impact on management (Weber 1998). Management controls free cash flow (decides types of investments), balancing (financing decisions), information (general management is better informed than market or board), and corporate governance (who is on the board). Along this line, F. S. Mishkin and P. E. Strahan (1999) state that the "free-rider" problem makes it less likely that the securities markets will act to reduce the incentives to commit moral hazard. The free-rider problem occurs when investors who do not incur the costs of collecting information about which securities are under or overvalued can take advantage of (free ride off) the information acquired by others who are monitoring those securities. Accordingly, the free-rider problem hinders the efficient functioning of securities markets because it discourages the costly monitoring and enforcement of restrictive covenants.

Corporate Behavior

On the liability side of the balance sheet, market discipline is supposed to change the access to funds and the risk premiums that banks pay. The changing availability and cost of funds is supposed to affect their ex ante risk behavior. However, there is little evidence that I can find that the market for publicly traded long-term corporate debt is as efficient as the stock market, or that privately placed debt is effective in controlling the behavior of firms. The interest rate of the debt at the time of issuance provides information about the creditworthiness of the issuer at that time. Once the debt is outstanding, a bondholder's indenture may not permit him or her to affect corporate governance as long as the debtor

can pay the interest and the principal payments as required, as well as the other terms of the contract.

The effects of debt on management performance have been addressed by M. C. Jensen and W. H. Meckling (1976), who examined the role of financial contracting in agency problems which arise from decisions that influence the welfare of both the agent and others. This eventually led to an informal incentive-based approach to capital structure that is called the *free cash flow theory*. Free cash flow (FCF) is the excess of that required to fund all projects that have positive net present values. The theory predicts that managers of firms with FCF will expand their firms beyond the size that maximizes shareholder wealth, even when it is not profitable to do so. The key part here is that the expansion is financed in part by increasing debt. Jensen (1988) found support for the FCF theory from the fact that oil industry managers, faced with excess capacity and excess free cash flows, made bad investment decisions outside the oil industry that were detrimental to the stockholders. These poor investments included Mobil's acquisition of Marcor (a retail chain store), Exxon's acquisitions of Reliance Electric (manufacturing) and Vydeck (office equipment), and Atlantic Richfield's acquisition of Anaconda (copper).

Another study examined a firm's choices between privately placed and publicly issued debt (Krishnaswami, Spindt, and Subramaniam, forthcoming). The authors of the study found that firms with greater growth options tend to have higher proportions of private debt, and they argue that they benefit from the monitoring associated with such debt.

The Korean *chaebols* are groups of the largest industrial firms in South Korea. The firms within these groups have cross-guarantees of debt, which may be five or six times their equity. One would expect the inside debt holders to encourage their related firms to manage their funds prudently; however, that was not the case. In 1997 Hanbo Steel, Kia Motors, and other debt-burdened *chaebols* went bankrupt. Similarly, in the United States, most of the firms that go bankrupt have excess debts, and debt holders did not prevent them from going bankrupt.

The buildup of foreign, private, short-term, speculative debt was one of the key factors that contributed to the financial crises in East Asia in 1997 (Indonesia, Malaysia, the Philippines, South Korea, and Thailand) (Stiglitz 1999). Private funds from sophisticated investors, banks, and business concerns continued to flow into the region despite sharply falling returns on assets. Some banks apparently believed that they would be bailed out by their governments or the International Monetary Fund (IMF) if the loans defaulted. Large inflows of credit market funds also preceded the outbreak of the financial crises in Chile in 1982 and Mexico in 1994 (World Bank 1999, 63, 66).

In connection with the crises in Mexico (1994) and Thailand (1997), B. Eichengreen and R. Portes note that both economies had current account

deficits of 8 percent of the gross domestic product (GDP) (1997, 213). In both cases, this was financed by foreign private debt and equity investment. They ask why market forces did not draw back sooner, or more smoothly, before events got out of hand. Their answer was that investors believed incorrectly in the exchange rate peg, and that banks would not be allowed to fail. Both the debt and equity investors were wrong.

Similarly, a report from the World Bank admitted that "it could not have predicted the timing and severity of the crisis" in East Asia (Phillips and Aalund 1999). They failed to recognize the crisis in Indonesia Asia. Part of the problem was that, although they were aware of problems with banks in Indonesia and corruption, the constant praise of the economy's performance contributed to the bank's complacency.

Private market regulation works—to a limited degree. Consider the case of Drexel Burnham Lambert Group, Inc. This firm was best known for its junk bonds which were sold to savings and loan associations and others. In the late 1980s, Drexel was in financial trouble. When it was clear that federal bank regulators would not pressure banks to lend to the distressed holding company, Drexel Burnham Lambert Group filed for Chapter 11 bankruptcy in 1990 (Layne 1990; Trigaux 1990). Other firms were not willing to provide funds to support it.

Distressed Banks

Studies of the distressed banks listed below reveal a common pattern: external market discipline did not keep the banks out of trouble. In the failure of the Bank of New England in 1991, the bank not only failed to report its problems to investors, but managers inside the company bought stock as late as a year before the failure (Litan 1997, 289). These insiders were not aware of the regulator's concerns about the bank, nor did they have any unique insights as to its condition or else they would not have bought the stock. If an insider did not know the condition of the bank before it failed, how can outsiders be expected to know it?

In the case of fifteen distressed Italian banks, when information about a bank's financial condition became known to the public, depositors withdrew their funds (Reedtz 1998). However, there was no ex-ante depositor or interbank market influence to keep the banks from getting into difficulties.

K. A. Kim and P. Limpaphayom (1998) examined Japanese keiretsus, which are industrial conglomerates that include a main bank. The firms are linked together through cross-holdings of shares that allow for mutual monitoring. They found that there was no significant relationship between ownership variables and financial leverage when they are profitable. However, when one of the firms in the group gets into financial trouble, the main bank assumes control and reduces the debt levels. They

do not say what happens when the main bank gets into trouble. This issue was addressed by A. Nagashima who reviewed banking problems in Japan during the 1990s and found that "market checks did not function as they should have" (1997, 210). He explained how banks lent imprudently and concentrated their loans in real estate. Part of the failure of the market to work was due to a lack of transparency and accounting data for the institutions.

Other Banking Studies

Other banking studies provide conflicting evidence about the benefits of market discipline on influencing bank risk. S. Nagarajan and C. W. Sealey (1997) found that reliance on market forces to help alleviate the moral hazard problem inherent in deposit insurance was ineffective in lowering bank risk. One reason for this is that deposit insurance itself shields banks from the full costs of market discipline (Billett, Garfinkel, and O'Neal, 1998). Stated otherwise, deposit insurance has the potential to undermine market discipline. This may be why the U.S. Treasury claims that bank regulation and supervision help provide a substitute for the market discipline removed by deposit insurance (U.S. Treasury 1991, x).

A. Boot and S. Greenbaum (1993) found that, when banks raised funds, the cost of funds was related to the bank's reputation. There were lower costs when the funds were invested in safe assets and higher costs than when they were invested in risky assets. This is consistent with the study made by J. Jagtiani, G. Kaufman, and C. Lemieux (1999), who found that bonds issued by banks and bank holding companies reflected their underlying risk, especially for less capitalized issuers. Jagtiani and Lemieux (1999) found that when the cost of borrowing uninsured debt increased, banks substituted insured deposits as a source of funds. D. M. Ellis and Flannery (1992) examined CD rates paid at large banks and found that CD rates responded to the same information as the stock prices of those banks. These studies all show that markets recognize risk. They do not suggest that market prices influence the behavior of the banks. That issue was addressed by K. S. Demsetz, M. R. Saidenberg, and P. E. Strahan (1997) in a study dealing with franchise value and ownership structure. They defined franchise value as the market value of equity and the book value of liabilities divided by the book value of tangible assets. They found that insider ownership was closely associated with asset risk, suggesting that managerial shareholdings align the interests of managers, while outside block holders controlled risk taking by influencing financial leverage. Banking regulations set the maximum level of banks' financial leverage.

Subordinated Debt

A key issue for bank regulators is to determine what kinds of public intervention are necessary to reinforce the effectiveness of private market regulation (Shirakawa, Okina, and Shiratsuka 1997). One suggestion is to require banks to have subordinated debt in their capital structure. A number of different types of subordinated debt have been suggested to introduce market discipline. Puttable subordinated debt would discourage banks from taking risks because the debt holders would bear most of the consequences of failure, and they would demand compensation commensurate with the bank's risk (Wall 1989). If the debt holders thought that the bank's risk was increasing, they could exercise their put options and demand payment within a certain time period. The bank could issue sell assets or issue new debt to pay the bondholders. The interest rate paid on the new debt would provide information to the regulators about the bank's risk. Small domestic banks could hold a minimum fraction (i.e., 2 percent) of their risky assets in the form of uninsured time deposits at large domestic banks or foreign banks (Calomiris 1999). Large domestic banks must place their subordinated debt in the form of nontradable certificates of deposit with foreign institutions. One of the advantages of using interbank debt is that banks are able to judge each other's creditworthiness better than other creditors.

According to one study, debenture yields over the period from 1983 to 1991 reflected specific risks of the issuing banks (Flannery and Sorescu 1996). In a later paper dealing with capital structure, L. D. Wall and P. P. Peterson (1998) found that, because of the high issuance cost of small issues, bond issues by small banks may not be practical.

J. G. Haubrich (1998) had noted that spread on bank-subordinated debt over Treasuries provides a useful signal to the market but questions how regulators will use that information. Regulators' actions can range from increased scrutiny to closure. As previously noted, debt was not an effective control in the Korean *chaebols*.

Mishkin and Strahan (1999) have suggested that bank regulators announce that there is a strong presumption that the uninsured depositors of a failed institution will not be fully protected, unless that is the lowest cost method of resolution. This announcement creates "constructive ambiguity," meaning that the regulators will apply judgment in the supervisory process. If that is the case, uninsured depositors have a greater incentive to monitor the bank's performance. However, having uninsured depositors monitoring performance is not the same as influencing it. Consider the case of Continental Illinois Bank in 1984. The bank had assets of $41.4 billion when bank regulators took it over. Continental had made energy loans and loans from less-developed countries (LDC loans)

that were fatal to it. The bank was funded largely by uninsured deposits held by large institutions throughout the world. The dollar size of the deposits typically was tens or hundreds of millions of dollars. When there were rumors of problems at the bank, there were "silent runs" on the deposits. Withdrawals reached $8 billion per day, far exceeding the bank's ability to meet the demand (Gup 1998, 53). The bank failed.

Even insured depositors have runs, and such a run was the final blow to the Bank of New England (BNE) in 1991. At the end of 1990, 20 percent of BNE's loans were nonperforming (FDIC 1997, 375). On January 4, 1991, it announced large losses that would render it technically insolvent. On that date, insured depositors withdrew $1 billion, and the Office of the Comptroller of the Currency (OCC) declared the holding company's banking units insolvent and appointed the Federal Deposit Insurance Corporation (FDIC) as receiver.

REQUIREMENTS FOR MARKET DISCIPLINE

The bank regulators want market discipline to supplement their supervisory activities. The following conditions are required for market discipline: action, active money and capital markets and rating agencies, awareness of vulnerabilities, corporate accounting standards, and transparency.

Action

In order to be effective, market discipline requires action from both market participants and bank regulators. The actions of market participants are the conditicio sine qua non for market discipline to be effective. The examples cited previously in this chapter suggest that, with few exceptions, participants have done little to influence the ex ante behavior of firms. The exceptions are large institutional investors (Calpers and TIAA-CREF), who take an active role in corporate governance, and a few stockholder activists. Investors liquidating stocks, bonds, and deposits after a bank is in trouble (e.g., Continental Illinois) is like closing the barn door after the horse is out. The inaction of investors may be due to a lack of transparency or other reasons. Additional research is needed on this topic.

Action also requires the regulators to act to prevent problems. Sometimes they do not, as in the case of the First National Bank of Keystone of West Virginia which had $1.1 billion in assets. It was the largest bank failure since the savings and loan crises, with $515 million or more in assets that were "missing" (Whiteman 1999; Brooks 1999; FDIC News Release 1999). Banking regulators spotted internal control and audit deficiencies as early as 1991, but the bank continued to grow and it was

listed as one of the "best" banks in the United States. It was closed in 1999 when massive fraud was finally uncovered.

According to Gillian Garcia of the IMF, the most prevalent and serious deficiency of market discipline is the inability of bank regulators to close insolvent institutions (Genay 1996). In the extreme case, regulators required the approval of the failed bank's shareholders in order to close it. Nevertheless, a study of the effectiveness of FDIC enforcement actions over the 1978–1998 period revealed that examiner downgrades in CAMEL ratings and the issuance of enforcement actions affected the performance of distressed banks (Curry et al. 1999). Banks changed their operating policies to the extent that they could. Where external factors played a greater role in the condition of banks, enforcement actions had less influence on behavior.

In the United States, the timing of closures is affected by the FDICIA (1991) which requires the FDIC to use the "least cost" method to the insurance fund and "prompt corrective action" (PCA) to resolve bank failures. To prevent losses to the fund, Congress encouraged regulators to close institutions that were likely to fail, even if they had 2 percent tangible capital (Helfer 1999). An FDIC study of bank failures between 1980 and 1992 found that using the PCA standard may have resulted in closing banks that could have been saved. That was not the case for BestBank in Boulder, Colorado, which failed in 1998. Although the bank examiners recommended enforcement actions to be taken to forestall failure, the FDIC's inspector general's report on that bank said that "the supervisory tools that were available to the regulators were not aggressively pursued in a timely or effective manner" (Baranick 1999).

Active Money and Capital Markets and Rating Agencies

One assumption of market discipline is that active money and capital markets and rating agencies may be able to detect problems in advance. The facts, however, do not support this contention. Moody's and Standard and Poor's rating of sovereign debt in Southeast Asia (Thailand, Malaysia, Indonesia, South Korea, and the Philippines) gave no indication that a crisis was on the horizon in 1997 (Marshall, 1998). On the contrary, the Philippines debt was upgraded. Spreads between the debts of the five countries and U.S. Treasury securities fell between mid-1995 and mid-1997.

Awareness of Vulnerabilities

An examination of Russia's unilateral restructuring of GKO (Treasury bill) debt in 1998, as well as the near collapse of the highly leveraged Long-Term Capital Management (LTCM) hedge fund, suggests that nei-

ther private market participants nor bank regulators had a "full understanding of the ever-changing structure and dynamics of international financial markets" (Schinasi 1999).

Corporate Accounting Standards

Traditional accounting data are "backward looking," reflecting historical performance rather than current market values (Jüttner and Gup 1999). Although trading accounts are listed at market value, loan accounts are not. It is the loan accounts—credit risk—that are the root of most bank failures. In very general terms, banking crises are closely associated with macroeconomic shocks that were not foreseen at the time the loans were made. The better run or luckier banks survive the shocks. Thus, existing accounting information provides useful information to determine which banks are the most likely to survive. H. Genay (1998) examined the extent to which the accounting earnings of Japanese banks reflected their actual performance. In the United States, for example, losses are recognized when a loan is charged off. In Japan, loans are only charged off when the debtor is in bankruptcy, and there is no hope for recovery. Similarly, U.S. banks cannot count as part of their BIS capital requirements unrealized gains on securities. In Japan, however, they can count 45 percent of the gains on shares that they hold. The large banks are part of keiretsus, or banking industrial combinations, where groups of companies maintain their ties through cross-holding of shares. Although some of their accounting practices differ from those in the United States, Genay (1998) found that their accounting data provided useful information to stock market participants in the early 1990s; the statistical significance declined in recent years.

One result of globalization is that there is some movement toward internationally uniform accounting standards. The International Accounting Standards Committee (IASC) is examining the relationship between accounting methods in various countries and U.S GAAP standards (Danaher and Harris 1999). The IASC is an independent, private-sector body that represents 142 professional accounting organizations from 103 countries.[3] Even though a large number of foreign companies are registered with the U.S. Securities and Exchange Commission and are listed on U.S. stock exchanges, they usually do not provide U.S. GAAP financial data.

