

**"THE ROLE OF PUBLIC POLICY IN INSURING
FINANCIAL STABILITY: A CROSS-COUNTRY,
COMPARATIVE PERSPECTIVE"**

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S U M M A R Y

It is a common feature of countries around the world that the financial sector of the economy, and the banking system in particular, is highly regulated and supervised. This raises questions about the sources of market failure and the possible forms of regulation. This paper addresses these two issues and present a cross-country, comparative perspective on bank regulation and on various deposit insurance or protection fund systems which have been created recently in many countries.

Introduction

It is a common feature of countries around the world that the financial sector of the economy, and the banking system in particular, is highly regulated and supervised. The effects of regulation on the economy and the comparison of alternative regulatory systems are of great interest, both from a practical and from an academic point of view. Any reform of banking legislation, and of financial regulation in general, requires that these issues are studied. In recent years, there has been a revival of interest in questions of this type, as illustrated by the deregulation and reregulation discussions in the United States and in numerous other countries. A major reason for this renewed occupation with bank regulation has undoubtedly been the large amount of financial change (development of new financial instruments and institutions, domestic integration of financial markets and internationalization) which has occurred in recent years, partly due to developments on the technological side (electronic data processing, telecommunications), but partly also as an innovative response to existing regulations and constraints. A further ingredient in this discussion has been the international debt crisis of recent years.

The regulation issue raises a number of basic questions. To what extent is regulation of banking and financial markets justified, and why? What are the reasons for an unregulated financial system leading to suboptimal and "undesirable" results? What forms of regulation can improve on these results and thus be economically justified? What kinds of regulation,

on the other hand, prove detrimental to market efficiency and performance? In this context it is important to keep in mind that regulations normally have their costs. Thus, even if a regulation is judged to have beneficial effects, it is important also to investigate its costs and weigh them against the associated benefits.

While banking is regulated in every country around the world, the specific forms of regulation employed vary to a considerable degree. This paper offers a discussion of alternative approaches to ensuring the stability of the financial system of an economy. It should be made clear at the outset, however, that it is not the purpose of the paper to give a country-by-country description and comparison of regulations. This would be a task requiring far more space than is allowed here, and more detailed knowledge than the authors have. Rather, we try to identify and discuss different approaches to the issue of financial stability, using the regulatory systems and resulting banking structures of individual countries as examples. Very useful descriptions of the regulatory systems of major countries around the world are to be found in Welch (1981) or Dale (1982 or 1984). Specific details on some individual national systems are also found in the country-papers prepared for this conference.

Motives for Banking Regulation

It is sensible to begin a discussion of bank regulation with a brief review of the basic motives and justifications for these regulations. Traditionally, most regulations in the

banking area have been justified in terms of one of the following three considerations:

- Concern for bank safety and overall financial stability. Bank safety can be seen as important from two points of view: the protection and safety of the bank customer (the depositor, especially) on the one hand, and the avoidance of banking panics and crises on the other hand. The former of these refers to the safety of individual banks and their customers and is comparable to concerns for consumer protection in other areas. The latter, on the other hand, refers to the safety of the banking and financial system as a whole.

- Concern for monetary control (especially money supply and price level control and stability). Without regulation, such a control is sometimes said to be impossible, leading to money supply and price level indeterminateness. More frequently, and less extremely, the money stock and the price level are said to be subject to an excessive amount of variability without such controls, with consequent costs to the economy as a whole. The former possibility is feared by authors who believe that, without regulation of banking, there would be no effective constraint on banks and other financial enterprises to create money in the form of bank deposits and other, similar liabilities (near-monies). The latter view stems from the related (but less extreme) concern that the banking system, via its participation in the money creation process, injects an undesirable instability into the monetary and financial system (through

unpredictable variations in reserve behavior, etc.), and that in this sense it is "inherently unstable" and thus needs to be regulated. In contrast to the "global" stability of the financial system referred to in the first point above, we are talking about its "local" stability here. The most important regulatory device usually proposed in this context is the institution of a reserve requirement (Baltensperger, 1982).

- Concern for monopoly, concentration and inadequate competition in banking. This concern is usually based on the presumed existence of economies of scale or scope in banking. In this instance, regulation is seen as a measure protecting the banking sector from inadequate competition - somewhat in contrast to the other two types of considerations mentioned above, which often result in a tendency to ask whether, and to what extent, competition is appropriate in banking. While this third type of approach to bank regulation has played a certain role in the United States, especially with regard to branch banking restrictions, it has been considerably less important, generally speaking. Although some economies of scale probably exist in banking for small bank sizes (see Baltensperger, 1972; Benston, Hanweck and Humphrey, 1982 and Gilligan, Smirlock and Marshall, 1984), it is less clear that these are important enough to justify branching restrictions of the sort employed in the United States or that these restrictions actually reduce the likelihood of the emergence and maintenance of monopoly positions in banking.

