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A Study for the Government Official Inquiry on the Competitiveness of the Swedish Financial Sector

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I. Introduction

The financial system is regulated to achieve a wide variety of purposes. However, 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 have 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, nonetheless. Banks are becoming less special. The US 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 thus 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.

II. 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. 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, actual 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.

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[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).

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

As an examination of the Systemic Risk column of Figure 1 indicates, a substantial number of regulatory measures have been justified on grounds that they help safeguard the financial system from systemic risk. However, research has shown that a number of these measures, such as restrictions on product lines, are ineffectual at best in safeguarding against systemic risk and may weaken regulated institutions by preventing them from meeting the changing needs of their customers. Some measures, such as interest rate ceilings on deposits that were intended to prevent "excessive competition", may actually exacerbate vulnerability

Figure 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	✓			✓

Adapted from Herring and Litan (1995)

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. We will examine systemic risk and measures to counter systemic risk in greater detail in sections III and IV.

II.B. Protecting consumers

The second fundamental rationale for financial regulation is the protection of consumers against excessive prices or opportunistic behavior by providers of financial services or participants in financial markets. (See the Consumer Protection column of Figure 1.) Antitrust enforcement is the most obvious policy tool to counter excessive prices.

Competition policy is motivated not only by the concern to protect consumers from monopolistic pricing, but also by the aim of harnessing market forces to enhance the efficiency

of the allocation within the financial sector and between the financial sector and the rest of the economy.[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 execution of a transaction. They are also vulnerable to *moral hazard*, the possibility that firms or agents will put their own interests or

[3] See section IIC for a further discussion of this point.
[4] See European Commission, 1998.

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 conduct of business rules with civil and criminal sanctions will deter firms from exploiting asymmetric information vis-à-vis customers. Strict enforcement of conduct of business rules also provides firms with incentives to adopt administrative procedures that ensure consumers are competently and honestly served and that employees will behave in a way that upholds the firms' reputation. Conflict of interest rules and customer suitability requirements serve a similar function.

The provision of insurance is another response to the asymmetric information problem faced by unsophisticated consumers. One of the rationales for deposit insurance is to protect unsophisticated depositors of modest means who would find it excessively costly to monitor their bank. This is articulated particularly clearly in the Deposit Insurance Directive of the European Union. Other kinds of financial contracts are also insured for the protection of unsophisticated consumers. In the 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. But with the adoption of the Insider Trading Directive of the European Union and the disclosure of significant insider trading in Japan in the early 1990s this has changed (Herring and Litan 1995).

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.

II.C. Enhancing efficiency

Competition policy and anti-trust enforcement are the key tools for enhancing the efficiency of the financial system as can be seen in the Efficiency Enhancement column of Figure 1. In addition to prosecuting price-fixing arrangements, the main emphasis here is to minimize barriers to entry into the financial services industry. In this light, "fit and proper" tests established for consumer protection purposes appear to be anti-competitive and unnecessary. After all, the expectation of repetitive transactions with a client will give firms reason to be concerned with their reputations. This will reduce the risks of adverse selection and moral

hazard to customers, except when the expected gain from taking advantage of a client is very large or when the interests of a firm's employees differ from those of the owners.

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

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

Finally, financial markets provide critical information that helps to coordinate decentralized decisions throughout the economy.[5] Prices in financial markets are used by households in allocating income between savings and consumption and in allocating their stock

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

of wealth. These prices also help firms decide which investment projects to select and how they should be financed. Financial markets will provide better price signals and allocate resources more efficiently the better the access of participants to high quality information on a timely basis. This applies not only to information regarding issuers of financial instruments, but also to financial institutions themselves and the products they sell. Disclosure standards thus also serve an efficiency rationale as well as a consumer protection rationale.

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.

II.D. Achieving other social objectives

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

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

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 had 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 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 that have raised serious concerns about violations of privacy rights. Similarly the new Financial Services Authority in the United Kingdom (Davis 1998, p. 2) has adopted the objective of "preventing … financial businesses being used for the purposes of financial crime."

III. 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 non-financial 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. And, 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.

However, one motive for financial regulation is distinctive to the financial services industry. Systemic risk motivates a considerable amount of financial regulation but 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's special about banks?

Many of the products and services provided by contemporary banks are indistinguishable from 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 in section V. However, the argument that banks are special is based on: 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 non-market 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 returns from the investment project, as borrowers respond to on-going 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 payments 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

[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.

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, and 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.

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[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.

From 1980 to 1995 more than three-quarters of the members of the International Monetary Fund experienced serious and costly banking problems. In 69 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 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 due to the disruption of the payment 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 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 non-financial 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/or 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 suspected, weaker banks and reallocating their portfolios in favor of deposit claims on banks perceived to be stronger or claims on the government.[16] The result is a flight to quality and a banking panic that destroys not only 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 policymakers to act.

Prudential regulation and supervision to safeguard against systemic risk arises in the first instance from this externality. While bank managers and shareholders of a bank have appropriate incentives to take account of losses to themselves if their bank should fail –

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[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 balances 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.

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 is designed to counteract the incentive for excessive risk-taking.

IV. 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 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 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 as discussed

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[18] This safety net is discussed in greater detail in Guttentag and Herring (1989) and Herring and Santomero (1991).

earlier in section II.B., it may also play an important role in stabilizing the banking system against shocks. The protection is imperfect, however. Even in the US, where the link to financial stability has been most explicit, deposit insurance has been limited, leaving some depositors vulnerable to loss. Thus, the possibility of a run continues.

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 19th 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 US monetary authorities failed to do during the Great Depression. But the lesson was not wasted. Most modern monetary authorities are committed to maintaining policy control over the reserve base.

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[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.

In the major industrialized countries, the various circuit breakers that comprise 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 which 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 time 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

[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 (1996).

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 US has been estimated at less than five percent of GDP, and 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 country's financial capacity.

This has led many to argue that financial regulation and the safety net itself needs 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.