Transparency

Transparency of banks is a term that is widely used but rarely defined. E. Rosengren (1999) defines transparency in terms of information about the performance of the loan portfolio, the extent to which reported cap-

ital reflects economic capital, and a bank's risks and strategies. Rosengren concluded that, while greater transparency reduces the cost of banking problems, it will not prevent them.

The term transparency also refers to the financial statements that are representative of firms' financial positions. However, there are firms that intentionally misstate their condition. Cendant and Bre-X are two examples (Heinzl and Greenberg 1997). Similarly, BestBank of Boulder, Colorado, was listed at no. 1 in the *American Banker* newspaper's listing of the most profitable banks in 1994. Unfortunately, the reported earnings and financial statements did not accurately reflect the true condition of the bank, which was closed in 1998 (Cahill 1998). The near failure of LTCM, the global hedge fund, revealed that the world's leading banks—who are supposed to be experts in assessing credit risk—were willing to extend credit to the "opaque" fund ("Long-term Sickness?" 1998; Weidner 1998).

Equally important, security analysts are under pressure to stifle negative reports about the firms they follow (Woolley and Himelstein 1996; Siconolfi 1998). Thus, the information revealed by analysts may not accurately reflect a firm's true condition. This is one reason why financial analysts, represented by the Association for Investment Management and Research (AIMR), are calling for Global Investment Performance Standards (GIPS) that increase financial transparency providing full disclosure and fair representation of investment performance (AIMR 1999).

Financial technology can affect transparency. The process of securitization has resulted in banks selling some of their least risky assets, and retaining those that are opaque. In addition, the ability to place very large bets that can go bad is not revealed to outside investors until it is too late for most investors to react. Consider the case of Barings, a British bank that speculated on Japanese stocks in a Singapore futures market (Gup 1998, 50–51). In a twenty-eight-day period, a rogue trader bet more than $1 billion on the direction of the Nikkei Index of Japanese stocks, and when he lost, Baring PLC, the London parent holding company, was bankrupt.

Finally, there is the issue of what information should be transparent. Some have suggested the CAMEL reports of bank examiners, as well as information on credit concentrations, internal credit ratings, the adequacy of loan-loss reserves, and other information relevant to investors.

CONCLUSION

Changes in technology, competition from nonbank financial service providers, globalization, and the growth of global megabanks have all eroded the effectiveness of bank supervisors. Because of these changes,

bank regulators hope that market discipline will aid them in their task of bank supervision. This chapter questioned the effectiveness of market discipline. The track record of market discipline examined here suggests that it usually occurs after a significant incident, and that it does little to prevent misbehavior. "Even if private market regulation in the globalized market gains strength and market discipline plays a core role in maintaining stability of the financial system, we cannot say with confidence that systemic risk which shakes the global financial system will never occur" (Shirakawa, Okina and Shiratsuka 1997, 48). When they do occur, large numbers of banks fail. If market discipline means survival of the fittest, it works. If market discipline means controlling behavior, it does not appear to be effective.

According to John Biggs, chairman and CEO of TIAA-CREF, "Whenever you can, you ought to let markets be free. . . . But if you have a structure where there are *incentives to take advantage of the situation*, you know that the market will respond to those incentives" (quoted in Sieberg 1998). Biggs cited the 1933 failure of Missouri State Life Insurance Company, which occurred after the bank that owned it propped itself up by transferring worthless real estate to it in exchange for valuable bonds. Perhaps the key to market discipline is structuring the right incentives. Additional research is needed to determine what those incentives are and how they can be made effective.

NOTES

1. Seventeen banks are 100 percent foreign owned. The ASB Bank is 75 percent foreign owned. Only TSB Bank Limited is 100 percent domestically owned. For a listing of the banks in New Zealand, see http:/rbnz.govt.nz/fin/annex1.htm.

2. "How TIAA-CREF Works for Better Corporate Governance," *Participant* (published by TIAA-CREF), May 1999, 10.

3. For information about the IASC and the current status of international accounting standards, see the IASC web site: www.iasc.org.uk.

REFERENCES

Agrawal, A., and Charles R. Knoeber. "Firm Performance and Mechanisms to Control Agency Problems Between Managers and Shareholders." *Journal of Financial and Quantitative Analysis* 31, no. 3 (September 1996): 377–97.

Artopoeus, W. "Prudential Supervision and Globalization of the Banking Sector: A National Supervisor's View." In *Banking Soundness and Monetary Policy*, edited by C. Enoch and J. H. Green, 378–87. Washington, D.C.: International Monetary Fund, 1997.

Association for Investment Management and Research. "Global Investment Performance Standards." Charlottesville, Va., April 1999.

Baranick, S. "Inspector Says FDIC Blew Chances to Head Off a 1998 Bank Failure." *American Banker*, March 1, 1999, 1–2.

Berger, A. N., and S. M. Davies. "The Information Content of Bank Examinations." In *The Declining Role of Banking*, 615–28. Federal Reserve Bank of Chicago, 1994.

Berger, A. N., S. M. Davies, and M. J. Flannery. "Comparing Market and Supervisory Assessments of Bank Performance: Who Knows What When?" Board of Governors of the Federal Reserve System. Working paper, March 1998.

Billet, M. T., J. A. Garfinkel, and E. S. O'Neal. "The Cost of Market Versus Regulatory Discipline in Banking." *Journal of Financial Economics* 48 (1998): 333–58.

Boot, A., and S. Greenbaum. "Bank Regulation, Reputation, and Rents: Theory and Policy Implications." In *Capital Markets and Financial Intermediation*, edited by C. Mayer and X. Vives. Cambridge: Cambridge University Press, 1993.

Brash, D. T. "Banking Soundness and the Role of the Market." In *Banking Soundness and Monetary Policy*, edited by C. Enoch and J. H. Green, 355–68. Washington, D.C.: International Monetary Fund, 1997.

Brooks, R. "Regulators Failed to Jump on Keystone Problems." *Wall Street Journal*, October 28, 1999, A3, A8.

Byrd, J., R. Parrino, and G. Pritsch. "Stockholder-Manager Conflicts and Firm Value." *Financial Analysts Journal* 54 (May/June 1998):14–30.

Byrne, John A. "The Teddy Roosevelts of Corporate Governance." *Business Week*, May 31, 1999, 75–79.

Cahill, J. B. "Regulators Discover There Is No There at a 'Virtual' Bank." *Wall Street Journal*, September 1, 1998, A1, A6.

Calomiris, C. W. "Building an Incentive-Compatible Safety Net." *Journal of Banking and Finance* 23 (October 1999):1499–1519.

Carleton, W. T., J. M. Nelson, and M. S. Weisbach. "The Influence of Institutions on Corporate Governance Through Private Negotiations: Evidence from TIAA-CREF." *Journal of Finance* 53, no. 4 (August 1998):1335–62.

Crockett, A. "Payment System Change and Global Financial Stability." Paper presented at the 34th Annual Conference on Bank Structure and Competition, Federal Reserve Bank of Chicago, May 7, 1998.

Curry, T. J., J. P. O'Keefe, J. Coburn, and L. Montgomery. "Financially Distressed Banks: How Effective Are Enforcement Actions in the Supervision Process?" *FDIC Banking Review* 12, no. 2 (1999):1–18.

Danaher, M., and T. Harris. "Changing the Rules." *Financial Executive*, March/April 1999, 29–34.

Demsetz, R. S., M. R. Saidenberg, and P. E. Strahan. "Agency Problems and Risk Taking at Banks." Federal Reserve Bank of New York. Research paper no. 9709, March 1997; in *Staff Report*, no. 29, 1997.

Eichengreen, B., and R. Portes. "Managing Financial Crises and Emerging Markets." In *Maintaining Financial Stability in a Global Economy*, 193–225. Federal Reserve Bank of Kansas City, 1997.

Ellis, D. M., and M. J. Flannery. "Does the Debt Market Assess Large Banks' Risk? Time Series Evidence from Money Center CDs." *Journal of Monetary Economics* 30 (1992):481–502.

Federal Deposit Insurance Corporation. *History of the Eighties: Lessons for the Future*, vol. 1. Washington, D.C.: FDIC, 1997.

FDIC News Release. "FDIC Approves Assumption of Insured Local Deposits of First National Bank of Keystone, Keystone, West Virginia," PR-52–99, September 3, 1999.

Flannery, M. J. "Corporate Finance, Market Discipline, and Bank Supervision." In *Bank Structure and Competition*, 313–30. Federal Reserve Bank of Chicago, 1994.

———. "Off-Site Surveillance Systems." In *History of the Eighties: Lessons for the Future*, vol. 2. Washington, D.C.: Federal Deposit Insurance Corporation, 1997.

———. "Using Market Information in Prudential Bank Supervision: A Review of the U.S. Empirical Evidence." *Journal of Money, Credit, and Banking* (August 1998):273–305.

Flannery, M. J., and S. M. Sorescu. "Evidence of Bank Market Discipline in Subordinated Debenture Yields: 1983–1991." *Journal of Finance* (September 1996):1347–77.

Fortune, P. "Stock Market Efficiency: An Autopsy?" *New England Economic Review* (March/April 1991):17–40.

Genay, H. "Assessing the Condition of Japanese Banks: How Informative Are Accounting Earnings?" *Economic Perspectives* (Federal Reserve Bank of Chicago), Fourth Quarter 1998, 12–34.

———. "Lessons for Financial Regulation: An International Perspective." In *Rethinking Bank Regulation: What Should Regulators Do?* Summary of the 32nd Annual Conference on Bank Structure and Competition, Federal Reserve Bank of Chicago, May 1996, 24–27.

Golembe, C. H., and D. S. Holland. *Federal Regulation of Banking, 1986–1987*. Washington, D.C.: Golembe Associates, 1986.

Greenspan, A. "Remarks by Chairman Alan Greenspan at the Annual Conference of the Association of Private Enterprise Education, Arlington, Va." April 12, 1997.

Gup, B. E. *Bank Failures in the Major Trading Countries of the World: Causes and Consequences*. Westport, Conn.: Quorum Books, 1998.

Haubrich, J. G. "Subordinated Debt: Tough Love for Banks?" *Economic Commentary* (Federal Reserve Bank of Cleveland), December 1998.

Heinzl, M., and L. M. Greenberg. "Bre-X Stock Collapses 97% to Pennies as Heavy Trading Swamps Exchange." *Wall Street Journal*, May 7, 1997, A3.

Helfer, R. T. "What Deposit Insurance Can and Cannot Do." *Finance & Development* (International Monetary Fund), March 1999, 22–25.

Ip, G. "As Activists Flex Muscles, Bulls Charge Ahead." *Wall Street Journal*, June 8, 1998, C1.

Jagtiani, J., and C. Lemieux. "Stumbling Blocks to Increasing Market Discipline in the Banking Sector: A Note on Bond Pricing and Funding Strategy Prior to Failure." Federal Reserve Bank of Chicago, Emerging Issues Series (S&R-99–8R), September 1999.

Jagtiani, J., G. Kaufman, and C. Lemieux. "Do Markets Discipline Banks and Bank Holding Companies? Evidence from Debt Pricing." Federal Reserve Bank of Chicago, Emerging Issues Series (S&R-99–3R), June 1999.

Jensen, M. C. "Takeovers: Their Causes and Consequences." *Journal of Economic Perspectives* 2 (1988):21–48.

Jensen, M. C., and W. H. Meckling. "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure." *Journal of Financial Economics* 3 (1976):305–60.

Jüttner, D. J., and B. Gup. "What Basle Forgot." In *International Banking Crises*, edited by B. Gup. Westport Conn.: Quorum Books, 1999.

Kim, K. A., and P. Limpaphayom. "A Test of the Two-Tier Corporate Governance Structure: The Case of Japanese Keiretsu." *Journal of Financial Research* 21, no. 1 (Spring 1998):37, 51.

Krishnaswami, S., P. Spindt, and V. Subramaniam. "Information Asymmetry, Monitoring, and the Placement Structure of Corporate Debt." *Journal of Finance*, forthcoming.

Layne, R. "Banks Crack Drexel Collateral Gridlock." *American Banker*, February 26, 1990, 1.

Litan, R. E. "Institutions and Policies for Maintaining Financial Stability." In *Maintaining Financial Stability in a Global Economy*, 257–97. Federal Reserve Bank of Kansas City, 1997.

"Long-term Sickness?" *The Economist*, October 3, 1998, 81–83.

Marshall, D. "Understanding the Asian Crisis: Systemic Risk as Coordination Failure." *Economic Perspectives* (Federal Reserve Bank of Chicago), Third Quarter 1998, 13–28.

Mayer, C. "Financial Systems and Corporate Governance: A Review of International Evidence." *Journal of Institutional and Theoretical Economics* 154, no. 1 (March 1998): 144–65.

McDonough, W. J. "The Changing Role of Supervision." Federal Reserve Bank of New York, *Annual Report, 1997*, 3–13, 1998.

Mishkin, F. S., and P. E. Strahan. "What Will Technology Do to Financial Structure?" Working paper no. 6892. Cambridge, Mass.: National Bureau of Economic Research, January 1999.

Nagarajan, S., and C. W. Sealey. "Can Delegating Bank Regulation to Market Forces Really Work?" Paper presented at the Eastern Finance Association Meeting, Panama City, Florida, April 17, 1997.

Nagashima, A. "Role of the Central Bank During Problems of Bank Soundness: Japan's Experience." In *Banking Soundness and Monetary Policy*, edited by C. Enoch and J. H. Green, 191–222. Washington, D.C.: International Monetary Fund, 1997.

Park, S., and S. Peristani. "Market Discipline by Thrift Depositors." *Journal of Money, Credit and Banking* (August 1998):347–64.

Peek, J., E. S. Rosengren, and G. M. B. Tootell. "Is Bank Supervision Central to Central Banking?" Boston College, July 15, 1997.

Phillips, M. M., and D. Aalund. "G-7 Duel Looms over Financial Crisis." *Wall Street Journal*, February 17, 1999, A2.

Reedtz, P. M. "Bank Relations and the Perception of a Bank Crisis: A Case Study on Italy." In *Research in Financial Services: Private and Public Policy*, edited by George G. Kaufman, vol. 10, 115–37. Stamford, Conn.: JAI Press, 1998.

Rosengren, E. "Will Greater Disclosure and Transparency Prevent the Next Banking Crisis?" Boston: Kluwer Academic Publishers, forthcoming (1999).

Schinasi, G. "Systemic Aspects of Recent Turbulence in Mature Markets." *Finance and Development* (International Monetary Fund), March 1999, 30–33.

Shirakawa, M., K. Okina, and S. Shiratsuka. *Financial Market Globalization: Present and Future*. Discussion paper 97-E-11. Bank of Japan, Institute for Monetary and Economic Studies, 1997.

Siconolfi, M. "This Securities Analyst Calls It as He Sees It: That's the Problem." *Wall Street Journal*, May 18, 1998, A1, A8.

Sieberg, J. "Market Forces Rule Where Regulators Used To." *American Banker*, August 26, 1998, 1, 22.

Stern, G. H. "Market Discipline as Bank Regulator." *The Region* (Federal Reserve Bank of Minneapolis), June 1998, 2–3.

———. "A Response to Critics of Market Discipline." *The Region* (Federal Reserve Bank of Minneapolis), September 1999, 2–5.

Stiglitz, J. E. "Reforming the Global Financial Architecture: Lessons from Recent Crises." *Journal of Finance* 54 (August 1999): 1508–21.

Trigaux, R. "Regulators Put Drexel on Own in Fast Decision." *American Banker*, February 16, 1990, 1.