Of course, these motivations for bank regulation cannot always be fully separated. To some extent, they are related to each other. Nevertheless, it is useful to separate them analytically, since the arguments and types of regulations usually proposed and recommended under them differ to a considerable degree (and in some cases, as just noted, can become contradictory). In this paper we are concerned with the first of these three issues alone and we deal with the other two only to the extent that they are related to the first.

The Need for Public Policy in Insuring Financial Stability

Concerns for bank safety are often based, in essence, on the idea that, without regulation, there is too much competition and that banks would take excessive risks. Competition in this view is seen as less appropriate for banking than for other industries. Banks which assume excessive risks and overextend themselves ("overbanking") reduce bank safety to unsound levels and increase the probability of bank failures and of a collapse of the financial system. These worries, which have been behind most existing bank regulations (especially those introduced in response to the financial crises of the 1930s) have been reinforced again by foreign exchange losses in the mid-70s and by maturity mismatching and the international debt crisis in the 80s. This, together with the large amount of financial change occurring in the world economy, has led to a substantial reconsideration of regulatory issues during recent years. It should be noted, however, that it is important to distinguish between

overextensions caused by public interventions themselves (regulations or, especially, compulsory deposit insurance, or implicit guarantees of a similar sort by governments) and inefficiencies caused by the free markets in the absence of regulation. Thus, simply pointing to recent developments (international debt crisis) is not enough to prove market failure and to justify regulation.

Thus, before discussing specific regulations, in order to give a clear focus to the subsequent discussion, we must briefly ask why regulation is necessary at all for ensuring financial stability. What is the nature and the source of the failure of the unregulated market which regulations are supposed to correct? Once such a failure has been identified, we can ask what type of regulation would help to improve the situation. What are the consequences, including the costs, of possible regulations? In all this, it is important, to remember that it is not enough to establish a "failure" of the market vis-à-vis some idealized state of the world, for example the state which could be reached if everybody had perfect information. A case must be made that specific regulations will improve on the unregulated market's solution, given the actual environment characterizing the economy. Often such a case is much more difficult to make than is thought at first view.

The following argument, which has been much emphasized in recent years, is based on the presumption of imperfect information, especially information asymmetries between the bank and the bank customer (lender and borrower) and the

resulting problems of moral hazard and adverse selection. Depositors are said to be unable to judge adequately the quality of bank assets and thus the default probability of individual banks. That is, depositors know that there are high quality and low quality banks, but they are unable to tell which is which, while the banks themselves know their own status. This is often reinforced by the low level of disclosure in many countries. Research in information economics during recent years has shown that such an asymmetry, if it exists in a field, may lead to a breakdown of markets or to unusual types of market equilibria. Whether this, as such, justifies speaking of "inefficiencies" is a difficult and subtle question. (Inefficient with respect to what?) However, in banking it is pointed out that such an asymmetry creates a special problem because a large part of the banks' liabilities are withdrawable on demand or short notice at par (Diamond-Dybvig, 1983). Depositors face the question whether an observed bank failure is due to bank-specific causes (a bad draw from a given distribution of returns) or whether it represents a shift in the risk of the banking system as a whole (an overall change in the state of the economy). As technological progress reduces substantially the cost of deposits transfers, the fear of a bank run becomes more relevant. In this way, a form of externality arises: "good" banks may be hurt by the existence of "bad" banks. This can lead (a) to a misallocation of resources (a suboptimal level of risk taking) generally, and (b) to the danger of bank runs: the failure of a "bad" bank may cause a run on "good" banks, and thus create a risk of the collapse and destruction of the banking system and the

money supply, with high social costs (due to the vital importance of the banking and monetary system for the smooth operation of an economy [Bernanke, 1983]).

It should be stressed that what is special to banking, according to this kind of argument, is the liquid nature of the liabilities of banks and the "contagion effect" of bank failures; that is, the effects which an individual failure may have on the banking system as a whole. This thought has always been, in one way or another, at the heart of the justification of bank regulation. Information problems and uncertainty as such create the possibility of bank failures and depositor losses. In principle, this fact alone does not much differentiate banking from other fields. A creditor or shareholder of any firm may suffer losses of this kind (and may be subject to the sort of information asymmetry referred to above), but this is not normally taken to be cause for a call for regulations - at least not of the kinds which are customary in banking. Thus, as far as individual banks and their risk of failure are concerned, special bank regulations would seem to be comparatively hard to justify. It is the potential effect of individual failures on the safety of the banking and credit system as a whole which forms the basis for regulatory concern.