V. 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.

V.A. 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 US, the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA) required that the Federal Deposit Insurance Corporation (FDIC) implement a system of risk-rated deposit

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

insurance premiums. However, to date the result has been very crude. The maximum price difference between the safest and the most risky bank when the system was implemented was 8 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 the 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]

V.B. Prompt corrective action and least cost resolution

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

[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, while a few very risky banks had fair premiums in the 1000s 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 that the government insurer faces. 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.

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 90 days. The objective is to provide the bank's owners with incentives to take prompt corrective action by recapitalizing the bank or 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.

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. 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. 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 Fed

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[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.

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 Fed behavior when a large bank is in jeopardy remains to be seen. But there is at least some reason to doubt that protection will be automatic and this should enhance market discipline.

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.

V.C. 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 that 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 that may choose higher points on the risk-

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

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 actions of the managers, creating a broader market reaction. Moreover, market prices are more forward looking than regulatory examinations and 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 subordinated debt holders would face the same informational asymmetry problems that the deposit insurer faces, 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.

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[28] FDICIA called 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 (1995, p.455) observes "an outside risk sharer must be able to persuade institutional managers to open their books in ever-changing and nonstandard ways."

V.D. 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, and Miller 1995) require that insured deposits be invested only in short-term Treasury bills or close substitutes. Banks would also issue non-guaranteed financial instruments such as commercial paper to fund conventional bank loans, just as finance companies and leasing companies now do.

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.

VI. 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 payment system which gives them a balance sheet structure that is uniquely vulnerable to systemic risk.

Indeed, in most countries, banks retain a central role as the most important providers of credit. (See Figure 2.)

Figure 2. Banks' share in financial intermediation, 1994

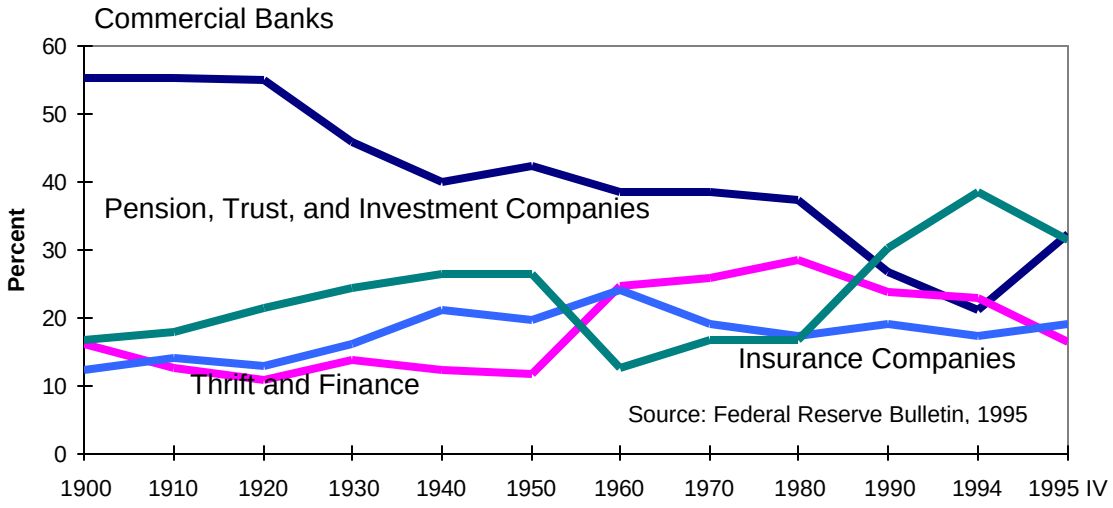
Germany	77%
Japan	79%
Sweden	79%
United States	23%

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

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

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

Figure 3. Relative shares of total financial intermediary assets, 1900-1995 Q4



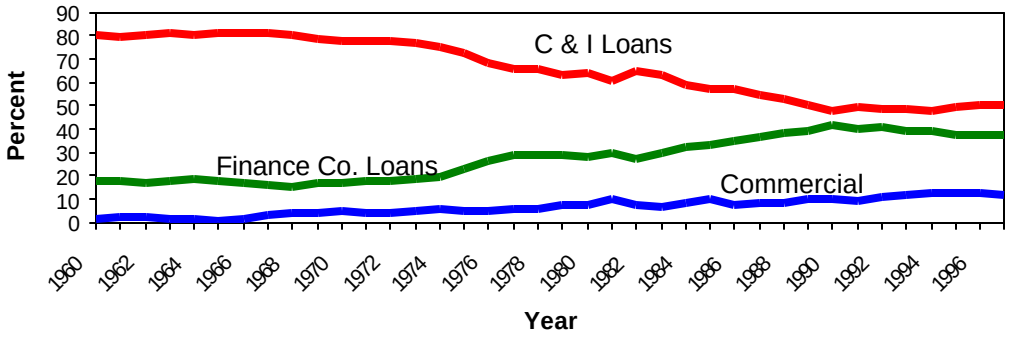
1920s were an era much like the last two decades in which the share of assets held by banks declined and that of pension funds trusts and investment companies grew. In the broader historical context the anomaly may have been the relative stability of the bank share of total assets from the 1940s through the mid-1970s. Figure 3 offers some evidence of this for the US 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 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.

The impact has been most dramatic on the asset side of banks' balance sheets. The

Figure 4. Commercial and industrial loans as a share of short-term business finance, 1960-1998



Source: Board of Governors of the Federal Reserve System, "Flow of Funds accounts," 1998.