United States Department of Treasury. *Modernizing the Financial System: Recommendations for Safer, More Competitive Banks*. Washington, D.C.: February 1991.

Wall, L. D. "A Plan for Reducing Future Deposit Insurance Losses: Putable Subordinated Debt." *Economic Review* (Federal Reserve Bank of Atlanta), August 1989, 2–17.

Wall, L. D., and P. P. Peterson. "The Choice of Capital Instruments by Banking Organizations and their Regulators." Federal Reserve Bank of Atlanta, unpublished paper, May 12, 1998.

Weber, M. "Financial Systems and Corporate Governance: A Review of the International Evidence, Comment." *Journal of Institutional and Theoretical Economics* 154, no. 1 (March 1998):166–69.

Weidner, D. "Some Banks Said to Have Imitated Hedge Funds' Risky Trading Patterns." *American Banker*, October 5, 1998, 1.

Whiteman, L. "Failed Bank's Files Found Buried: 2 Execs Jailed." *American Banker*, October 19, 1999, 1, 2.

Woolley, S., and L. Himelstein. "If You Can't Say Something Nice About a Company . . ." *Business Week*, November 11, 1996, 119.

World Bank. *Global Economic Prospects and the Developing Countries*. Washington, D.C.: World Bank, 1999.

10

Message to Basle: Risk Reduction Rather Than Management

D. Johannes Jüttner

INTRODUCTION

The recent Asian financial crisis, which started with a speculative attack on the Thai baht, subsequently gripped several other East Asian and Latin American countries, Russia, and South Africa during 1997 and 1998. Undaunted by the unfolding of imprudent lending, banks continued to advance funds to highly leveraged speculators, necessitating a Federal Reserve–orchestrated bailout of the hedge fund Long-Term Capital Management (LTCM) in September 1998. At the root of these crises appears to have been primarily a serious breakdown of credit risk management by a significant segment of the global banking system. Consequently, the banking cleanup costs exceeded the damages of previous financial debacles.[1] These financial dislocations revealed some serious flaws in the much touted supervisory framework put into place over the years by the Bank for International Settlements (BIS). *First*, the Basle 1988 Capital Adequacy Requirement addressed credit risk in the loan book as the incidence of loan defaults in the asymmetric-information adverse-selection context. It ignored the possibility of massive foreign currency loan defaults resulting from rapid exchange rate depreciations; that is, a situation in which lenders and borrowers had access to precisely the same information set. That loan defaults may occur in crisis proportions as a result of market (currency or interest rate) risk remained outside the imagination of the BIS and its clientele. *Second*, the BIS framework also failed to align regulatory capital provisions for risks with actual risks

taken by banks; this resulted in regulatory capital arbitrage. *Third*, while huge international capital inflows fueled the Asian economic miracle and capital flow reversals exacerbated the subsequent crisis, academics, global regulators, and lending banks paid virtually no attention to the appalling state of supervision, opaque disclosure, substandard accounting information, widespread cronyism, and corruption in a bank-dominated region. These gaping holes in the global supervisory framework[2] and shortcomings in credit risk assessment were compounded by the sloppy work of ratings agencies.[3] *Fourth*, as commonly happens in the lead-up to a crisis, lenders, borrowers, and policy makers were carried away on a wave of buoyant profit reports, and regulators remained inactive, partly because novel situations breed uncertainty and partly because they were concerned about being branded killjoys.

In response to the global crisis, in particular the blatant failures of proper risk assessment and the supervisory defects in the banking industry, a plethora of reform plans emerged, hailed as building blocks of a new global financial architecture. The proposal of the Basle Committee on Banking Supervision for a new credit risk model has so far received the most detailed attention (BCBS April 1999). As banks are already in the process of implementing this approach to credit risk measurement and management, the question of whether it promises to improve substantially the stability of the global banking and financial system or will lead to further disappointments requires our urgent attention. It is worth recalling that commercial and investment banks as well as other financial institutions have played a pivotal, though not always praiseworthy, role in past financial crises.[4] In this chapter, credit risk models and their shortcomings are discussed, analyzed, and critically assessed. The insights gained provide the basis for the reform proposals delineated in the next section. The approach here is concerned with measures to improve credit risk analysis by reducing this kind of risk *before* it enters the balance sheet of banks.

CREDIT RISK MODELS AND THEIR SHORTCOMINGS

We commence with a brief summary of the essential features of the new credit risk approach, which is modeled on the Value-at-Risk (VaR) framework.[5] It is designed to replace the Basle Accord of 1988. Its basic building block, namely the default mode (DM) and mark-to-model (MTM) approaches to loan valuations, is analyzed, and the features of the discounted contractual cash flow model are evaluated. The usefulness of credit risk models stands and falls with the quality of the credit ratings systems. Our own empirical assessments of ratings agencies do not inspire confidence in their work; ratings migrations are difficult to forecast under crisis conditions. Furthermore, proponents of the application of VaR to credit risk models appear to overlook that credit risk is

a decision variable while market risk is a given parameter. Furthermore, market risk, which is associated with interest rate, exchange rate, and asset price changes, has not been built into the new credit risk model.

Credit Risk Models

What are the distinguishing features of the VaR approach to credit risk modeling? The changes in the value of loans between the end and the beginning of a period that are due to defaults or due to loan revaluations as a result of loans migrating to a higher risk rating category constitute the credit risk losses of a bank. The thus obtained credit risk loss data allow the risk manager to derive a probability density function (PDF) of credit risk losses. They are broken up into expected and unexpected credit losses. The *expected* component is based on the default experience with customers in specific risk clusters. For example, the bank's historical loss data may suggest that loan customers rated single-B have a 5.58 percent default probability. The bank would factor a risk premium into the lending rate and set aside appropriate loan loss reserves. *Unexpected* credit losses are measured by the standard deviation (σ) of the PDF; the larger the sigma, the higher the unexpected loan losses. Alternatively, they are given as the amount by which actual losses exceed expected losses. The bank then chooses the standard deviation (confidence interval in VaR), that is, the amount of unexpected losses it is prepared to cover with economic capital. Extraordinary credit losses occurring beyond the selected confidence interval are not covered. This approach to credit risk modeling corresponds closely to the VaR measurement and management system of market risk in the trading book. It is expected to replace the Basle Capital Accord of 1988, which distinguishes only between broad risk classes in the loan (or banking) book. Credit risk models, by contrast, allow the allocation of risk weights that correspond closer to actual risks borne by the bank. In addition, credit risk models capture diversification benefits in loan portfolios.

Despite the close similarity between the VaR risk management mode for the trading book and the credit risk approach for the banking book, differences exist. They will become clear after we have examined and critically evaluated the basic features of credit risk models. We commence with valuations of loans and their adjustments in response to their changing risk features. This will allow us to compute credit losses and draw conclusions about the underlying PDF.

General Loan Valuations Features

Performing loans are recognized initially at cost in the books of the bank and subsequently at their amortized value. Loan terms in general

vary with risk ratings where the effective interest rate rises with the risk rating, and non-price loan terms (size, collateral, fees, spreads, repricing intervals) are adjusted in line with the riskiness of the borrower (Treacy and Carey 1998; English and Nelson 1998). Loan officers rate loans at the time they are approved on the basis of the borrower's probability of default and the fraction of the nominal loan value likely to be lost in the event of default, which is called the loss rate given default (LGD). Further examination of the loan pricing issue reveals a number of weaknesses that render banks susceptible to balance-sheet instability.

Loan Repricing

Banks base the probability of default, and thus the risk ratings for new loans, on *current* economic conditions and not on *expected* conditions which might include a deteriorating business environment over the business cycle.[6] Such ratings reflect expected losses over the short horizon but ignore the viability of loan customers over the longer term. This is somewhat surprising as the incidence of default varies over the cycle, becoming more pronounced during a business downturn. Indeed, banking crises tend to coincide with such market events as recessions, periods of overly restrictive monetary policy, and currency crises. The Asian and Russian banking crises are recent examples of the latter. This loan pricing behavior, which ignores available information, is inefficient and has the consequence of banks' capital provision during good times being overly generous but falling short of the required minimum during deteriorating economic conditions. A further implication of this loan pricing behavior is that it leads to a cyclical risk-class migration frequency.[7] Moreover, the quantity of loans granted also tends to vary cyclically. By granting loans on terms commensurate with the buoyant business outlook during boom times, banks sow the seeds for a write-down of bad credits when adverse business conditions arrive. To make matters worse, loan officers tend to become overly pessimistic when the business or economic environment deteriorates, which results in the well-documented phenomenon of credit crunches.[8]

However, even if banks were to include business cycle factors in their loan pricing, such forward-looking behavior could not prevent customers' credit ratings from deteriorating and migrating to a lower risk class over the business cycle. Under these circumstances, the price and nonprice loan terms have to be adjusted. That is, a borrower deemed to be riskier than before would have to pay a higher interest rate and fees as well as post additional collateral. Pricing loans through the cycle mitigates but does not eliminate the migration problem. When migration to a higher risk class occurs, a downward adjustment of a borrower's loan to its fair value is required. Since the market for commercial loans is imperfect and thus reliable market values are commonly unavailable, their fair values must be derived in the model context (mark to model).

Loan Valuation Models

An efficient valuation of loans forms the basis of any credit risk model. Properly valued loans allow us, after aggregating over the whole loan portfolio, to derive the expected and unexpected credit loss rates and their standard deviations. Banks apply two loan valuation models, the default mode and the mark-to-model approach.

Default Mode

According to the DM approach, the loan in the bank's portfolio is either in default or not in default. A credit loss materializes only if the loan customer defaults within the current planning period. Banks measure the expected credit loss as the difference between the bank's credit exposure (nominal amount of loan) at the time of default and the present value of expected future net recoveries. At the time the credit risk model is being implemented, the current loan value (exposure) is assumed to be known. The future recovery value is uncertain. It is measured as one minus its expected LGD.

The default mode has several shortcomings. *First*, expected defaults beyond the current planning horizon are ignored even if they are most likely to occur, say at the beginning of the next period. For example, the dollar loans to Thai real estate development companies that fell due after the balance-sheet date would have been valued at cost by the U.S. bank, even though a collapse of commercial property prices would have suggested an immediate complete write-down. *Second*, any credit deterioration short of default has no impact on the bank's balance sheet. Migration to a lower credit rating would require the bank to factor a higher risk premium into the discount rate applied to the expected cash flows, giving a lower present value of the loan. *Third*, the current practice of not adjusting loan values to changing credit risk (unless they become impaired) entails misleading information, depriving depositors and the market of a clearer picture of the bank's actual state of health.

In an ex post sense, the default mode corresponds to the accounting practice of balancing all loans at their nominal value unless they have impaired status. Theoretically, one could justify this procedure if banks were able to top up, commensurately with the credit deterioration of a loan, their collateral or lift the loan rate so as to leave the present value of the loan unchanged. Frequently, however, collateral values fall during a business slowdown and higher loan rates push the borrower even closer to default. In the case of foreign currency loans, devaluations of the local exchange rate exacerbate the debt burden of borrowers while, at the same time, cheapening any collateral values. The cost-accounting approach of the International Accounting Standards Committee (IASC 1998) thus does not appear to receive support from observed loan value gyrations.[9]

Mark-to-Model Approach

If nominal values of outstanding loans are periodically marked-to-model,[10] they provide a more realistic assessment of the loan portfolio. In other words, the bank replaces the default mode with MTM. In this context, loans that are marked-to-model are shown at their fair value allowing the market to obtain a clearer picture of a bank's loan portfolio health.[11] So far only a few banks use this approach.

In the event of default, the recovery rate of the loan, which amounts to 1 minus LGD, based on the seniority of the debt, is calculated. However, defaulted loans are irrelevant for credit risk modeling purposes as the horse has already bolted. Expected default under the MTM mode is only one of several possible states for a loan during the planning period. Loans either remain in their risk class or migrate to a higher or lower risk category (one of which might be default).

For loans not in default, banks use their own or external historical data on loan migration experience and compute the expected migration at the beginning of the planning horizon for each loan or group of loans, determining for each loan the appropriate risk class at the end of the period. Each risk category in turn has its own migration features. For example, according to experience, loans to a triple-A rated company have a 10.93 percent probability to end the year in the AA risk class.[12]

These risk transition probabilities strictly apply only to through-the-cycle bond ratings. For loans that are rated on current economic conditions, the bond transition matrix would have to be adjusted for changing economic and business conditions over the business cycle.

Credit Spreads

We assume, for the time being, that the expected risk ratings for individual loans as well as for the loan portfolio have been established—having taken account of risk correlations. The bank would now set the risk-adjusted loan rates corresponding to each risk category. Banks rely on a mixture of their own internal ratings and market-determined credit risk spreads in interest rates which are available from rated bonds. For example, the term structure of credit spreads[13] for BB-rated bonds provides banks with the appropriate benchmark for risk-adjusted loan rates along the whole maturity spectrum. Of course, the bank's internal risk classes and spreads must be aligned with those of the agencies.

Discounted Contractual Cash Flow (DCCF) Approach

The current value of a loan that is not in default equals the present value of the discounted cash flows derived from the loan, where the discount rate corresponds to the risk-adjusted rate of a bond having that

same grade. Assuming a flat yield curve, we obtain for the present value of a loan to a BB-rated borrower[14]

$$PV^j = \frac{C^j_1}{(1 + r^j)} + \frac{C^j_2}{(1 + r^j)^2} + \ldots + \frac{C^j_n + P_n}{(1 + r^j)^n}$$

where

PV^j = present (fair) value of loan to customer with internal rating grade j (assumed to be known)

C^j = contractual coupon-equivalent cash payment by customer with grade j in dollars in period i until maturity in period n

P^n = principal repayment at maturity

r^j = interest rate charged customer with ratings grade j.

Whenever a borrower's loan migrates to a higher risk grade, the credit spread is adjusted accordingly. For example, migration of the borrower from BB to CCC requires that we now discount the expected cash flow with the higher rate r^{CCC} instead as at r^{BB}. As a result, the present value of the loan, which is its new fair value, falls.

The equation shows that the present or fair value of the loan can change in response to the following three factors: migration to a higher or lower risk rating grade which requires an adjustment of the discount rate; a change in credit spreads along the credit-risk yield curve which impacts on the discount rate (banks jack up the discount rate by the appropriate risk premium, the denominator, even though no risk migration occurred; migration to a higher risk grade which may also influence the numerator of the equation. During deteriorating business conditions, which necessitate a downgrade, the loan rate (giving rise to the cash flow) is commonly raised. *Fourth*, calls for additional collateral are made. The last two measures impact on the cash flow component of the equation and may, under certain circumstances, leave the expected cash flow and the present value of the loan unaltered. However, it is doubtful that by raising the loan rate and calling for additional collateral, banks are able to increase the expected cash flow from now riskier customers so as to leave the loan value unchanged. Often they achieve the opposite result by driving the borrowing closer to, or into, default. Thus, despite their adjustable terms in the numerator and the denominator in the DCCF equation, loans share with fixed-rate bonds the feature of a drop in their nominal value when they migrate to a higher risk category and vice versa for an improved rating.

Limits of Bond Market Analogue

This discussion brings us to the limits of the bond market analogue on which the equation is based. In the case of fixed-rate bonds, the cash flow is a parameter which is unaffected by any subsequent ratings upgrading or downgrading. In other words, the numerator and denominator are not causally related as with bank loan valuations. Furthermore, additional collateral cannot normally be called. As a corollary, the modeling of the present value approach to loan valuations as encapsulated in the equation and favored by the BCBS (April 1999) and the Federal Reserve System Task Force (1998) cannot be regarded as anything more than a very rough gauge. A more reliable measuring rod must be used to model the functional relationship between the variables in the numerator and the denominator of this equation.