Although some authors (e.g. Kareken and Wallace, 1978) claim that an unregulated banking system would imply a zero probability of default, and hence also of banking crises, it cannot be denied that in terms of historical experience fears of the sort just mentioned do not entirely seem to lack

justification. This suggests that the models on which this alternative view is based (perfect information) do not adequately reflect the complexity of the bank-bank customer relationship and the role of confidence and trust for this relation and the financial system overall. In any case, this kind of fear has probably been the overriding concern behind bank safety regulations, and the main reason for the call for institutions and regulations preventing, or at least containing, the risk of such an event. From this perspective, deposit insurance is generally perceived as an efficient way to reduce the risk of a bank run while allowing for short term deposit funding and maturity transformation. This point has occasionally been formulated in the following way (e.g. Meltzer, 1967): Individual bank failures are comparatively easy to insure and can, in principle, be covered by private insurers, like any other risk. The possibility of multiple failures (chain reactions), on the other hand, makes private insurance very costly and, possibly, unavailable.

The crucial question, of course, is what is the best solution to this problem. As just mentioned, an obvious solution to propose is some sort of insurance scheme, maybe run by the government. Such an insurance can be supplemented, or possibly even substituted by a lender of last resort authority. Both of these types of institutions can assume a variety of forms in practice. Furthermore, they may or may not be supplemented by various additional controls (capital adequacy requirements, disclosure laws, entry restrictions, to name but a few); or, finally, they may be largely substituted by these. Different

countries use different combinations of these regulatory devices. We turn to the most important of these next.

Characteristics of Regulatory Systems

There are a number of characteristics of regulatory systems which can be employed to distinguish between different approaches to regulation. We will first describe these briefly. Afterwards, we will discuss them in more detail, with references to countries relying on these different approaches.

A first distinction is between prudential, or preventive, regulations on the one hand and protective measures on the other hand (Dale, 1984). Prudential, or preventive, measures are those aimed at controlling the levels of risk assumed by banks and thus affecting the probability of bank failures. Protective measures, on the other hand, offer protection to bank customers or to the banks themselves in the case of actual or impending bank failures. Indirectly, thus, they concern the capacity of the system to handle bank failures and runs. Prudential measures can include capital adequacy requirements, liquidity requirements, interest (especially deposit rate) regulations, asset diversification rules (including foreign exchange exposure), restrictions on permissible business activities, restrictions on market entry, and general banking supervision and inspection. Protective measures include various forms of deposit insurance and lender of last resort facilities. However, it should be seen clearly that this separation is not a clearcut one. The two types of measures interrelate in several ways. First, a basic idea of protective regulations

(deposit insurance and lender of last resort facilities) is the creation of confidence in the banking system, with subsequent beneficial effects on the probability of bank runs and system crises. At the same time, however, protective measures involve the danger of moral hazard and adverse effects on the riskiness of banks. Therefore, the two types of measures are interrelated. In particular, protective measures often call for supplementary preventive regulations. That is, there are particular bundles, or packages, of regulations which go together. Of particular importance in this regard is the form in which protective measures are designed.

This brings up another important distinction which can be made, namely that between a discretionary approach to protecting the safety of the banking system and an institutionalized contractual approach. Discretionary interventions are all those that are at the discretion of government: lender of last resort (possibly at a subsidized rate), public guarantees and subsidies of all sorts, or nationalization. The main characteristic of a discretionary intervention is that it is not granted "for sure", so that some amount of private risk remains. This uncertainty creates obvious incentives for lenders to monitor the riskiness of the financial institutions they are lending to. Until recently, this was the only form of public intervention in many countries, especially in Europe. Nevertheless, there was often a common understanding that a public intervention was almost certain, especially for large banks. In a discretionary intervention system, the costs of bailing out are shared by

the central bank (the taxpayers) and by the private banks. Contractual interventions, on the other hand, include the institutionalized deposit insurance systems familiar from the United States and recently introduced in numerous other countries. Since in this case help is granted for sure, these institutions, while creating confidence in the banking system, are also prone to creating problems of moral hazard, as is well known from the U.S. experience.