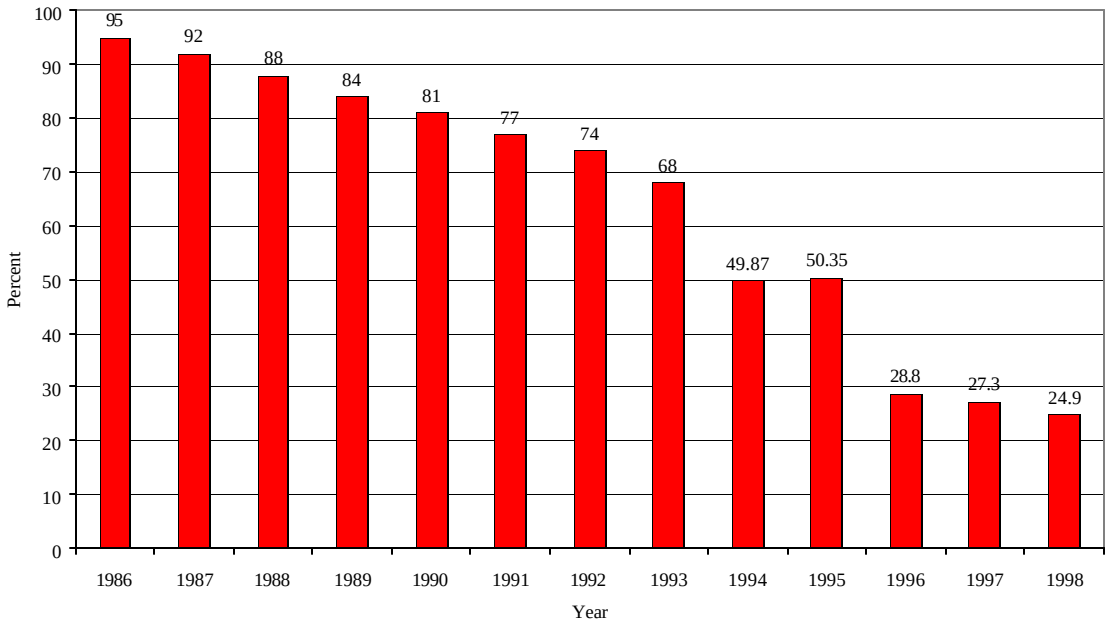
increased institutionalization of consumer savings, especially in pension plans, life insurance and mutual funds, has given other institutions the scale to assess and diversify credit risk in competition with banks. Improved disclosure standards have made information regarding the creditworthiness of 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 US context with regard to business finance as Figure 4 indicates. 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, under-priced junk bond.

The decline in business lending is also mirrored in consumer lending. (See Figure 5.)

Figure 5. Bank market share of credit card receivables, 1986-1998

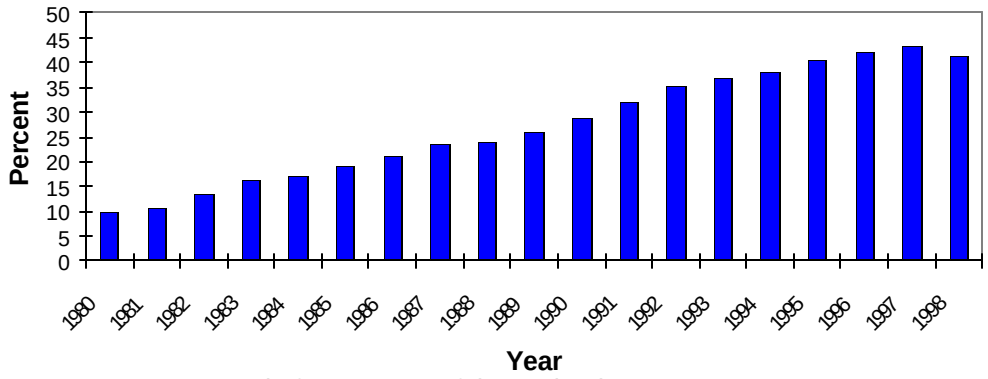


Banks have lost market share to nonbanks such as AT&T, GMAC, GE & Morgan Stanley Dean Witter. Twenty years ago, banks completely dominated the card-transactions processing business. Now, banks hold less than 25% of receivables and close to 80% of credit card transactions are processed by nonbanks such as First Data Resources.[31]

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

[31] See Business Week, June 12, 1995, p. 70.

Figure 6. 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

transformed the way in which many kinds of credit transactions – which would previously have been conventional bank loans – are structured.

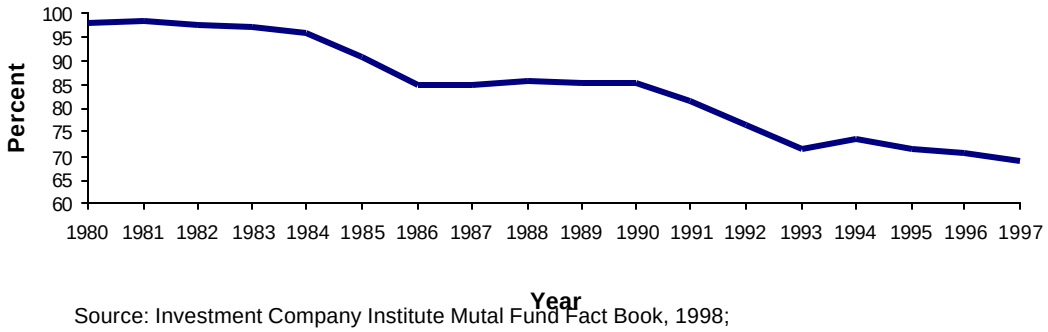
The growing importance of securitization is especially obvious in the transformation of the traditional mortgage. (See Figure 6.) Formerly, a bank originated, funded and serviced the mortgage until it was repaid. Now one firm may originate the mortgage. Another firm may fund the mortgage or pool the 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 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 50 will remain the same as it is today, but the population older than 50 will double. The traditional bank entry in the competition for consumer savings – the time 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 7.)