Credit Risk Ratings

For banks setting loan terms commensurate with the credit risk profile of borrowers and re-rating outstanding loans in response to changing business and economic conditions presupposes an effective and reliable credit risk ratings system. The quality of the loan book depends on such provisions. Banks employ their own internal ratings systems which are based on judgmental evaluations of borrowers made by experienced loan officers, and they use statistical default probability models as inputs. In addition, they fine-tune their ratings assignments by learning from previous ratings mistakes. Often, banks model their internal ratings system on the ratings agencies' approach in the first instance. In this case, the bank-internal risk classes have to be tied in with the corresponding bond ratings classifications of outside ratings agencies.[15] For example, fair value assessment may be based on the J. P. Morgan's *CreditMetrics ™*.

However, there appears to be a complete absence of independent evaluations of the internal risk rating performance system maintained by banks. Thus we are in the dark about the accuracy of loan ratings, their consistency as reflected in loan loss experience across the banking industry, and their functioning under stress (e.g., during the recent financial crisis). The lack of sufficient historical loan loss data has prompted banks to rely on the default experience of rated bonds for gauging expected losses on similarly rated loans in their loan portfolios (Treacy and Carey 1998). This begs the question to what extent we can rely on bond ratings agencies. The BCBS calls for each bank to establish an "independent credit review group" (July 1999, 4). However, bank internal reviews tend to be caught up in the same sanguine mood that pervades the institution during buoyant business conditions and vice versa during a downturn.[16]

Assessment of Ratings Agencies

What do we know about the accuracy of the bond ratings, made by ratings agencies, or on which banks rely? The performance of ratings agencies has been widely assessed,[17] and despite the agencies' less than satisfactory calling of ratings downgrades during the 1997–1998 financial crisis in emerging markets, their adjudication is generally accepted with a few reservations.[18] Typically, in empirical studies of corporate assessments, ratings symbols are transformed into numerical rankings, such as AAA = 16, AA = 15, to B = 1, which are then regressed, using cross-sectional data, on the likely determinants of ratings such as total assets, debt to total assets, return on assets, and dividend payments. If these company-specific independent variables in the regression equation explain satisfactorily the behavior of the dependent variable (i.e., the firm's ratings), we can have confidence in the ratings. Most of the credit-risk ratings at the firm level occur in Anglo-Saxon economies; they are rare on the Continent and in a nascent state in Asian economies (except Japan). However, agencies have rated sovereign debt obligations of governments in the Asian region and in other emerging markets for some time. Such sovereign ratings are, of course, related to a different, namely macroeconomic, set of economic parameters than those for corporates. Gross domestic product (GDP) per capita and growth, inflation, fiscal and external balance, ratio of foreign debt to export, and the default history of the country are typical independent variables which are believed to impact on sovereign ratings. Any assessment of the ratings performance in emerging market economies is therefore restricted to sovereign credit risk ratings. Using this information set, R. Cantor and F. Packer (1996) have assessed and confirmed as accurate the sovereign ratings of Standard and Poor's and Moody's with cross-sectional data for a large number of industrialized and developing countries for 1995.

However, subsequent research conducted by D. J. Jüttner and J. McCarthy (1998), which scrutinized the performance of the same agencies' sovereign ratings for the period of the Asian crisis, came up with a disturbing picture. Jüttner and McCarthy re-estimated the Cantor-Packer findings for the years 1996 to 1998 and found, when the sample of countries is split between industrialized and emerging market economies, that the previously observed close relationship between the sovereign ratings and their determinants in the regression equations gradually deteriorated, in particular for the latter group where it breaks down completely. The disintegration of the estimated relationship during a turbulent period of what appeared to be a stable estimated relationship for more tranquil times casts doubts on the reliability of the verdicts of ratings agencies.[19] In their defense, agencies have pointed to the nondisclosure

of forward sales of foreign currency reserves to shore up the baht value by the Thai central bank and the depositing of currency reserves by the Korean central bank with overseas Korean banks. For students of foreign currency intervention, at least the first measure can be regarded as a staple tactic that should have occurred to analysts.[20] When ratings agencies are likely to misjudge in this way the debt-service abilities of sovereigns that default, or would have defaulted without International Monetary Fund (IMF) intervention, extreme caution is required when making use of agencies' credit ratings in loan evaluations, unless, of course, agencies take credible steps to improve their analysis.

Sovereign ratings are related to company ratings in a variety of ways. *First*, no local private sector firm can have a higher rating than the sovereign government's rating; this is known as sovereign ceiling. *Second*, countries in distress commonly have run out of foreign reserves, forcing local companies with foreign currency debt into liquidation. For debt rescheduling purposes, the government often takes over the foreign currency debt of the banking system. *Third*, the fortunes of companies are indirectly related to some of the same macroeconomic variables as those of the countries, including GDP growth, inflation, and the soundness of the banking system. A suggestion made by the *Report of the Working Group on Strengthening Financial Systems* (1998) to also rate countries on the basis of their compliance with international standards and guidelines would make sovereign ratings even more relevant for international lenders and investors. At the same time, it would provide countries with an incentive for financial system reforms to make themselves more attractive for international capital investment.

Ratings Predictions

While ratings appear to work satisfactorily during tranquil periods, our own work suggests that such models perform poorly during an economic crisis, mainly for the following reason. Economic, currency, and ratings crises appear to be caused by unique combinations of factors and events which appear only plausible ex post. They were not, for instance in the case of the ratings crises, merely the result of a deterioration of the variables on the right-hand side of the estimation equation. Previously ignored influences, such as the real currency appreciations and morbidity of the banking sector as well as difficult to quantify variables (e.g., cronyism), turned out to be the undoing of the Asian economies' rapid growth.

This sequence of events receives support from research carried out with regard to the value of early warning systems of currency crises. As the analyses of currency and sovereign ratings crises are based on a very similar set of variables, our experience with predictions of currency crises is therefore directly relevant in the present context. A. Berg and C. Patillo

(1999) assessed and largely dismissed the predictive value of various currency crises models. This negative conclusion occurs even though the "best" performing model (Kaminsky, Lizondo, and Reinhart, 1998) takes advantage of the wisdom of hindsight in its predictions. This model specified the test equation *after* the Asian crisis unfolded, and it includes explanatory variables which the market should have known but apparently ignored or assessed incorrectly. Commonly, markets are aware of a whole set of possible trouble spots, some of which turn out later to be the prime drivers of the crisis. However, ex ante, markets typically are unable to place the appropriate weight on the factors that eventually matter or simply project their current buoyant mood into the future.[21] The same criticism can be leveled against studies of early warning systems of banking distress.[22]

We are thus faced with the following situation. On the one hand, ratings appear to be prone to misjudgments at crucial times, and early warning systems can remain inactive when red lights should be flashing. On the other hand, we have the assessment of the BCBS, "Experience indicates that the most common cause of bank failures, by far, is poor credit quality and credit risk management" (1998, 9). The logical corollary would be to avoid making potential problem loans in the first instance. An improved ratings process still can play an important prophylactic role in this process.

Credit Risk Is a Decision Variable—Market Risk Is a Given Parameter

Currently credit risk modeling tries to measure and manage credit risk in the banking book. This approach largely parallels that used for the trading book's internal models. However, there are important differences in the nature of the risks in the banking and the trading book which appear to provide a basis for expanding the realm of credit risk management in the direction of credit risk prevention. Projecting the VaR approach—even with the appropriate modifications regarding time frame, data, and so on—onto the loan book results in a misspecified credit risk model design. This approach fails to take into account that credit risk contains elements of a decision variable whereas market risk is a given parameter.

In the VaR framework, the probability distribution of the trading position is determined by the associated risk parameters which are set by the market and by the variance-covariance features of the portfolio. The volatilities of currencies and interest rates, as well as commodity and share prices, are completely outside the control of the risk manager because all relevant information is available to the market. For example, even the most painstaking analysis of the yen-dollar exchange rate or of

the long-term U.S. Treasury bond rate does not promise to yield better information about its volatility than the market already has.

Credit risks in the banking book, on the other hand, are primarily influenced by factors under the control of the loan-granting lending officer. The selection by the loan officer of a portfolio from commercial, consumer, cross-border loans or loan commitments, their risk grades (AAA, BBB, or their internal equivalents) and covariances corresponds to the portfolio selection of the trading book. However, neither the credit risks of loans nor the risk covariances are given parameters. They depend on the quality of the bank's credit risk analysis. Superficial loan examinations commonly lead to a buildup of balance-sheet credit risk while expertise in loan evaluations keeps it within bounds. A bank would be better off investing in skill building rather than in improving the sophistication of its credit risk model. Indeed, foisting the new credit risk management on banks may actually make banks riskier because they may be tempted to become sloppier in sorting out good from bad credit risks. The architects of the new credit risk management system appear to have overlooked the fundamental differences between the trading and banking book risk management systems. VaR cannot holus-bolus serve as a template for the latter. The current approach used by the BIS and the Federal Reserve Bank System to improve the effectiveness of the banking system takes credit risk as an unavoidable feature of the banking book. It would be more appropriate for lending officers, bank supervisors, and regulators to pay more attention to the assessment and avoidance of credit risks rather than their subsequent management on the basis of yet-to-be-assembled historical data. Our reform proposals rest on this observation. If bankers, broadly defined, pass up opportunities to focus on reducing credit risk before it becomes a problem for the banking industry, banking and financial crises will continue to occur unabated.[23]

There are limits to our view that credit risk is essentially a decision variable. Credit risk has many close similarities with market risk in the trading book as both depend on interest rate and currency risks as well as commodity and share price risk. However, market risk does not constitute an integral part of the new credit risk management approach, a topic to which we will return.

An argument similar to ours has been applied by H. Tietmeyer (1999) to the interpretation of systemic risk, which should be regarded as an endogenous variable. As such, it depends on the structure of financial markets, the quality of the supervisory framework at the national and global levels, and the political and monetary policy decisions made by governments.

REFORM PROPOSALS

Our critical evaluation of the Basle credit risk measurement and management approach has revealed some serious shortcomings, omissions, and flaws which we ignore at our own peril. The following proposals build on this analytical appraisal. Even though the suggestions presumably lack the aura of some of the sweeping restructuring programs that have come to be associated with the design of a new financial architecture, our presentation may assist in selecting the right building material for a more solid global banking structure.

The current approaches and future directions to credit risk management, as reflected in the BCBS (April 1999) and the Federal Reserve System Task Force (1998), appear to ignore the focal point of our approach. They are not concerned with the possibility of improvements in credit analysis in a reform program that is directed at weeding out loans before they become a problem. Paying attention only to on–balance sheet outcomes and ignoring any preceding inefficiencies in banks' credit risk analyses negate opportunities for improving the soundness of banking. This comes as a surprise because both inquiries point to the severe limitations of the current credit risk models, namely, the lack of reliable, long-term data on loan defaults. The message from risk managers appears to be that their models promise to work well after we have amassed sufficient data from one or two more credit cycles. Obviously, waiting until future credit cycles and one or two more global banking crises have generated sufficient data for a successful credit risk modeling exercise would be imprudent, to say the least.[24] We can hardly afford to wait for, and we should strive to avoid, such a bleak data harvest.

What concrete steps can banks take to improve substantially the quality of their credit risk analysis so that ratings migrations are minimized and defaults do not become a debilitating issue? *First*, the quality of the loan book depends primarily on loan officers' understanding of the business activities of their loan customers. *Second*, sound loan-granting procedures rely on the accuracy of the internal and external ratings systems. *Third*, market risk has to become part and parcel of credit risk evaluations. *Fourth*, banks' credit risk models stand and fall with appropriate loan evaluations. These four aspects diverge significantly from the VaR approach to credit risk modeling. *Fifth*, the supervisory–lending officer linkage has to be tightened. *Sixth*, do not avoid at all cost the failure of large financial institution and disorderly markets.

Improvements in Quality of Credit Risk Analysis

The Basle Committee on Banking Supervision (July 1999, 3) addresses this question of improving the quality of credit risk analysis but disap-

pointingly comes up with a well-intentioned statement that is a wish list. "Banks must operate under sound, well-defined credit-granting criteria," reads one of the recommendations. The difference between sound and unsound, well-defined and hazy, is far from obvious. Time and again, banks have been systematically dazzled by the apparent profitability of enterprises without really understanding the business and economic context in which they were achieved. Banks' involvement with LTCM and loans to Asian countries are recent examples. These and other repeated failures to assess credit risks appropriately appear to suggest a radical restructuring of the credit-granting process.

Loan Officers as Investment Analysts

Where does our poor record of banking, currency, or financial crises predictions leave the bank lending officer when valuing loans and loan portfolios in the context of the new credit risk models? The task is compounded for cross-border loans which demand an even larger information set. The requirement is for a new breed of lending officers who command a thorough understanding of the business and industry characteristics of loan applicants, the micro- and macroeconomic determinants of loan values and their behavior over the business cycle, and how borrowers are expected to respond to market shocks. The international lending dimension requires that loan officers be able to assess the profitability of the foreign investment (in the case of a direct loan to a foreign company), or the quality of a foreign bank's soundness (in case of interbank lending), and also build into their credit ratings assessments important economic and country-specific parameters, including exchange rates, monetary and fiscal developments, government guarantees, terms of trade, and political risk. Thus the lending department has to also draw heavily on the expertise of external ratings agencies, investment analysts, economists, and political risk assessors who specialize in financial markets and foreign countries. Moreover, the threat of systemic risk continuously hangs over any loan exposure, in particular those to emerging markets.

In the first instance, the lending officer has to acquire a thorough understanding of the nature and the quality of the investment project. Lending officers have to behave as if they made the investment decision themselves. Accepting this principle would contribute in a major way to reducing the incidence of poor loan quality. Improvements in the quality of the lending decision would obviate the need to account for, disclose, and discharge problem loans. Competent loan officers are on top of what firms do. "We need loan officers that could, in effect, make sound loans themselves because they understand the process . . . loan officers that could, in effect, step into the shoes of their customers" (Greenspan 1998, 6).

D. J. Jüttner and B. Gup (1998) have developed a model of loan-granting behavior based on the premise that loan-granting banks behave as if they own the firms making the investments. This requires bankers to be knowledgeable about the industries and companies to which they lend, beyond the interpretation of firms' financial ratio analyses. Lending officers must build into their assessment features of the research of security analysts and study closely the expected rate of return of their customers' investments in addition to the companies' cost of capital.[25] To a large extent, banking analysis tends to gloss over the real investment side of lending decisions. As a result, real rates of return on investment do not feature prominently in banking and in finance generally, even though the risk of a loan, for instance, depends on how far the distance of the loan rate form the investment rate of return is. E. Fama and K. French (1999) have moved somewhat belatedly in this direction with their detailed analysis of the real rates of return on investments.[26]

Combining Commercial and Investment Banking

The separation of commercial from investment banking prevents the merging of different cultures which could provide an opportunity for a spillover of expertise to improve the quality of bank lending to companies. Combining commercial and investment banking in universal banks would allow both to benefit from, and provide incentives for, continuous monitoring and forward-looking evaluations of companies' performance in their business activities in the industry context. In addition, investment banking analysts carry out parallel monitoring duties of companies on an ongoing basis in the share market (Allen 1993, 101). Lending officers, on their part, provide an initial assessment of loans, and they subsequently review borrowers when their risk profiles change. A universal banking system thus exploits natural synergies between commercial and investment banking. The set of available useful data from investment banking and loan granting would expand significantly, and investment bankers' analyses of companies and industries would reduce asymmetric information and mitigate the impact of market risk, an issue that will be discussed below. This mitigates the resulting problems of adverse selection and moral hazard. The wedding of commercial with universal banking would result in more careful project evaluation and selection and a closer monitoring of existing loans.[27]

Improvements in the lending decision procedure as a result of the involvement of investment banking expertise would obviate the need for much of the accounting for poor credit quality, credit risk management, and their disclosure. If the LTCM episode is indicative of the failure potential of current credit risk management approaches, the outlook for a stable financial system is not very promising. According to P. Parkinson (1999), U.S. (and foreign) banks that made loans to the LTCM did

not seem to understand its risk profile and thus failed to limit their risk exposures effectively.

Improvements in Risk Ratings

Banks can improve their credit risk classification procedures as follows. *First*, the credit risk assessment of loans on the basis of current business and economic conditions is replaced by a longer term credit risk evaluation which gauges the company's as well as its industry's performance over the business cycle or changes in the economic and financial regimes. *Second*, as already discussed, stress tests and scenario analyses form part of credit risk evaluations. *Third*, link the risk rating of banks' assets to the country risk of borrowers. *Fourth*, ratings agencies and banks must pay attention to market risk in loan books.

Rating over the Longer Horizon

Adopting a longer term horizon for the ratings approach promises greater stability in the loan migration matrix and a reduction in loan defaults. Projections of real rates of return of their customers' activities into the future forces banks to evaluate the development of such rates in the historical context. As real rates of return are commonly quite stable when compared with their nominal counterparts, large swings in credit-granting behavior and loan-loss experiences are less likely to occur. An outlook beyond the current state of affairs would make banks aware of possible policy shifts, exchange rate regime changes, or particular vulnerabilities of firms, industries, or regions.

Stress Testing by Ratings Agencies and Banks

Credit ratings agencies now regularly stress test securities in order to ascertain whether they can survive various adverse economic and business conditions. This stress testing procedure is done separately for different grades. We did not find any evidence of stress testing in precrisis agencies' ratings assessments, and they were consequently ignored in econometric estimates. Such testing of the robustness of the debt service capacity of countries as well as individual or groups of companies could have alerted markets and policy makers earlier to fundamental imbalances in emerging markets and their vulnerability to market and event risks. Worst case outcomes would have included the collapse of overvalued currencies, causing impairment of the countries' firms foreign debt service capabilities, the morbid state of the banking system, and excessive credit growth. Stress testing of the different loan risk classes and for the loan portfolio as a whole are particularly valuable because of the infrequent occurrence of default events across the whole ratings spectrum and their episode-specific nature. Banks' credit risk exposure

to the real estate industry, to hedge funds (LTCM), or emerging markets are but a few examples. Stress testing often provides the only means of evaluating loans to new markets or novel industries where migrations matrixes are of limited value or unavailable.

However, stress testing of the loan book has the hallmarks of a very subjective art. It is one thing to come up with an apocalyptic picture of the future, but another to factor a commensurate risk premium in the borrowing rate when no information about competitors' behavior exists which would allow a calibration of the pricing of event risk. Moreover, our experience with stress testing appears to suggest that relevant stress scenarios might easily be overlooked. Supervisory authorities would have to engage in an ongoing dialogue with banks and outside experts on this issue.

Linking Asset Risk to Country Rating

How can these prescriptions be implemented on a global basis so that they would also apply to emerging markets? A proposal has been made to link the risk class of banks' assets to the rating of a country. The rating in turn would depend inter alia on the compliance with international accounting and disclosure standards, effective prudential supervision of the banking system, an appropriate exchange rate regime, open capital markets, and other features that are deemed to be conducive to financial stability. Countries that rate poorly on these requirements would be penalized with a high-risk premium in their borrowing costs. For example, a bank lending to such a country would have to set aside more than 8 percent of its nominal value in capital. The banks' increased capital cost will have to be reflected in higher loan rates. In this way, borrowers (banks and companies) in emerging markets have an incentive to provide the appropriate financial infrastructure.

Including Market Risk in Analysis

Market risks that affect loan values include sudden interest rate and currency changes, asset price deflations or reflations, and other market events. For example, a widening of credit spreads along the yield curve decreases the value of all banks' loans whose interest rates do not rise in unison with market rates. However, even if loan terms are commensurately adjusted with yield curve shifts, loan values might still have to be adjusted when borrowers are pushed closer to the brink of bankruptcy. The BIS and the Federal Reserve pay only lip service to the impact of market and event risks on the loan values of banks. They fail to modify their credit risk models accordingly. The existence of market risk requires a number of modifications. Without these adjustments, the usefulness of credit risk models appears to be seriously impaired. The struc-

ture of this matrix would crumble under the impact of certain market events.

Market Risk, Time Horizon, and Risk Migration

Changes in market risk can strike the loan book of banks with lightning speed. For example, a currency crisis or a widening of credit spreads may push whole customer segments close to, or into, default in a very short period of time. This feature renders the assumed time period of analysis of one year or of hold-to-maturity invalid, because banks have to take remedial actions immediately in response to any relevant substantive market movement. Thus one distinguishing feature between the VaR and the credit risk model crumbles in the face of market risk; responses to such credit losses have to be made in a time span closer to the ten business days that is common for the VaR system. Furthermore, the impact of an adverse market event on the migration risk matrix is left unexplored.

Asymmetric Information Obscures the Issue

Bank economists focus primarily on the asymmetric information hypothesis as the major reason for loan defaults. Economic theory shows loan officers to be at a systematic disadvantage compared to commercial borrowers. Advocates of the asymmetric information hypothesis would be hard-pressed to explain the recent financial turmoil, or the previous crises in Latin America, for that matter. Local banks in emerging markets obtained foreign currency funds from overseas sources and lent these to local borrowers. A significant component of the expected rates of return for the overseas banks therefore was exposed to currency risk. As local knowledge presumably does not provide an information advantage for the prediction of exchange rates, foreign lenders as well as local lenders and borrowers shared the same understanding of the determinants of the contract exchange rate. In view of the importance of currency devaluations of debtors' currencies for the success of across-border lending, it is hard to imagine why asymmetric information between overseas and local banks, on the one hand, and local banks and commercial borrowers, on the other, should matter at all. For example, the substantial drop in the value of the Thai baht presumably made any information advantage intramarginal in that good and bad risks among the borrowing firms failed. The effects of market risk swamp all others.

Asymmetric information has been used extensively as an explanation of the Asian banking crisis (e.g., Calomiris 1998). Often it fulfills the function of an apology for the mistakes made by Western banks which are really blunders resulting from inadequate credit analysis. Bank diversification may be an antidote for the asymmetric information problem (Calomiris 1998). When banks operate branches throughout the world

and hold an internationally diversified portfolio of securities, their balance sheets are better able to withstand economic shocks. As a result, bank runs and serial bankruptcies may be avoided. This proposal would not tackle the issue of bad loans directly; instead, some of the consequences of poor lending decisions are spread more widely. Besides, market risk cannot be diversified away, but its consequences for the loan book can be mitigated through appropriate analysis.

Risk Correlations

Credit risks are not independent as assumed by credit risk models. The BCBS credit risk paper (April 1999) requires banks to model and estimate correlations between borrowers in the loan portfolio context. However, market events can adversely affect whole groups of obligors at the same time, regardless of any previously established correlations. Moreover, and closely aligned with the correlations, the LGD are assumed to be mutually independent among borrowers when they are not under stressful conditions. This observation strengthens our case for the development of an appropriate market risk analysis.

Loan Valuations

All nominal values of outstanding loans are periodically marked-to-model, providing a more realistic assessment of the loan portfolio. In other words, the bank replaces the default mode with the mark-to-model approach. The principal benefits of this change consist in the provision of information about the risk-adjusted expected cash flows of the borrowing entity and the appropriate factoring of risk premiums into the discount rate. Due to the internationalization of banking, the impact of currency realignments, country risk analysis, and other relevant macroeconomic variables on the loan portfolio are assessed on an ongoing basis. Furthermore, banks have to compute fair values of loans under scenario analysis or stress testing. Only then will banks correctly become aware of the risks they face. Furthermore, when loans are marked to model periodically, a rich set of data becomes available for statistically based credit risk modeling techniques.

Improvements in Supervisory–Lending Officer Linkage

Improvements in the quality of the lending decision could be introduced from above via the chain: supervisors, bank lending officers, and company investment managers. A first step in this direction could be easily taken. The IMF, as part of its Contingent Credit Lines (CCL) Scheme (April 1999), could require countries to improve the quality of their bank supervisors who, in turn, would impress on companies the

need for higher standards of bank lending decisions. None of the current conditions of the CCL addresses this issue regarding improvements in the quality of lending decisions. Obviously, the improved quality of credit and market risk analysis resulting from the synergies realized from combining commercial and investment banking would necessarily rub off on bank examiners. The efficient working of financial institutions and markets in the global context requires skill building with respect to both bank supervisors and lending officers.

Training Supervisors

The BIS is planning to hold a "wide-ranging program for middle-level senior supervisors" in the form of seminars given in each of the major regions of the world (1999, 162). Ideally, such seminars should train a cadre of supervisors who, then, are ready to pass on sound practices to banking officers around the globe. What would their task entail in the case of credit and market risk management? It would have to transcend the traditional checks of financial ratio analysis, exposure measurement, and examination of risk management models and venture into a close examination of the loan book: market values of loans, internal rates of return, cash flow analyses, funding costs, and so on. The resulting broadening of the pool of experts promises to improve the stability of the banking system. The *Report of the Working Group on Strengthening Financial Systems* (1998, 43–46) moves in this direction.

Lack of Courage of Conviction

The results of the global search for the causes and cures of the recent financial and banking crises made by regulators, policy makers, and finance experts all have one thing in common: an avoidance of apportioning blame to bank supervisors. If banks are allowed to behave imprudently or even recklessly for extended periods of time, regulators should share some of the blame for the consequences if crises erupt. Regulators instead tend to respond in an apologetic fashion. At best, they point to some memo, report, or supervisory letter expressing concern at the direction into which some banks have moved. They may express their apprehension about the debt buildup of the private sector or some other distortion. At worst, they ignore even gross accumulations of imbalances in the banking industry. The following examples appear to lend credence to our critique.

In his testimony to the U.S. House of Representatives explaining the bailout of the LTCM, the president of the Federal Reserve Bank of New York, William McDonough (1998), referred to a supervisory letter sent to banks emphasizing the need for banks to analyze the financial position of counterparties. However, no effective actions appeared to have been taken despite banks lending to hedge funds without properly assessing

the counterparties' risks. This apparent inactivity occurred although the systemic risk potential of hedge funds' speculative activities and the banks' heavy involvement as providers of funds and as position takers themselves were widely discussed.

An even more glaring example of a schism between analysis and supervisory inaction is provided by the *Report of the Working Party on Financial Stability in Emerging Market Economies* (1997) which followed the Lyon Summit in 1996. Despite offering a blueprint for corrective actions, none followed. Similarly, the BIS, which regards itself as the global prudential supervisor, largely ignored the Asian economies in the lead-up to the crisis even though they attracted a large share of international capital flows. However, even close contact and an exchange of views between central bankers from the first world and emerging economies in the Asia-Pacific region on a regular basis since 1991 in EMEAP (Executives' Meeting of East Asia and Pacific) central banks apparently did little to disturb regulatory lethargy.[28] This ambivalent pattern of expressing concern at banking sector developments and lack of supervisory actions appears to suggest that supervisors in general lack the courage of conviction.

This supervisory paralysis in the face of impending crises is compounded by the supervisory authorities' reluctance to undertake a wide-ranging critical self-assessment. While various official publications cover a broad spectrum of delineations of supervisory roles, none tackles the thorny issue of how to improve the performance of the supervisors. For example, the *Report of the Working Group on Strengthening Financial Systems* favors a "method of structured early intervention" on the basis of "automatic quantifying triggers" or "explicit rules" (1998, 24–25). However, causes of banking crises commonly change and may therefore not be conducive to standardization. In addition, supervisors have to distinguish spasmodic insolvencies of individual banks from systematic banking collapses resulting from market risk. It is difficult to imagine how structured intervention and automatic triggers could be applied to systemic crises that may be caused by macroeconomic factors, slack banking supervision, or country-specific factors, for example. Supervisors with their narrow focus on balance-sheet anomalies appear to be ill equipped to play an effective role in forestalling systemic banking crises.[29]

How then do we move in the direction of ensuring more efficient supervisory services? For obvious reasons, the much-invoked market discipline would be impossible to apply, unless we privatized supervision and handed the task over to competing agencies. However, greater accountability, disclosure, and transparency of supervisory authorities would allow finance experts, academicians, and indeed the general public to gain an objective assessment of their actions and oversights, successes and failures. Proprietary information, which they obtain during

the course of their investigations, would, of course, have to be protected. Furthermore, regulators' annual reports should contain comprehensive cost estimates of the failures of an institution and of mistakes made by supervisors as well as indications of appropriate adjustments to the personnel structure within the regulatory authority.[30]

Allow Failure of Large Financial Institutions and Disorderly Markets to Occur

The bailout of the LTCM hedge fund in September 1998 facilitated (though not financed) by the Federal Reserve Bank of New York sent another wrong signal to reckless financial operators. If a failure wrecks havoc on financial markets, if banks are too big to fail, or if they are close enough to the authorities, any losses will be socialized.[31] Greenspan built up a seemingly impervious defense of interventionism when he claimed that, for central bankers, "the question is whether *ex ante*, the probability of a systemic collapse was sufficient to warrant intervention" (1998, 4). Furthermore, it could have "potentially impaired the economies of many nations, including our own." Ex post, of course, it is not possible to know whether their action was correct. Considering the uniqueness of the occurrence of systemic threats and thus the absence of empirical support for a probability density function, the door is wide open for arbitrary discretionary supervisory decisions. The problem is compounded by any possible negligence of regulators in respect of proper supervision in the time period leading up to the institution's getting into difficulties. A bailout might then conveniently assist in the cover-up of regulatory incompetence. For example, the involvement of banks as suppliers of credit to highly leveraged hedge funds was poorly understood by lending banks (Economist 1999, 28) so that the fund obtained a good internal rating from a number of banks (OECD 1999). The finance sectors and regulators, including the Federal Reserve, were well aware of the highly risky investment strategies and unsupervised status of the hedge funds industry.[32] The supervisors' failure to take timely corrective actions would have come under heavy public criticism in the event of wider collateral damage following the demise of the LTCM.

However, the dilemma of having to choose between banking stability and the imposition of market discipline faced by central bankers is more apparent than real. They have other weapons at their disposal to contain any local crisis from spreading. For instance, in the event of the failure of the LTCM, they could have taken further corrective actions if their initial inactivity turned out to be an inadequate response. In the case at hand, if the forced closeouts of LTCMs and their counterparties' positions and the liquidation of collateral held by the latter had indeed threatened widespread disorderly financial markets, an orchestrated re-

sponse by the central banks of the major countries could have been put into action. An injection of additional liquidity into the system by authorities or even a promise to do so, is often sufficient to calm markets and prevent substantial systemic implications. By invoking the specter of an imminent systemic crisis, which was to be averted at all costs by direct intervention, the Federal Reserve deprived market participants of a wholesome experience. Moral hazard can be tackled credibly only if market participants come to realize that regulators treat banking and financial market stability and the imposition of market discipline as a trade-off. Failure to ascertain the extent of risk exposure of their own and their counterparties' trading positions and risk management systems violates the ground rules of participating in open markets. Disorderly markets or anxiety about the safety of the banking system as a transitory phenomenon are acceptable regulatory measures to curtail and limit moral hazard–induced risk taking by financial institutions. Current costs alone do not justify intervention: a conniving attitude by the authorities may entail far greater expense in the future. It distorts incentives and engenders misleading market signals.

CONCLUSION AND SUMMARY OF PROPOSALS

The broad thrust of this chapter dealing with the new Basle credit risk modeling approach contends that it falls short of providing a firm anchor for the banking system to withstand a renewed attack on the global financial system. This element of the financial architecture thus relies on defective building material. Apart from being riddled with flaws, inconsistencies, and omissions, the Basle approach focuses merely on the measurement and management of credit risk but ignores opportunities to reform the banking and financial system so that credit risk is reduced before it enters the balance sheets. Our reform proposals, which also address some of the defects of the new credit risk model, focus on the possibility of risk reduction rather than risk management.