Figure 7. Bank time and savings deposits decline relative to fixed-income mutual funds, 1980-1997

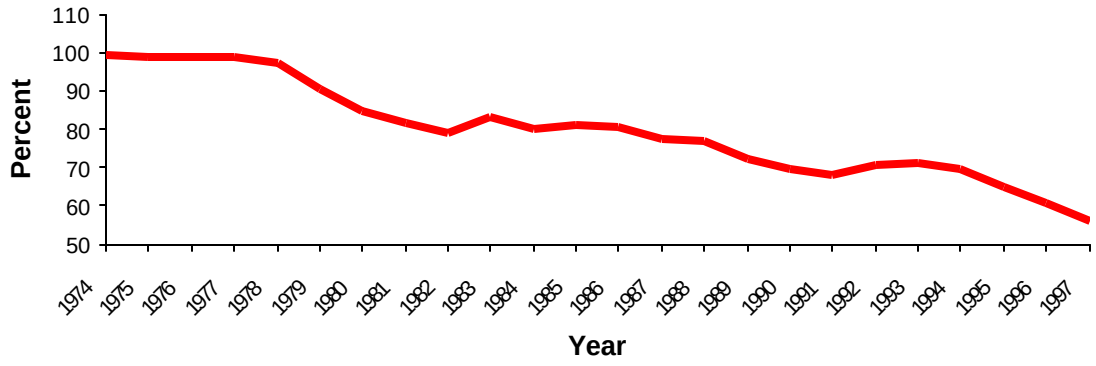


Source: Investment Company Institute Mutal Fund Fact Book, 1998;
and Federal Deposit Insurance Company, *Historical Statistics on Banking* , 1997.

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

New technology – often introduced by nonbanks – is jeopardizing even the fundamental role of banks in facilitating payments. (See Figure 8.) Many mutual fund families and most

Figure 8. Checkable deposits decline relative to money market mutual fund shares, 1974-1998

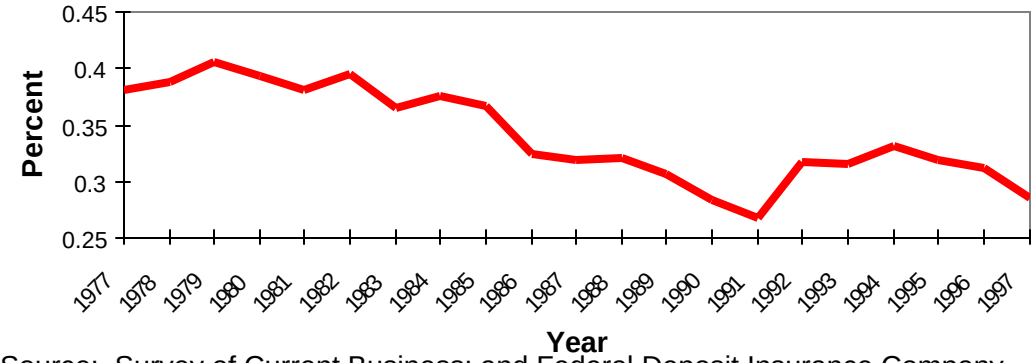


Source: Investment Company Institute Mutal Fund Fact Book, 1998;
and Federal Deposit Insurance Company, *Historical Statistics on Banking*, 1997

brokerage houses offer cash management accounts that permit individuals to arrange for their salaries to be automatically deposited 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

Figure 9. Net interest income less charge-offs as a percent of financial sector GDP 1977-1997



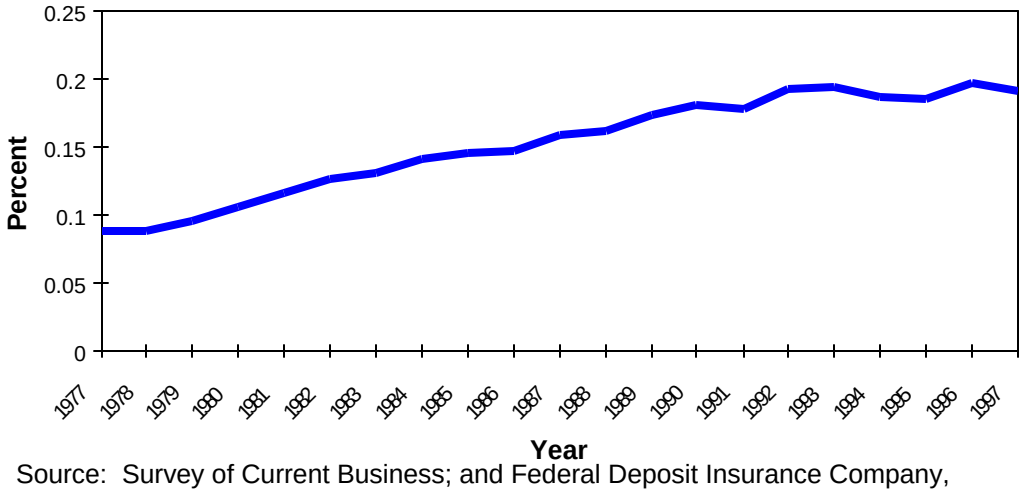
Source: Survey of Current Business; and Federal Deposit Insurance Company, *Historical Statistics on Banking*, 1997.

customer want ubiquitous access, speed and reliability. Channels for delivery of banking services are proliferating and some by-pass 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 – e.g. software, telephone or 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 the importance of net interest income to both the banking sector and the economy as a whole has fallen in the US. (See Figure 9.) 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 the trusts, annuities, mutual funds, mortgage banking, insurance brokerage and transactions services. (See Figure 10.) Notwithstanding the constraints on allowable bank activities in the US, 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.