By uncritically grafting the Value-at-Risk terminology onto the credit book of banks, essential differences between the trading and credit book risks are overlooked. This obscures risk management opportunities. *First*, while market risk in the trading book of banks is a given parameter, credit risk in their loan book constitutes a decision variable that is under the influence of banks and supervisors. Both have the ability to reduce credit risk before it becomes a balance-sheet issue. *Second*, improvements in credit risk analysis can be achieved by wedding the skills of loan officers with those of investment analysts. Analysts are more comfortable evaluating a company's investment prospect in the industry, the share market, and the global context. The universal banking system appears to be the appropriate conduit for such a development. *Third*, the unre-

liability of external and internal risk ratings in crisis situations weakens the credit risk model. Ratings quality gains may be obtained through ratings over the longer term, stress testing of ratings outcomes, and linking the risk adjustments of banks' cross-border assets to country risk ratings. *Fourth*, we expect a significant improvement in the new credit risk model from the inclusion of market risk. Market risk resulting from sudden currency and interest rate, as well as from share and commodity price changes, acts as the major fomenting agent for banking crises. *Fifth*, computation of the fair values of loans through mark-to-model procedures would greatly enhance our ability to manage credit risk while at the same time keeping the market better informed. *Sixth*, virtually no attention has been paid to the enhancement of the expertise of bank supervisors, not only in emerging markets but generally. We critically appraise acceptable methods of accountability for the actions of, or failure to intervene by, supervisors.

NOTES

This study was completed during several months spent as a visiting professor at the University of Magdeburg in their International Study Program. I would like to thank the Faculty of Economics and Management for their hospitality and the congenial atmosphere which was conducive to my research. This chapter formed the basis for an invited panel discussion on the New Financial Architecture: Banking Regulation in the 21st Century at the October 1999 Meeting of the Financial Management Association International held in Orlando, Florida.

1. They range from 20 percent of GDP in Korea to 36 percent and 42 percent of GDP in Indonesia and Thailand, respectively (Kamin 1999). For a longer forward-looking time horizon, much larger losses from the crisis accrue.

2. Brazil, China, Hong Kong, India, Korea, Mexico, Russia, Saudi Arabia, and Singapore were admitted as member countries in 1998 to the BIS, an institution that is for global prudential supervision of banks. The other official custodians, including the IMF, the World Bank, and the OECD, similarly showed poor judgment by failing to assess emerging market risk appropriately.

3. Among others, the potentially unsettling real appreciations of several Asian exchange rates were largely ignored by ratings agencies, the IMF, and economists. Furthermore, even though unanimity exists among economists regarding the incalculable liabilities associated with interventions in forward currency markets, the central bank of Thailand squandered its foreign reserves defending an overvalued currency right under the noses of the IMF and other international watchdogs.

4. In Miller's view, "Banking is disaster-prone, 19th century technology, not easily tamed" (1998, 232). Winkler (1993) provides a historical perspective of financial crises involving banks for the last quarter of a millennium.

5. The Value-at-Risk (VaR) framework was introduced by the Bank for International Settlements in 1995. It requires banks to measure and manage the market

risk of their securities and derivatives in their trading book, and it imposes on banks a capital requirement commensurate with the market risk taken.

6. Banks distinguish between *unconditional* credit risk models, which focus on a limited set of borrower-specific information, and *conditional* models, which encompass in addition information about the state of the economy with regard to inflation, employment, interest rates, and so on. However, such models do not project the impact of future economic conditions for expected credit migration. Wilson (September 1997 and October 1997) analyzes default rates in the context of a macroeconomic model. Likewise, the Federal Reserve System Task Force (1998) refers only in a footnote to the important link between macroeconomic and business cycles and credit risk modeling.

7. Ratings agencies, on the other hand, base their ratings on the likely conditions prevailing over the cycle. They project the performance of borrowers over varying business conditions and determine the ratings accordingly.

8. See Bernanke and Lown (1991–1992, 205–47).

9. The IASC sets accounting standards for a range of financial instruments. In general, loans are recognized at amortized cost; however, impaired loans are written down to their recovery values.

10. As a secondary market for loans in greatest need of adjustment is nonexistent, the term "mark-to-market" would be inappropriate. Due to a regulatory capital arbitrage response of banks to the Basle risk-based capital requirements, banks are more likely to sell off their highest quality loans from the banking book. The Federal Reserve System Task Force (1998) terms this cherry picking.

11. For obvious reasons, initially the loan's nominal value equals its fair value. No bank would grant a loan at terms that immediately reduce its fair below its nominal value. If it were to sell a loan immediately after it has been granted, the bank would expect to recover its cost value, transaction costs apart.

12. The probability is taken from Gupton, Finger, and Bhatia (1997, 76) who obtain their adjusted ratings transition matrix from historical migration data tabulated by Standard & Poor's.

13 The term structure of credit spreads plots for each risk class the difference between the risk-adjusted interest on a loan and the corresponding rate on a risk-free government bond of the same maturity along the time axis.

14. The equation can be easily generalized for any shape of the yield curve, time-dependent cash flows and any risk-adjusted discount rate.

15. Treacy and Carey (1998) provide a comprehensive analysis of the internal ratings systems of the fifty largest U.S. banks, based on internal reports, credit policy documents, interviews with senior bankers and conversations with Federal Reserve bank examiners.

16. We already mentioned banks' tendency for engineering credit crunches during business downturns and instances where risk evaluations of borrowers softened during boom times run to a whole litany. Most recently, the OECD observed, with respect to the LTCM debacle, "[T]here was an excessive degree of confidence in the reputation and risk management capabilities of LTCM principals" so that this fund "obtained a good internal rating from a number of banks" (1999, 104).

17. For recent studies see Barth, Beaver, and Landsman (1998) for corporate bonds and Cantor and Packer (1996) for sovereign ratings.

18. Research coming out of the Bank for International Settlements (Kamin and Kleist 1999) appears to endorse, without reservations, the ratings results of Moody's and Standard & Poor's as explained quantitatively by Cantor and Packer (1996).

19. The IMF's (1999) review of our study glosses over the collapse of ratings after the onset of the Asian crisis.

20. The Reserve Bank of Australia, for instance, frequently intervenes in this way and also buys domestic currency when it deems the currency to be cheap in order to profit from any subsequent revaluations.

21. How else can one explain the *fall* in credit spreads of emerging market debt over U.S. Treasuries during a good part of 1997?

22. See, for example, González-Hermosillo (1999).

23. The credit risk management approach would be correct if banks had already reduced credit risk to a level where the costs of reducing credit risk farther outweighed the benefits to be had from managing credit risk at an acceptable solvency probability.

24. Attempts at generating migrations and default data through cross-sectional simulations (Lopez and Saidenberg 1999) may do more harm than good as such data necessarily come from a limited number of states of the world.

25. It appears that loan officers, banking specialists, and supervisors limit their analysis to the cost of capital or the risk-adjusted bond rate, determined by ratings companies. This is a fundamentally flawed approach since firms invest only when the difference between the marginal efficiency of capital (e.g., internal rate of return) and the cost of capital (e.g., required rate of return) is sufficiently positive. Leaving some technicalities aside, this criterion makes the NPV of the investment positive. This distinction between two rates of return has a long tradition in economics, including Wicksell's comparison between the real rate of return and the market rate of interest and Tobin's distinction between the marginal efficiency of capital and the required rate of return on capital. "Knowing your customer" is no substitute for a thorough analysis of companies' investment projects.

26. Capital budgeting that studies the cash flow from real investment projects does not lend itself easily to be applied to bank lending decisions.

27. One could argue that in well-functioning capital markets the threat of takeovers or buyouts provides incentive enough for commercial banks to perform. For example, if a bank accumulates an unusually large amount of bad loans, it will be taken over by better managed banks. However, market failures in the banking industry may be less frequent under the universal banking system.

28. EMEAP brings together central bankers from Australia, Indonesia, Japan, South Korea, Malaysia, New Zealand, the Philippines, Singapore, Thailand, China, and Hong Kong. The activities of EMEAP are described by Fraser (1996).

29. Bonte et al. (1999) examine the role of supervision in the Asian crisis, drawing on the experience of several countries' supervisory approaches. This study also ignores supervisory lessons from banking collapses resulting from market risk.

30. The Australian experience with banking crises provides a contrasting picture. In the wake of the very costly insolvencies of the State Bank of Victoria and of South Australia, for which the Reserve Bank had de facto, though not de jure,

supervisory responsibilities, the involved senior supervisors appeared to have been promoted. Furthermore, the Reserve Bank's official response to its inaction was that no depositor lost one cent; taxpayers, however, were left bleeding badly.

31. Golembe (1999) mentions the rescue by the FDIC of the Continental Illinois Bank in 1984 as another misguided action that contributed to moral hazard.

32. Despite the widely discussed concerns about banks' financing of the leveraged positions of hedge funds, apparently no supervisory actions were initiated. Were lenders swept away and supervisors intimidated by the conspicuous performance of LTCM and other hedge funds during 1995–1996 and thus failed to probe lending exposure for systemic risk potential?

REFERENCES

Allen, F. "Stock Markets and Resource Allocation in Capital Markets and Financial Intermediation." In *Capital Markets and Financial Intermediation*, edited by C. Mayer and X. Vives. Cambridge: Cambridge University Press, 1993.

Bank for International Settlements (BIS). *69th Annual Report*. Basle: BIS, June 1999.

Barth, M., W. Beaver, and W. Landsman. "Relative Valuation Roles of Equity Book Value and Net Income as a Function of Financial Health." *Journal of Accounting & Economics* (February 1998): 1–34.

Basle Committee on Banking Supervision. *Credit Risk Modelling: Current Practices and Applications*. Basle: BCBS, April 1999.

———. *Principles for the Management of Credit Risk*. Basle: BCBS, July 1999.

———. "Sound Practices for Loan Accounting, Credit Risk Disclosure and Related Matters." Consultative paper issued by the Basle Committee on Banking Supervision. Basle: BCBS, October 1998.

Berg, A., and C. Patillo. "Are Currency Crises Predictable? A Test." IMF Staff Papers, Washington, D.C., June 1999, 107–38.

Bernanke, B., and C. Lown. "The Credit Crunch." Brookings Papers on Economic Activity. Washington, D.C.: Brookings Institution, 1991–92, 205–47.

Bonte, R., et al. "Supervisory Lessons to Be Drawn from the Asian Crisis." BCBS Working Paper. Basle: BCBS, June 1999.

Calomiris, C. "Blueprint for a New Global Financial Architecture." *American Enterprise Institute Speeches*. Washington, D.C.: American Enterprise Institute, October 1998.

Cantor, R., and F. Packer. "Determinants and Impact of Sovereign Credit Ratings." *Economic Policy Review* (Federal Reserve Bank of New York), October 1996, 37–53.

English, W., and W. Nelson. "Bank Risk Rating of Business Loans." Finance and Discussion Paper. Federal Reserve Board, November 1998.

Fama E., and K. French. "The Corporate Cost of Capital and the Return on Corporate Investment." *Journal of Finance* (December 1999).

Federal Reserve System Task Force on Internal Credit Risk Models. *Credit Risk Models at Major U.S. Banking Institutions: Current State of the Art and Implications for Assessment of Capital Adequacy*. Washington, D.C.: May 1998.

Fraser, B. "Central Bank Co-Operation in Asia." Reserve Bank of Australia Bulletin. September 1996, 21–26.

Golembe, C. "Global Financial Crises: Implications for Banking Regulations." Paper presented at the Conference on Bank Structure and Competition of the Federal Reserve Bank of Chicago, May 1999.

González-Hermosillo, B. "Determinants of Ex-Ante Banking Distress: A Macro-Micro Empirical Exploration of Some Recent Episodes." IMF Working Paper, Washington, D.C. March 1999.

Greenspan, "Remarks by Alan Greenspan." Paper presented at the 34th Annual Financial Markets Conference on Bank Structure and Competition of the Federal Reserve Bank of Chicago, May 1998.

Gupton, G., C. Finger, and M. Bhatia. *CreditMetrics—Technical Document*. New York: J. P. Morgan, April 1997.

International Accounting Standards Committee (IASC). *Financial Instruments: Recognition and Measurement*. IAS 39. London: IASC, December 1998.

International Monetary Fund (IMF). *International Capital Markets*. Washington D.C.: IMF, September 1999.

———. "IMF Tightens Defenses Against Financial Contagion by Establishing Contingent Credit Lines." IMF Press Release no. 99/14, April 25, 1999.

Jüttner, D. J., and B. Gup. "Capital Theory: Lessons from Tobin's Q Applied to Banks' Loan Portfolios." In *Advances in Pacific Basin Financial Markets*, edited by T. Bos and T. A. Fetherstone, vol. 4, 279–92. Greenwich, Conn.: JAI Press, 1998.

———. "What Basle Forgot." In *International Banking Crises: Large Scale Failures, Massive Government Interventions*, edited by B. Gup. Westport, Conn.: Quorum Books, 1999.

Jüttner, D. J., and J. McCarthy. "Modelling a Ratings Crisis." Mimeograph. Macquarie University, Australia, 1998.

Kamin, S. B. "The Current International Financial Crisis: How Much Is New?" International Finance Discussion Papers, Board of Governors of the Federal Reserve System, June 1999. Forthcoming in *Journal of International Money and Finance*.

Kamin, S. B., and K. Kleist. "The Evolution and Determinants of Emerging Market Credit Spreads in the 1990s." BIS Working Paper. May 1999.

Kaminsky, G., S. Lizondo, and C. Reinhart. "Leading Indicators of Currency Crises." IMF Staff Papers, Washington, D.C., March 1998, 1–48.

Lopez, J., and M. Saidenberg. "Evaluating Credit Risk Models." Federal Reserve Bank of New York, unpublished, April 1999.

McDonough, W. J. "Mr. McDonough Describes the Role of the FRBNY in the Event Leading up to Private-Sector Recapitalization of Long-Term Capital Management." *BIS Review*, 78 (1998): 1–6.

Miller, M. H. "The Current Southeast Asia Financial Crisis." *Pacific-Basin Finance Journal* 6 (1998): 225–33.

Organization for Economic Cooperation and Development (OECD). "The LTCM Crisis and Its Consequences for Banks and Banking Supervision." *Financial Market Trends*, June 1999, 97–107.

Parkinson, P. "Hedge Funds, Leverage, and the Lessons of Long-Term Capital Management." Testimony Before the Committee on Banking and Financial

Services, U.S. House of Representatives, May 1999. www.bog.frb.us/BoardDocs/Testimony/1999/1999050b.htm.

Report of the Working Group on Strengthening the Financial Systems, Finance Ministers and Central Bank Governors. Washington, D.C.: October 1998. www.bis.org/publ/index.htm.

Report of the Working Party on Financial Stability in Emerging Market Economies. Basle: April 1997.

"A Survey of International Banking: On a Wing and a Prayer." *The Economist*, April 17, 1999, 1–30.

Tietmeyer, H. "Remarks presented at the Conference of the Center for Financial Studies on Systemic Risk and Lender of Last Resort," Frankfurt, Germany, June 1999.

Treacy, W., and M. Carey. "Credit Risk Rating at Larger U.S. Banks." *Federal Reserve Bulletin*, November 1998, 897–921.

Wilson, T. "Portfolio Credit Risk, Part 1." *Risk*, September 1997, 111–17.

———. "Portfolio Credit Risk, Part 2." *Risk*, October 1997, 56–61.

Winkler, M. *Foreign Bonds: An Autopsy—A Study of Defaults and Repudiations of Government Obligations*. Philadelphia: Roland Swain, 1993.

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11

Drafting Land Legislation for Developing Countries: An Example from East Africa

Norman J. Singer

INTRODUCTION

In the last decade of the twentieth century, numerous countries have radically altered their government and economic systems. The former Eastern Bloc countries of Europe, as well as several African and Asian countries, have moved in the direction of so-called free market economies. In many cases, this has included the privatization of property.

Other countries, while not formerly socialist, have nevertheless found over time that their bureaucratic structures and court systems have become unwieldy, or that their record keeping has been poor enough so that the bureaucracy and legal system no longer serve peoples' needs efficiently. A number of multilateral, governmental, and nongovernmental aid agencies have offered assistance in the drafting of new legislation and regulations designed to smooth the way toward a well-organized system promoting the private ownership of property.

The drafting of such statutes is a time-consuming and difficult process. There are many ways of doing it. The drafter's easiest route is simply to copy a statute from a familiar source and hope it will apply in its new context.[1] Obviously, the best way to prepare legislation for a developing country is to visit the country, examine the particularities of its

This chapter does not deal with banking. It illustrates the problems of establishing basic laws in developing nations. In that regard, it is a problem that bank regulators and others will face in trying to "harmonize" banking laws, especially in developing countries where no such laws exist.

social structure, and ultimately take into consideration the specific needs that exist in that particular place. Very often, the perceived needs of the country involved are not special, and a technical advisor will find it appropriate to utilize some prepared specific draft of a law that has been prepared with global interests. The multilateral aid groups often work in this manner.

Although it is sometimes easiest to use pre-existing drafts of a law or "model laws" to create a more uniform, worldwide method of enforcement and governance, the model law will often not fit in a particular society. It is this situation in which I found myself when I was sent to Zanzibar at the end of the 1980s to help with the program of land reform that had begun there a few years earlier. I was initially confronted with the preparation of a draft of a basic land law which was to be called the Land Tenure Act. This act was to define the relationship between persons and the land. It was a particularly sensitive job since Land in Zanzibar was a highly charged, emotional issue and there had been a bloody coup in 1964 over the question of people's relationship with the land. As a follow-up to the Land Tenure Act, I was asked to create those secondary legislative acts that would assist in the proper administration of the land sector.

This is a brief account of the events and ideas that led to the passage of the Land Tribunal Act of Zanzibar, which was the first follow-on act to the Land Tenure Act of 1993. In many respects, this was a delicate job to perform. At the time the drafting took place, the House of Representatives was made up virtually of a single party; nevertheless, there were many divergent ideas about the issue of land and how land should be controlled. The Zanzibaris with whom I worked during this seven-year stretch (1989–1996) were wonderful people with whom it was a pleasure to work. The solid relationship of trust which we built was as vital to the process as any technical assistance I might have provided. At the end of the seven years, we had not completed all that we had planned, partly due to the intervention of international politics. Consultations still take place in a more informal manner, but active drafting of laws, a necessary continuation of the process that began in the late 1980s, has been curtailed. This is how one of the draft statutes came into being.

THE BACKGROUND AND DEVELOPMENT OF AN IDEA

When drafting a statute, one can choose from a variety of techniques. The most obvious is to copy a statute from another jurisdiction. This is regularly done. Without investigating this issue empirically, it might be fair to say that it is the practice that is most often followed. A drafter can also adopt a statute from a model act that has been prepared by a body whose function it is to prepare statutes on various topics that have been identified as important. Legislative bodies are assisted by such or-

ganizations as the Uniform Commissioner of State Laws in the United States, which has been identifying statutory areas that need attention and has been drafting model laws that the states or federal government can follow. Many statutes have been produced this way.[2] Hybrid laws are also developed. This happens when a statute is developed by using basic principles from a prior existing law, but the drafter adapts it to the specifics of a certain jurisdiction. For example, I have taken the basic Torrens type land registrations act,[3] which is usually found in a common law jurisdiction, and adapted it to a civil law jurisdiction.[4]

Special needs often arise which call for a statute that has no specific precedent. The drafting of these statutes is done more or less from scratch. It is not clear how often a drafter has to start with an idea and build the statute step by step to develop the system or concepts that will become the fundamental ideas that constitute the statute. The statute discussed in this chapter is one that required basic structuring from point zero.

Before discussing the drafting methodology, it is necessary to explain briefly what the statute is about and why it was essential to start from scratch. The statute in question, known as the Land Tribunal Act, developed out of the work I was doing for the Food and Agriculture Organization (FAO) of the United Nations (UN) and the Finnish International Development Agency (FINNIDA).[5]

A team was working in Zanzibar to promote land reform. Land disputes in Zanzibar were relatively common and frequently took a long time to settle—sometimes as long as twenty years. The government was determined to resolve many of the differences that had arisen (and had led to the revolution of 1964) by instituting a formal land registration system. This involved formalizing and in many senses changing much of the rather complicated land-holding system. It was felt that, with change coming, there was a good chance that many more land disputes would occur. The government decided to develop an institution that would take land disputes out of the court system and deal with disputes informally and with dispatch. As the legal advisor to the Commission for Lands and Environment, I was asked to develop an institution that could hear and resolve land disputes in an expedited manner without tying up court time.

There were two immediate policy decisions that I had to face. The first was the institutional form: how many persons should sit on a panel, what should their background be, under whose authority would this institution be constituted, how many panels should be created, and what should the overall jurisdiction of the institution be. The second policy decision involved the kind of process that should be included in an informal institution: what kinds of procedures should be created in order for the institution to run smoothly.

The first problem was partially a matter of Zanzibar social structure.

All societies have both formal (often court-based) and informal, traditional methods of dispute resolution. I had to determine the manner in which the Zanzibaris operated their informal dispute-settling system and how tied to modern courts the government might be. This kind of inquiry can be a touchy matter because any reference to traditional structures can imply "underdevelopment" or lack of development when the government is striving to institute procedures that have a developed or first-world-country sense to them. I was concerned about proposing that Zanzibar get involved in a kind of institutional development that might imply that they were "backward" and could not cope with the type of institutions of the developed world. It turned out that in Zanzibar this would not be an issue; the political leaders were more interested in solving the problem they were convinced was looming when land reform commenced than they were in looking "good" to outsiders.

To investigate this social-structural question, the director of lands[6] and I made a number of trips into the countryside. Fortuitously for us, Zanzibar was about to hold its first multiparty election. When there was a single-party system, all local government affairs were controlled by the local party secretary who was the local CCM[7] representative. However, when the multiparty system came into being, the local government representative was no longer the party secretary, but the "Shehia," the former traditional village head or elder. The reinstitution of the Shehia system promised to make the introduction of a dispute-settling system that was similar to the traditional one that was operating on the countryside much less controversial.[8] Thus, one of the problems was more or less settled. We assumed that, as a matter of policy, we could proceed with a system that took the traditional dispute-settling format into account. In this, we proved to be right.

The second problem was structural. It had to do with how much structure had to be brought into this new institution in order to give it the necessary authority when it attempted to settle a dispute. After spending a number of years dealing with informal dispute-settling systems in various African countries, I thought that the more informal the process the stronger it would be as a dispute-settling institution in the eyes of the populace. This would mean the institution would be operating very much as the traditional "tribal" system had operated in the past. Even though I believed in informality, I thought some real legal procedure should be involved in this institution to make it work both informally, in the informal sector, and formally, in the government bureaucratic sector. This meant trying to define how many formal legal procedures should be imported into this informal sector. Over the next nine months, I had to devise a format for presenting ideas to what I assumed would be a working group that ultimately would make all the policy decisions about how the institution should take shape.

This raised the problem of how the working group should be consti-

tuted. When the Zanzibar Land Tenure Act was drafted, a working group was formed, including the executive chairman, the executive secretary, four department chairpersons, and the senior civil servants who had been in the Commission for Lands and Environment for some time. They were joined by a senior legal officer from the attorney general's chambers and the principal secretary of the Ministry of Water, Energy, Construction, Lands and Environment. This working group met every day for a period of twelve weeks. The first week featured a seminar on land management, land policy, and ultimately land law. When we finished the background work and started with the actual drafting, it was up to me as the reporter/secretary to the group to develop an organization or working procedure that would allow us to discuss the issues for the various articles in some organized fashion. We started with definitions and then the organization created itself with some prompting from me.

I kept notes of our discussions and at the end of each day (we met the entire working day, six days a week), I incorporated the notes into a series of proposed articles. The next day we would start our discussion by reviewing the sections we had presumably finished the day before. We then made further amendments to those sections and continued to consider new sections. We followed the same procedure until we had produced a working draft. We reviewed it and reconsidered many of the policies in the draft. When it was in what we considered the final shape, we sat down with the minister, who had to approve what we had done, since he would present the finished draft to the House of Representatives.[9]

We did not, however, follow this process for the Land Tribunal Act. The leadership personnel in the Commission for Land and Environment did not have enough time to participate in a prolonged policy discussion concerning the proposed act. The preparation of the draft, including the creation of a structure for the institution, was left up to the drafter. The FINNIDA consultant was to prepare a draft, which was the normal function of a legal advisor.[10] Since I was not residing in Zanzibar, but visited every several months and remained for varying lengths of time, most of the drafting work would be done in the United States.

I had to develop a strategy for preparing the draft of the act. The first thing I did was to introduce a name for the institution: the Land Tribunal. I did not have a plan for the creation of the operational specifics. I thought that there should be specific legalistic rules of operation to go along with a strong structure. I had to use my own resources to develop the plan.

After some thought, I decided to go through existing legislation creating informal legal institutions. In that way I would get an idea of what kinds of procedures might work best in this new "tribunal." My research assistant and I started with a consideration of small-claims courts which

exist throughout the United States but are not uniform. We then researched as much legislation creating informal legal institutions as we could locate. I read through all of the legislation, kept files on the different procedural devices that were used, made notes about the different points, and then started developing the outline of what an ideal tribunal might look like. The end result is a combination of elements that appeared in one dispute-resolving institution or another and seemed to be logical for the creation of a special tribunal that would deal with land disputes. The components that were included to make Zanzibar's Tribunal a functioning institution are discussed in the next section.

THE DRAFTING PROCESS

The outline of the plan included a standard introductory part,[11] which notes the title of the law and includes any definitions that might need clarification. This was followed by three substantive sections and a fifth part in which any miscellaneous sections that do not logically fit into the other parts are included. The miscellaneous part, in this instance, includes sections setting out the kinds of fees that apply to the tribunal, a reference to the kind of regulations that need to be drafted to explain the technical workings of the act, any other act that needs to be specifically or generally repealed in order to make this act function properly, and any other laws that are referred to by this act which have provisions that are not included in this immediate act but need to be incorporated by reference into this act. The core of the act is the three middle parts.

Thus, the final working draft of the Tribunal Act had five parts:[12]

Part 1: the preliminary part

Part 2: the location, staffing, and power of the Tribunal

Part 3: the jurisdiction of the Tribunal and process of the hearing

Part 4: the operating procedure of the Tribunal

Part 5: miscellaneous sections.

Parts Two through Five are discussed in this chapter to show how policy decisions were made to construct a piece of legislation that created an informal, yet legally structured, tribunal system.

Location, Staffing, and Power of the Tribunal

The Tribunal was to be set up with central operating offices on each of the two principal islands of Zanzibar: Unguja (also known as Zanzibar) and Pemba. There is a president of the Tribunal, who is resident in Unguja/Zanzibar Town (the capital), and two vice presidents, who are

responsible for the day-to-day operations of the Tribunal on each of the islands. The president of the Tribunal, who is the chief administrative officer, does not normally sit as a hearing officer. However, if the demand warrants it, the president will sit as the chairman of a hearing panel. Although the central offices are located in the two principal towns of each island, the vice president can allow the Tribunal to hear cases at any time or place that is convenient. Thus, the Tribunal does not operate as a court with a set location for the hearing of cases. The hearing can be located anywhere, as long as the administrative office of the Tribunal is able to inform the persons relevant to the dispute. This, in essence, means that the Tribunal may convene on the land that is the subject of a dispute or at any other place that is convenient to the parties enabling witnesses to testify without suffering any undue inconvenience.

A panel is made up of a chairperson and two assessors. In the normal course of events, one of the vice presidents serves as chairman. However, when there are many disputes, the president, with the concurrence of the relevant vice president, may appoint one of the assessors or any other relevant person to serve as the chairman of a hearing panel. In this way, multiple panels can hear disputes at the same time, if the demand exists.

The Tribunal maintains a list of persons with special qualifications, in case the dispute deals with technical matters[13] requiring special information. The list may be used to appoint a person as a chairman of a hearing panel or to appear as an expert before the Tribunal. In either case, the president of the Tribunal informs the persons who are on the list that their services might be necessary if and when a case arises where special technical information is needed.

The Tribunal has been given powers similar to the High Court of Justice.[14] It can subpoena persons (both parties and witnesses) to attend a hearing, order the production and inspection of documents, enforce its own orders, have access to property for purposes of inspection, and also assume all the other powers and duties of the High Court. Because this is a very extensive set of powers, great care must be taken in the appointment of the three persons who are responsible for the operation of this system. There was a great deal of discussion about whether the president and the two vice presidents should be trained lawyers. It was finally agreed that, because of the general shortage of trained lawyers on Zanzibar, although it would be preferable to appoint a lawyer, a person of high social standing who has the respect of the community at large would be an acceptable appointee. These persons would be eligible for reappointment. (In Trinidad and Tobago, where there are many trained lawyers, the draft of the Tribunal Act requires that the president and vice presidents be trained lawyers with no less than ten years of professional experience.)

In addition to the three persons who would be appointed for five-year

terms by the president of Zanzibar, assessors would be appointed by the president of the Tribunal with the agreement of the vice presidents. The number of assessors would not be determined in advance. The individuals chosen would be people who are accorded great respect by their communities and who have been known for their involvement in the dispute-settling process. They are called at the pleasure of the president and vice presidents and join the process when a case is to be heard that is relevant to them, either because of their subject-matter expertise or because of the location of the land that is under dispute. There is, of course, the right of any of the persons working with the Tribunal to resign his or her position. The president of Zanzibar, on the recommendation of the president of the Tribunal, may remove any assessor or other officer for cause, including the inability to perform, misbehavior, or any other grounds for which there is an indication of incompatibility with the functions of the Tribunal.

In addition to the president and vice presidents of the Tribunal, there shall be a registrar and two deputy registrars who are to be located in the offices of the vice presidents. The registrars are the actual implementers of the administrative duties of the Tribunal. They receive and issue all the documents that are part of the process. People wishing to schedule a hearing deliver a written petition to the registrar who, after consultation with the president or vice president with whom he or she works, sends summonses or subpoenas or any other notices that are required under the process of the Tribunal. The registrar is also responsible for notifying persons that they are sitting as a chairman or assessor of a hearing panel informing them of the location, time, and date of the hearing. The registrar is responsible for transmitting all the documents relevant to any hearing to the persons who are to be hearing the dispute.

Subject Matter Jurisdiction of the Tribunal

At the outset, the question of what kind of power the Tribunal should have was unclear. The model was being developed for Zanzibar where land reform plans called for the introduction of written registration and the accompanying adjudication.[15] The mechanism of hearing claims is an integral part of the adjudication process. Even though the Land Tribunal was being considered as a long-term institution, at the outset it was seen only as a mechanism to deal with claims in the adjudication of land disputes in the first registration process. It became important to define the exact nature of what was meant by the term "land disputes."