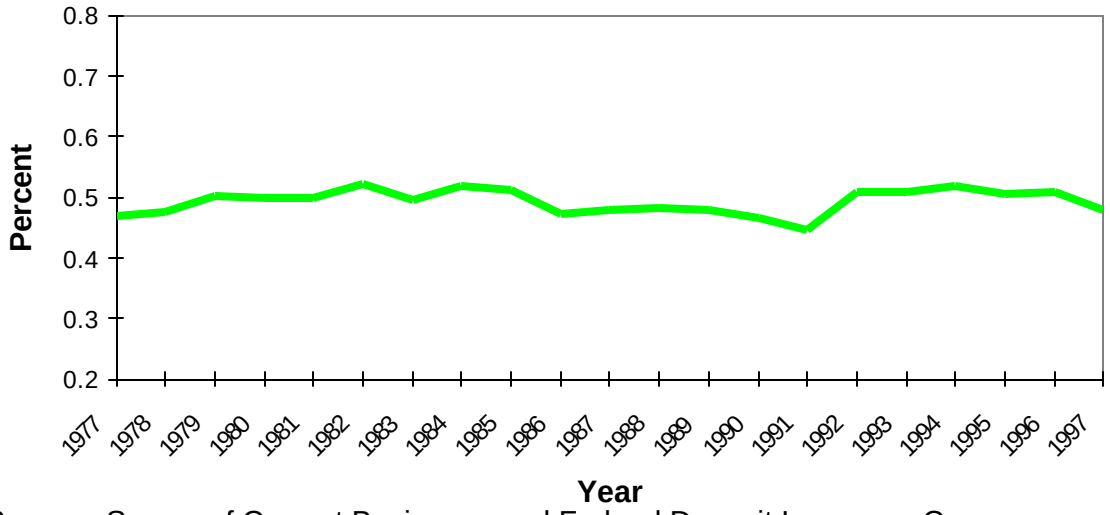
Figure 10. Noninterest income as a percent of financial sector GDP 1977-1997



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

Overall, banks are holding their own, (see Figure 11), but with a very different configuration of earnings.[33] Spread income accounted for about 80% 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.

Figure 11. Bank value added as a percent of financial sector GDP, 1977-1997



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

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 payment system and for that reason concerns about systemic risk persist. The principal source of concern is what 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

[33] Boyd and Gertler (1994) 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.

payment 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 (BIS, 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 bi-lateral exposures to a particular bank, it is virtually impossible to evaluate indirect exposures. Humphrey (1986) illustrated this point when he simulated the consequence of the failure of a single settling participant in the Clearing House Interbank Payments System (CHIPS) system in the era before bi-lateral 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 scope of the devastation to the payments system was comparable, but a different set of banks was effected. 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 clearing houses 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 that Humphrey illustrated in the CHIPS system. 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. And, by 2001 the Bank of Japan will open its Japan Net from 9:00 a.m. to 7:00 p.m. Tokyo Time so that it will overlap Fedwire for four-and-one-half hours and TARGET for four hours.

Flannery (1998, p. 30) sees this movement away from a credit-based payments system as "eliminating the need for prudential government supervision of large financial firms." 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.

VII. "Optimal" regulation in the transition: some simple prescriptions

Banks everywhere have been subject to intense regulatory oversight and limits, to one degree or another, on allowable activities. Banks in the United States have been subject 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 and the major OECD nations. Figure 12 illustrates this. Using OECD data, it contrasts the ratio of interest income to fee income over two discreet periods, 1986-1988 and 1993-1995. Notice that in each case, with the exception of Denmark, the relative importance of on-balance sheet net interest income has declined over the period. (The Danish case can be explained by the volatility of Danish financial reports due to their mark-to-market accounting practices.)

Figure 12. Relative sources of revenue of major banks

	1986-1988			1993-1995			Percentage Change
	Spread	Fees	Ratio	Spread	Fees	Ratio	
Belgium	1.69	.47	3.60	1.28	.50	2.57	28.76%
Denmark	2.76	.55	5.04	3.68	.66	5.55	-10.02%
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%
Iceland	5.97	1.78	3.35	4.76	2.22	2.14	36.13%
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%
Sweden	2.51	1.13	2.22	2.65	2.04	1.30	41.62%

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. In a recent study of comparative financial systems, Barth, Nolle and Rico (BNR) (1997) illustrate the wide range of bank activity across Europe and around the world. Their comparison across the G10 and other EU nations (replicated here as Figures 13, 14, and 15) illustrates that European banks have broad charters and are fully competitive across the entire range of universal banking products.

Swedish institutions tend to look quite similar to many of their European counterparts. Sweden's traumatic experience with real estate finance at the beginning of the decade has led Swedish regulators to be somewhat more restrictive with regard to real estate activities than other regulators in Europe and this is presumably the reason for BNR's designation of the Swedish regulatory regime as 'somewhat restrictive'. But, in general, Swedish banks may offer a wide array of permissible services and have a broad range of affiliations.

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 non-interest 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 is evident in Figure 12 reported above.

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 fully correct 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 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 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 to 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. There will also be attempts to restrict entry so as 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 also they 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 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. Anti-trust policy, for example, has an important role to play because incumbent firms may try to bar new entrants. However, anti-trust enforcement will need to be reconsidered because the relevant product markets may often be global and extend across a range of competitors that includes other financial institutions as well as banks.

The conflict of interest rules, and "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 assure 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 rating agencies should be encouraged.

In terms of the latter, 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 that enforce and oversee regulations that have been put in place by the political process. In this changing financial sector investments must be made in this infrastructure to insure that the regulatory staff are cognizant of global market trends and are capable of assuring 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. But, the gain will be a much stronger, more flexible financial system that serves its customers at much lower cost.

Figure 13. Permissible banking activities and bank ownership in selected EU and G-10 countries: 1995

Country and Bank Supervisor(s)	Securities[1]	Insurance[2]	Real Estate[3]
FRANCE Credit Institutions Committee, Bank Regulatory Commission, and Banking Commission	Unrestricted; conducted either directly in bank or through subsidiaries. No firewalls mandated.	Permitted; sale of insurance products/ services may be conducted directly in bank, but underwriting must be done through subsidiaries.	Permitted; either conducted directly in bank or through subsidiaries, but limited to 10% of the bank's net income.
GERMANY Federal Banking Supervisory Office and Deutsche Bundesbank	Unrestricted; conducted directly in bank. No firewalls mandated	Restricted; conducted as principal only through insurance subsidiaries, which are supervised by the Insurance supervisory Office. Insurance regulation does not allow any business other than insurance business being carried out by an insurance firm. However, a bank may conduct insurance activities as agent without restrictions	Permitted; Investments in equity and real estate, calculated at book value, may not exceed a bank's liable capital, but unlimited through subsidiaries.
ITALY Bank of Italy	Unrestricted; conducted either directly in bank or through subsidiaries. However, for brokering and dealing in securities listed on an Italian exchange other than Italian government and government-guaranteed securities, only through a special subsidiary. Firewalls are mandated.	Permitted; sale of insurance products/services may be conducted directly in bank, but underwriting must be done through subsidiaries.	Restricted, generally limited to bank premises.
JAPAN Ministry of Finance (primary responsibility and Bank of Japan	Restricted; only bonds (not equities) and only through securities subsidiaries. A bank can only own more than 50% of a securities firm with permission from the Ministry of Finance and Fair Trade Commission. Firewalls are mandated.	Prohibited	Restricted; generally limited to bank premises.
SWEDEN Financial Supervisory Authority	Unrestricted; conducted directly in bank or through subsidiaries. No firewalls mandated.	Permitted; bank may only directly sell insurance products/services. However, both banks and insurance firms are allowed to form "concern constellation" (financial groups) as long as the two activities are conducted in different firms.	Restricted; generally limited to bank premises.
UNITED KINGDOM Bank of England	Unrestricted; conducted either directly in bank or through subsidiaries. However, gilt-edged market making must be conducted through a subsidiary. No firewalls mandated.	Permitted; sales of insurance products/services may be conducted directly in bank, but underwriting only through subsidiaries. However, the bank's investment in the subsidiary must be deducted from the bank's capital when calculating its capital adequacy if the bank ownership share in the subsidiary exceeds 20%.	Unrestricted; conducted either directly in bank or through subsidiaries.
UNITED STATES Federal Reserve System, Comptroller of the Currency, Federal Deposit Insurance Corporation, and State Authorities	Restricted; national and state member banks generally are prohibited from underwriting or dealing in corporate debt and equity instruments or securities. They may, however, engage in discount and full service brokerage as well as serve as agent for issues in privately placing securities. State non-member banks are subject to the same restriction as national banks, unless the FDIC determines the activity would not pose a significant risk to the deposit insurance fund. Bank holding companies may, on a case by case basis, be permitted to underwrite and deal in corporate debt and equity securities through a Section 20 subsidiary so long as the subsidiary's revenues for these activities do not exceed 10 percent of total gross revenues. Firewalls are mandated.	Restricted, banks generally may engage in credit life and disability insurance underwriting and agency activities. National banks, in addition, bay engage in general insurance agency activities in towns with less than 5,000 in population	Restricted; banks generally are restricted to investment in premises or that which is necessary for the transaction of their business.
EUROPEAN UNION [4]	Not applicable; permissibility is subject to home country authorization and limited host country regulation, primarily notification requirements. (A single EU "passport" exists.)	Not applicable; permissibility is subject to home country regulation	Not applicable; permissibility is subject to home country and host country regulation.

Figure 13. Permissible banking activities and bank ownership in selected EU and G-10 countries: 1995

Country and Bank Supervisor(s)	Commercial Bank Investment in Non-financial Firms	Non-financial Firm Investments in Commercial Banks	Geographical Branching Restrictions on Commercial Banks within Country		
			Domestic Banks	*Non-Domestic Banks*	*Prior Regulatory Approval Required*
FRANCE Credit Institutions Committee, Bank Regulatory Commission, and Banking Commission	Unrestricted; Complies with EC Second Banking Directive. Subject to this limitation a bank may own 100% or the equity in any non-financial firm.[5]	Unrestricted, complies with the EC Second Banking Directive.[6]	None	None	No
GERMANY Federal Banking Supervisory Office and Deutsche Bundesbank	Unrestricted; Complies with EC Second Banking Directive. Subject to this limitation a bank may own 100% or the equity in any non-financial firm.[5]	Unrestricted, complies with the EC Second Banking Directive.[6]	None	None	No
ITALY Bank of Italy	Restricted; more restrictive than the EC Second Banking Directive. Most banks are subject to an overall investment limit of 15% of own funds (7.5% in the case of unlisted firms) and to a concentration limit of 3% of own funds in each holding in non-financial firms or groups. Some banks, due to their size and proven stability, are subject to less stringent limits (overall and concentration limits of respectively 50% and 6% or leading banks, and 60% and 15% for specialized banks). Consistency with the principle of separation between banking and commerce is ensured by a further investment limit of 15% of invested firms' capital for all banks.[5]	Restricted; more restrictive than the EC Second Banking Directive. Persons who engage in significant business activity in sectors other than banking and finance are forbidden from acquiring an equity stake which, when added to those already held, would result in a holding exceeding 15% of the voting capital of a bank or in control of the bank.[6]	None	None	No
JAPAN Ministry of Finance (primary responsibility and Bank of Japan	Restricted; a single bank's ownership is limited to 5% of a single firm's shares, including other banks (Article 9, Anti-Monopoly Law).	Restricted; total investment is limited to firms capital or net assets. The Anti-Monopoly Law prohibits establishment of a holding company whose main business is to control the business activities of other domestic companies through the holding of ownership.	None	None	No
SWEDEN Financial Supervisory Authority	Restricted; Investments on an aggregated basis are limited to 40% of a bank's own funds. Ownership in a firm is limited to 5% of this base (i.e. 1.5% in a firm or group of firms related to each other). Furthermore, ownership in a firm must not exceed 5% of the total voting power in the firm concerned. These limits do not apply when a bank has to protect itself against credit losses. In this case the bank must sell when market conditions are appropriate.[5]	Restricted; ownership is limited to 50% except under certain circumstances when a bank is near insolvency and there is a need for external capital injection. In the latter case, greater ownership may be permitted, based upon suitability of new owners.[6]	None	None	Yes
UNITED KINGDOM Bank of England	Unrestricted; complies with the EC Second Banking Directive. Subject to this limitation, a bank may own 100% of the equity in any non-financial firm. However, an ownership share of more than 20% requires that the investment be deducted from the bank's capital when calculating its capital adequacy on a risk basis. Otherwise, the investment is treated as a commercial loan for the risk-based calculation.	Unrestricted; complies with the EC Second Banking Directive. However, a firm would have to make application to the Bank of England to become a shareholder controller and receive the Bank's non-objection.	None. But need to comply with the local requirements and have adequate systems and controls for the function.	None. However, a bank must make an application to open a branch unless passporting into the UK under the EC Second Banking Directive.	Yes (see adjacent column).
UNITED STATES Federal Reserve System, Comptroller of the Currency, Federal Deposit Insurance Corporation, and State Authorities	Restricted; national and state member banks generally are prohibited from making direct equity investments in voting or nonvoting stock. State non-member banks generally are limited to investments that are permissible for national banks. Bank holding companies are limited to an investment not to exceed 25% of a non-financial firm's capital.	Restricted; a non-financial firm may make equity investments in banks and bank holding companies. However, the investment must not exceed 25% of the bank's capital to avoid becoming a bank holding company. In other words, banks may only be acquired by companies that limit their activities to those deemed to be closely related to banking by the Federal Reserve Board	Yes	Yes; same restrictions that apply to domestic banks.	Yes.