At first, it seemed clear: a land dispute was anything that stood in the way of clear title when the property in question was in the process of being transferred. This included boundary disputes which arose in third-party sales agreements or in matters of succession. But in the attempt to

define the extent to which claims or disputes could be defined in the aforementioned circumstances, it was realized that there are numerous situations in which disputes can be generated which affect a parcel of land. It was then decided that the full range of environmental problems had to be included in the jurisdictional power of the Tribunal. The final jurisdictional statement, in Section 23, looked like this:

The Land Tribunal shall have primary jurisdiction over proceedings instituted where parties have conflicting claims to land, including the following issues:

a) actions involving claims of a right to ownership, a right of usufruct and/or a right to possession in respect of any land;
b) the demarcation of land which is connected to activities related to the subdivision of parcels and any matter for which demarcation or surveying must be carried out;
c) the registration of land;
d) the use, development and capacity of land;
e) the partition of holdings in which potential multiple ownership is involved;
f) land valuation and issues involving compensation for land;
g) building or tree preservation orders;
h) removal from possession or eviction from land;
i) expropriation of land by the government;
j) agricultural or agro-industrial contracts of lease;
k) transfer of property in contravention of the applicable law;
l) exchanges, illegal subdivisions and other irregularities involving improper division or partition of land;
m) succession to land;
n) possession of either urban or agricultural land;
o) use and development of land for purpose of conservation and development and the use of natural resources;
p) the recovery of publicly held land from a person in possession;
q) any issues over the display of an advertisement;
r) any issues involving a compliance order, a compliance notice, an environmental repair order and any matter in which an issue of breach of planning control is raised under any section of any planning and development act in force; and
s) all other matters relating to land.

Although these provisions do not state explicitly that any environmental issues relating to land should be heard by the Tribunal, they are included in this section. In the end, the jurisdictional statement must be given the most inclusive reading possible. It is in that context that the

president of the Tribunal has to have access to individuals who are expert in special fields that relate to land. Such a specialized individual would either sit on the hearing panel as a chairman or appear as an expert witness when called.

Representation and the Expedited Process of Hearing a Dispute

The procedure through which the Tribunal works is aimed at reaching a decision that is acceptable to the parties in the shortest and least complicated fashion. At any time during the proceedings, the chairman can, with the agreement of the parties, change the process into a mediation proceeding. If the chairman feels that he or she can bring the dispute to a conclusion, the chairman may unilaterally issue any order which is designed to reduce the duration of the process. The overall object is to proceed with a hearing in as informal a manner as possible. The system does include provisions for requiring pre-hearing information and conferences in order to provide the disputants and the panel members with as much information as is necessary in order to proceed in an orderly, yet informed, manner.

Even though it was hoped that most disputes would be settled directly by the parties, it was felt it was not possible to exclude lawyers or other representatives from the process. In the ideal resolution, the parties to the dispute would not be represented by counsel and would provide the panel with the information necessary in a straightforward manner. However, legal representation is not forbidden, nor is any other type of representation.

The Operating Procedure of the Tribunal

A case begins when the claimant[16] files, with the registrar of the Tribunal in the district where the dispute has arisen, a short and plainly written statement showing what the claimant claims and why he or she claims it. Assistance is provided on Form LT-1, the Statement of Claim. This provides the claimant with plainly written instructions that are aimed at providing all the assistance necessary for the purposes of properly filing the claim. In all, there are twenty-four forms which provide assistance with each possible step of the process.[17]

The petition is followed with an answer and the possibility of a counterpetition by the respondent. If these documents are filed, the stage is set for an attempt to terminate the dispute prior to a trial. At all times, according to sections 39, 40, and 41, an attempt should be made to terminate the dispute through settlement. The chairman of the hearing panel is empowered to bring in any information or persons who might

assist in an early termination of the process. In addition, once the pretrial process commences and the chairman institutes his or her attempt to terminate the dispute, any additional party may join the dispute by presenting to the chairman of the panel a written statement of the relevance of their intervention. The chairman has the discretion to allow the intervention if it is felt that it will assist in an early termination of the entire dispute.

The chairman has the power to issue a protective order to ensure that a party will not be pressured to testify dishonestly and to protect any witness who may be called to testify in any given dispute.

In keeping with the mandate to ensure that the process is an expedited one, the trial must take place no later than twenty-one days following the answer to a counterpetition or the decision to allow an additional party to intervene. The notice of the time and place of a trial must be communicated, by the registrar of the district where the petition was filed, to all relevant persons fourteen days before the scheduled trial. At the trial, whether or not the person is represented by a lawyer, that person shall have the right personally to question the other parties and the witnesses. The three members of the hearing panel are encouraged to participate actively in the examination of the parties and the witnesses. The hearing panel can receive properly certified written or recorded statements of witnesses or parties who are not present at the trial.

No rules are to limit the presentation of evidence that the parties feel is relevant to the dispute at hand. However, the chairman may limit the presentation of evidence which is deemed irrelevant, immaterial, abusive, unduly repetitious, or in any way delays the normal progress of the hearing. The reason for not limiting the presentation of evidence is that the purpose of the hearing is to try to get at the source of the dispute. It is felt that if the parties are allowed to present their versions of the facts, with the necessary interruptions and possible violations of the strict rules of evidence that are in place in a "regular" trial, there is an increased chance that facts could ultimately come out that would allow the members of the hearing panel to help direct the parties to a resolution of their difficulty. This has been a controversial provision in this draft law. There is a tendency of lawyers to accept an informal process, but not to the extent that they will forego the sacred rules of evidence. Yet strict rules of evidence often have the effect of limiting the information that is available to the decision makers and thereby restricting the justice of the decision.

If the parties do not agree to a termination of the dispute through this informal give-and-take, the hearing panel shall hand down a decision by majority vote. If there is a question of law[18] to be decided, the chairman, who will usually have legal training, will make the determination. This is a compromise that was included in the act to appease many lawyers

who prefer to have this process controlled by legally trained individuals. Lawyers sometimes make the assumption that a person without legal training cannot deal with "legal" questions.

The hearing panel may use any formula for the payment of compensation that it feels appropriate in the matter. If possible, payment of compensation should put the least amount of burden on the person required to pay. The payment formula should be reached through the agreement of the parties. Under no circumstances should the installments be extended for more than three years. If there is a question concerning the terms of payment of compensation, an application for another hearing may be filed with the president of the Tribunal.

Once a decision has been made by the hearing panel, any party to the dispute may file a petition for reconsideration, stating the specific grounds upon which the petition for reconsideration is made. The petition must be filed within ten days after the issuance of the decision of the Tribunal. The petition of reconsideration should be heard by the same hearing panel that made the decision. A written opinion accepting or denying the petition in which the decision is dissolved, modified, or granted must be issued within twenty days of the receipt of the petition for reconsideration. A review of the decision of a hearing panel may then be pursued through application to the president of the Tribunal. Finally, if a matter of law is involved, an appeal may be taken to a regular sitting trial court. Appeal is not possible for the clarification of facts or where there is a question concerning compensation.

The enforcement of judgments is pursued through the normal channels which deal with the enforcement of any legal decision.

Miscellaneous

The final part of the act deals with a number of miscellaneous items. For instance, this part sets out a fee schedule for petitioning the Tribunal. There is also a reference to regulations that can be prepared later for the clarification of issues that might arise. The forms used as part of the act come under the regulations section as well. Finally, there are two sections which make this act relevant to the disputes set out under the jurisdiction section by stating that the act is superior to any other law for matters specifically set out in this act. There is also a general and specific section which repeals other acts in which there is a conflict with the provisions of this act. Finally, there is a subsection of the repeals section that says this act does not operate retroactively. Any matter that was commenced prior to the passage of this act is governed by the prior existing process.

CONCLUSION

Modified versions of this act were proposed in three different countries (Zanzibar, Trinidad and Tobago, and Albania) in which the author was part of the team providing technical assistance. In each country, the draft act was adapted to meet special needs. So far only Zanzibar has adopted a Land Tribunal Act.

In Zanzibar, the government made a firm commitment to the introduction of a land registration system and to land reform. Memories of the 1964 coup played a major role in this commitment, and the government has consistently taken the position that land should be provided to as many citizens to be used in as productive a manner as possible. Since the late 1960s many social and legal issues have been dealt with in a formal legislative manner, but there is currently a shortage of trained lawyers in Zanzibar. Although that was never stated as one of the reasons for going to the informal "tribunal" system, it was probably an unstated reason. The system of local governance in Zanzibar is tied to the traditional social structure through the system of Shehias. The new land tribunals support that system of local rule. In any case, there was never a concern by Zanzibari officials that the introduction of the land tribunal would have any negative effects on the existing social structure. (I felt it would encourage the move toward decentralized rule.) The act has been in place for five years, and no issues concerning its operation have been raised. To date, there has been no opportunity for me to observe it working.

The Albanian situation is a bit different. After a long experiment with socialism, the Albanian social system is emerging into a new market-oriented economy with all of its trial and error. Many of the proponents of a free market economy have interpreted this to mean that there should be no controls or government intervention in the economy. In addition, Albanian policy makers must orient themselves to a new and unfamiliar legal system. The drafting of a civil code—the preparation of many laws that deal with issues that have to be dealt with in the society—has proceeded in an unimpeded manner since late 1992. However, the perception that predominates is simply that the "formal" legal system will deal with all problems that might arise in land or other areas. The idea of creating an alternative system to alleviate the burdens of the ordinary court system was an irrelevant consideration since the courts had not yet been overburdened. As the first registration process of the new land registration system proceeds, many disputes requiring court intervention have been cropping up. Although no formal moves have been made to reintroduce the idea of creating a land tribunal, the discussion among the persons responsible for handling land matters has been that the time

is nearing when formal consideration of the tribunal idea should be introduced. There is now more understanding of the way in which disputes and laws are handled and a greater willingness to try to prevent the courts from becoming overburdened. It appears that in the not-too-distant future, the idea of informal dispute resolution through a land tribunal will be reconsidered.

In Trinidad and Tobago the idea of a land tribunal was accepted as long as ten years ago by the officials who deal with land. In that country, the courts are considerably overburdened with case backlog. The proposal for informal tribunals was formally presented before the Cabinet, which adopted the idea that a land tribunal should be put in place to take the pressure off the trial courts. The preparation of a draft was included in the terms of reference of a pre-loan activity with the Inter-American Development Bank. A draft, adapted to the needs of Trinidad and Tobago, was prepared, and the legal officials in Trinidad and Tobago tried to define and redefine what a land tribunal should be and how it might be structured. The members of the government are now trying to define what they would like the act to say and how they would like the process to be defined. Trinidad and Tobago has a very formally oriented practicing bar, and there is general opposition among lawyers to introducing an informal process. One can only hope that, as the decision has been taken by three successive governments of different political persuasions that a land tribunal should be introduced, it will happen in due course.

The idea of introducing an informal legal process to handle ongoing land disputes is a timely matter. Many countries are in the midst of considering a program of land reform or are already involved in the process. The number of disputes that exist are numerous; the number of disputes that will be generated are many. There needs to be a process that will assist the ordinary courts to deal with the many long-term disputes concerning land.

APPENDIX A
Table of Contents of the Sections of the Zanzibar Land Tribunal Act[19]

APPENDIX B
Table of Contents of the Sections of the Zanzibar Land Tribunal Act Regulations

APPENDIX C
Table of Contents: List of Forms to Accompany the Land Tribunal Act

LT-23 Certificate of a True Copy
LT-24 Attachment of a Witness

NOTES

1. A good example of this occurred when a consultant simply copied the Condominium Law of the District of Columbia in the United States for adoption in Albania. The law presented many incompatible elements and eventually the Albanian government had to make a number of redrafts. Unfortunately, the parliament had already acted on the first submission. A replacement bill was eventually presented and passed.

2. For example, the Uniform Child Custody Jurisdiction Act, which regulates child custody issues when there is more than one state involved, has been adopted either directly or with a version that looks remarkably like the original in all fifty states. There are many other uniform acts.

3. This geographically based title registration system, developed in South Australia in the nineteenth century, is used throughout the world where British or British like-law has been adopted.

4. See the Albanian Immovable Property Registration Act, Law No. 7843, 13 July 1994. See Lida Stamo and Norman J. Singer, "Albanian Immovable Property Registration System: Review of Legislation" Working paper no. 7, Albanian Series, Land Tenure Center, University of Wisconsin-Madison (1997).

5. I first went to Zanzibar in 1989, sent by the FAO, to assist in the preparation of legislation that would create farmer's associations in the irrigated rice cultivation zone. While I was working at the Ministry of Agriculture I met the project head of another short-term FAO project who was assessing the issues of land use. I was asked to return as part of this second project which called for a land tenure expert whose role the officials assumed I could fill. While working on the second project, the issues of the long-term land reform plans emerged. FINNIDA had already started their land use activities in the Commission for Lands and Environment, and we were brought together as the personnel I needed to work with were in the Commission for Lands and Environment as well as the Ministry of Agriculture. The two projects came together, but it was clear that the FAO would be unable to make the long-term financial commitment that was necessary to bring these activities to fruition. FINNIDA was willing to make some of the commitments. At this point, the FAO phased out, I was employed as a FINNIDA consultant, and we started our work on the Land Tenure Act. This all transpired at the end of 1990 and the beginning of 1991.

6. The director of lands is the head of the Department of Lands, which is one of the four Departments of the Commission for Lands and Environment. The commission was the lead institution in the proposed land reform. The executive chairman is the head of the commission with the status of a minister. The executive secretary is second in charge. This person has the status of a principal secretary—the technical head of the cadre of civil servants in a bureaucratic organization. However, the commission is also a constituent part of the Ministry of Water, Housing, Construction, Lands and Environment, which also has a minister and a principal secretary. One of the problems that existed was in making

policy decisions. After the working group would make the decisions that had been accepted by the hierarchy within the Commission for Lands and Environments (including the executive secretary/principal secretary and the executive chairman/minister), the decision had to be reviewed by the principal secretary and the minister of the "main" ministry. We were never, in the eight years that I worked with the commission, able to clarify the role that the executive secretary and executive chairman would play in the decision-making process. This hierarchy was complicated by the fact that the executive chairman was a former minister of finance who is one of the lead ministers in the cabinet.

7. The revolutionary party is known as Cha Cha Mapinduzi, or CCM.

8. It should be noted here that the reintroduction of the Shehia system, in fact, went very smoothly. All my training told me to be wary about the "presumed" step back into a bygone tradition, but the strength of the Zanzibar character was such that the people stopped referring their local government problems to the party secretary and started going to the local Shekh. It was a marvelous thing to see. It turned all the theories of what would happen in a developmental situation upside down.

9. The minister first had to present it to the appropriate committee for consideration and then act as the floor manager when it went to the entire House for consideration.

10. By that time, I was already considered the de facto legal advisor to the commission. The position was not one to which I was formally appointed, but as long as there was a budget in the FINNIDA project, the leaders in the commission continued to invite me back, three or four times a year, and I was briefed on all legal matters. In this respect, I was treated as a member of the staff by the executive chairman, executive secretary, the principal secretary in the ministry, the director of lands, and the director of surveys. This strong endorsement meant that I was able to work without the oversight of the working group. I was on my own to prepare a draft, which was to be considered by the senior staff of the commission.

11. The outline follows the standard British legislative style. This is the manner in which Zanzibar, a former British colony, drafts most of its laws.

12. These five parts were actually passed by the Zanzibar House of Representatives.

13. Examples might include an expert on erosion, waste, or water management; a surveyor who could testify about boundaries; or a fisheries expert, to name a few.

14. The High Court of Justice is the trial court with the broadest power.

15. The adjudication of land rights is the clarification of who has the legal right of ownership of the parcel of land in question in order to enter the information in the Registry for purposes of the initial or "First Registration."

16. The parties are called the "claimant" and the "respondent." There was a great deal of discussion concerning what the parties should be called. The use of the terms "plaintiff" and "defendant" were eliminated at the beginning because those terms connoted too much of an adversarial relationship. The Tribunal was set up to bring the parties together through compromise, if possible. The use of more neutral terms was thought to be proper.

17. Unfortunately, because of space constraints, the forms are not included in this presentation; however, a list of the forms appears in Appendix C.

18. Land disputes are, for the most part, misunderstandings over facts. There are inevitably questions of law involved, but most of the disputes can be terminated by setting the facts straight. A large number of the disputes, for example, are border disputes, which are generally factual.

19. This is substantially similar to the drafts that have been prepared for and adapted to Trinidad and Tobago and Albania.

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