Figure 13. Permissible banking activities and bank ownership in selected EU and G-10 countries: 1995

	EU Banks	**Non-EU Banks**	*Domestic Banks*	*Non-Domestic Banks*	*Prior Regulatory Approval Required*
EUROPEAN UNION[4]	Unrestricted; the EC Second Banking directive (Article 12) limits "qualifying investments" to no more than 15% of a bank's own funds for investment in a single firm, and to no more than 60% for all investment in non-financial firms. In exceptional circumstances, these limits may be exceeded, but the amount by which the limits are exceeded must be covered by a bank's own funds and these own funds may not be included in the solvency ratio calculation. A qualifying investment is defined as a direct or indirect holding in an undertaking equal to at least 10% of its capital or voting rights or permitting the exercise of significant influence over its management.	Unrestricted; subjects qualifying investments to regulatory consent based only on the suitability of shareholders.	None (A single EU "passport" exists.)	Restricted; branches are fully regulated by the authorities of the EU member state in which they are situated and do not have access to the single EU "passport" to provide services or establish subsidiary branches throughout the EU.	

Source: Supervisory authorities in the listed countries provided information used to prepare this table. However, they are not responsible for any errors or misinterpretations. For exact information, one must consult the pertinent laws and regulations in the individual countries. For France and Japan, a source was Institute of International Bankers (1995).

Definitions: Unrestricted—A full range of activities in the given category can be conducted directly in the bank.
Permitted—A full range of activities can be conducted, but all or some must be conducted in subsidiaries.
Restricted—Less than a full range of activities can be conducted in the bank or subsidiaries
Prohibited—The activity cannot be conducted in either the bank or subsidiaries.

[1] Securities activities include underwriting, dealing and brokering all kinds of securities and all aspects of the mutual fund business.
[2] Insurance activities include underwriting and selling insurance products/services as principal and as agent.
[3] Real Estate activities include investment, development and management.
[4] The EU members are Austria (January 1, 1995), Belgium (original member), Denmark (January 1, 1973), Finland (January 1, 1995), France (original member), Germany (original member), Greece (January 1, 1981), Ireland (January 1, 1973), Italy (original member), Luxembourg (original member), Portugal (January 1, 1986), Spain (January 1, 1986), Sweden(January 1, 1995), and the United Kingdom (January 1, 1973).
[5] The EC Second Banking Directive (Article 12) limits "qualifying investments" to no more than 15% of a bank's own funds for investments in a single non-financial firm and to no more than 60% for aggregate investments in non-financial firms. In exceptional circumstances these limits may be exceeded, but the amount by which the limits are exceeded must be covered by a bank's own funds and these own funds may not be included in the solvency ratio calculation. A qualifying investment is defined as a direct or indirect holding in an undertaking equal to at least 10% of its capital or voting rights or permitting the exercise of significant influence over its management.
[6] The EC Second Banking directive (Article 11) subjects qualifying investments to regulatory consent based only on the suitability of shareholders.

Figure 14
Permissible banking activities and bank ownership in the EU and G-10 countries: 1995

	Securities	Insurance	Real Estate	Commercial Bank Investment in Nonfinancial firms	Nonfinancial Firm Investment in Commercial Banks
Very Wide Powers					
Austria	Unrestricted	Permitted	Unrestricted	Unrestricted	Unrestricted
Switzerland	Unrestricted	Permitted	Unrestricted	Unrestricted	Unrestricted
United Kingdom	Unrestricted	Permitted	Unrestricted	Unrestricted	Unrestricted
France	Unrestricted	Permitted	Permitted	Unrestricted	Unrestricted
Netherlands	Unrestricted	Permitted	Permitted	Unrestricted	Unrestricted
Wide Powers:					
Denmark	Unrestricted	Permitted	Permitted	Permitted	Unrestricted
Finland	Unrestricted	Restricted	Permitted	Unrestricted	Unrestricted
Germany	Unrestricted	Restricted	Permitted	Unrestricted	Unrestricted
Ireland	Unrestricted	Prohibited	Unrestricted	Unrestricted	Unrestricted
Luxembourg	Unrestricted	Permitted	Unrestricted	Unrestricted	Restricted
Portugal	Unrestricted	Permitted	Restricted	Permitted	Unrestricted
Spain	Unrestricted	Permitted	Restricted	Unrestricted	Permitted
Somewhat Restricted Powers:					
Italy	Unrestricted	Permitted	Restricted	Restricted	Restricted
Sweden	Unrestricted	Permitted	Restricted	Restricted	Restricted
Belgium	Permitted	Permitted	Restricted	Restricted	Unrestricted
Canada	Permitted	Permitted	Permitted	Restricted	Restricted
Greece	Permitted	Permitted	Restricted	Unrestricted	Unrestricted
Restricted Powers:					
Japan	Restricted	Prohibited	Restricted	Restricted	Restricted
United States	Restricted	Restricted	Restricted	Restricted	Restricted

SOURCE: Figure 13.

NOTES: Securities activities include underwriting, dealing and brokering all kinds of securities and all aspects of the mutual fund business.
Insurance activities include underwriting and selling insurance products/services as principal and as agent.
Real estate activities include investment, development and management.

DEFINITIONS: Unrestricted—A full range of activities in the given category can be conducted directly in the bank
Permitted—a full range of activities can be conducted, but all or some must be conducted in subsidiaries
Restricted—Less than a full range of activities can be conducted in the bank or subsidiaries
Prohibited—The activity cannot be conducted in either the bank or subsidiaries.

Figure 15
Permissible corporate organizational form in which to conduct selected bank activities in selected EU and G-10 countries*

		Securities Activities[1]				Insurance Activities[2]				Real Estate Activities[3]			
Country	Bank Holding Company Permitted	Directly in the Bank	Bank Subsidiary	Bank Holding Company Subsidiary	Most Frequently Conducted in	Directly in the Bank	Bank Subsidiary	Bank Holding Company Subsidiary	Most Frequently Conducted in	Directly in the Bank	Bank Subsidiary	Bank Holding Company Subsidiary	Most Frequently Conducted in
Austria	Yes, but infrequently used	Yes	Yes	Yes	Bank[4]	No	No	Yes	Bank Holding Company Subsidiary[5]	Yes	Yes	NA	Bank
Canada	No	No	Yes	No	Bank Subsidiary	No	Yes	No	Bank Subsidiary	Yes	Yes & No	No	Bank Subsidiary
Finland	Yes, but infrequently used	Yes	Yes	Yes	Bank	Yes & No[6]	Yes	Yes	Bank Subsidiary	No	Yes	No	Bank Subsidiary
Germany	Yes, but infrequently used	Yes	Yes	Yes	Bank	No[7]	Yes	Yes	Bank Subsidiary	Yes	Yes	Yes	Bank Subsidiary
Greece	No[8]	Yes[9]	Yes	No	Bank Subsidiary	Yes[10]	Yes	No	Bank Subsidiary	No[11]	Yes	No	Bank Subsidiary
Ireland	Yes, but infrequently used	Yes	Yes	No	Bank Subsidiary	Yes[12]	Yes[12]	No	Bank	Yes	Yes	No	Bank
Italy	Yes, widely used	Yes	Yes	No	Bank	Yes	Yes	Yes	Bank Subsidiary[13]	No	Yes	Yes	Bank Subsidiary
Luxembourg	No[14]	Yes	Yes	No	Bank	No	Yes	No	Bank Subsidiary	Yes	Yes	No	Bank Subsidiary
Netherlands	Yes, widely used	Yes	Yes	Yes	Bank	No	Yes	Yes	Bank Holding Company Subsidiary	No	Yes	Yes	Bank Subsidiary and Bank Holding Company Subsidiary
Portugal	Yes, but infrequently used	Yes	Yes	Yes	Bank & Bank Subsidiary	Yes	Yes	Yes	Bank & Bank Subsidiary	No	Yes	Yes	Bank Subsidiary
Spain	Yes, but infrequently used	Yes	Yes	NA	Bank Subsidiary & Bank Subsidiary[15]	No	Yes	NA	Bank Subsidiary	No	Yes	NA	Bank Subsidiary
Sweden	No	Yes	Yes	No	Bank	No	Yes	No	Bank Subsidiary	No	No	No	NA
Switzerland	Yes, but infrequently used	Yes	Yes	Yes	Bank	Yes	Yes	Yes	Bank Subsidiary	Yes	Yes	Yes	Bank Subsidiary
United Kingdom	Yes, but infrequently used	Yes	Yes	Yes	Varies	Yes	Yes	Yes	Bank Subsidiary[16]	Yes	Yes	Yes	Varies

[1] Securities activities include underwriting, dealing and brokering all kinds of securities and all aspects of the mutual fund business.
[2] Insurance activities include underwriting and selling insurance products/services as principal and as agent.
[3] Real estate activities include investment, development and management.
[4] Securities activities fall under the banking activities provisions of Section 1 Austrian Banking Act. Hence, such business may be conducted exclusively by a bank.
[5] Insurance activities require a license by the insurance supervisory authority (Ministry of Finance).
[6] Insurance activities in Finland may be conducted in the bank as agent but not as principal.
[7] Except as agent for insurance companies.
[8] Holding companies may own the majority of shares in a Greek bank, but there is no specific legal framework referring to such companies.

[9] Only underwriting and custodian services
[10] Only selling insurance products combined with deposits—no insurance risk may be assumed by banks.
[11] Excluding investment in bank premises.
[12] Only includes selling insurance products and services as agent.
[13] Italian banks are not directly involved in insurance activities; these must be conducted by insurance companies subject to specific rules. Banks usually act as an agent of insurance companies, selling product through their branches.
[14] Pure holding companies are permitted to incorporate under Luxembourg law, but the statute of a bank holding company does not exist. This type of company is not subjected to any prudential control by any authority.
[15] Public debt directly in bank and stock exchange in bank subsidiary.
[16] With the exception of selling insurance as an agent, which is commonly conducted directly in the bank.
*Information as of January 1997.
SOURCE: Office of the Comptroller of the Currency using information provided by bank supervisory authorities in the respective countries.

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