In the case of institutionalized deposit insurance, the specific form of the insurance schemes employed can vary in a number of ways. Important dimensions which have to be kept in mind in this context are the following:

- The fee structure (flat fee versus variable, risk-related fees)
- degree of coverage (full versus partial coverage, maximum limits)
- funding provisions (funded versus unfunded systems)
- public versus private solutions
- compulsory versus voluntary participation.

In the case of discretionary interventions, an important issue evidently concerns the determination of the circumstances under which help is granted. As mentioned above, it is characteristic of a discretionary approach that these conditions are not known with exact certainty. Nevertheless, over time certain traditions and practices can evolve, and authorities can be more or less generous in determining the thresholds beyond which help is supplied. Important aspects here are the relation of these discretionary measures to

formalized deposit insurance on the one hand, and to routine discount window operations of the central bank on the other hand. Another difficult question concerns the coordination between different national authorities. (Who is responsible for foreign subsidiaries of domestic firms? Home country versus host country principles.)

In all cases of regulation and intervention, an important question refers to the definition of the institutions which are covered (only banks in a narrow sense, or financial firms in a broad definition) and of the items which are covered (e.g. balance-sheet versus off-balance-sheet items).

In the following sections, we will discuss the major dimensions of bank regulation in more detail, and we will indicate how different countries have relied on different combinations of regulations and institutional structures in order to insure the stability of their financial systems. We will organize the discussion in the following way: We will begin with the main form of institutionalized protective regulation, deposit insurance. We will then continue with a discussion of discretionary protective interventions, in particular the lender of last resort facilities. Finally, we will review the role of prudential measures. Here, one can distinguish between two groups of regulations: those which, in one form or another, exist in virtually every country (e.g. capital requirements, diversification rules) and those which are used in some countries only, but not in others (e.g. entry restrictions based on demonstration of "need", restrictions on lines of business).

Deposit Insurance

From the point of view of the depositor, deposit insurance makes all deposits equally attractive, independent of the bank's insolvency risk. It removes the necessity for the depositor to distinguish between different quality types of banks and - in case such differences are perceived by the depositor - for the bank to include a bank-specific risk premium in the rate of interest paid to the depositor. In the case of a bank failure, the insurer pays off the insured depositors, thereby preventing direct effects of the failure on the deposit and money holdings of the economy. Most importantly, however, the need for depositors at other banks to be concerned about the safety of their deposits is removed, and thus the danger of chain reactions and of a collapse of the banking system disappears. This argument, if valid, applies to all liabilities which can be withdrawn on short notice - under whatever name they may appear in the balance sheets of financial firms.

Today, a large number of countries have institutionalized schemes of deposit insurance or protection funds. While in some cases these have been created some time ago (e.g. United States: 1933, Canada: 1967, Japan: 1971, revised in 1986), in many countries, especially European ones, they have been introduced only recently (e.g. United Kingdom: 1982, Germany: 1977, France: 1979, Belgium: 1985, Netherlands: 1979). The stated motivations are usually the traditional ones of protection of small deposits and of stability of the banking system. Nevertheless, there are still important countries

without formal deposit insurance (e.g. Italy, Switzerland, Luxembourg, Hongkong, Singapore). However, in countries without formal deposit insurance, a more or less implicit guarantee by the government or the central bank does usually take its place. Furthermore, the introduction of institutionalized deposit insurance is under discussion in some of these countries (e.g. Italy, Switzerland).

Deposit insurance has been discussed by a variety of authors; see, for example, Friedman (1959), Black, Miller and Posner (1978), Kareken and Wallace (1978), Baltensperger (1980), Cooper and Fraser (1984), Kane (1985), or Dermine (1986).

Deposit insurance can take a variety of forms. A first basic question is whether it should be compulsory or not. Voluntary insurance may be enough if the only objective is to offer bank customers the opportunity of holding a riskfree deposit. However, since the avoidance of bank runs and system crises is usually seen as one of the main goals, the normal call is for enforced insurance. Therefore, many countries have deposit insurance on a mandatory basis and, even when it is voluntary (Belgium, Netherlands, Germany or United States [Johnson and Abrams, 1983]), in fact it covers almost the entire banking system.

Deposit insurance systems can be either public (e.g. United Kingdom, United States, Canada, Belgium) or private (usually created on a collective basis by the banks themselves, via some sort of insurance pool, e.g. Germany, Netherlands, France). These private solutions are normally run under the control and supervision of the government, however, so that the

difference to public insurance may not be as fundamental as it appears at first. Another case of a mixture between public and private systems is the Japanese one, a kind of joint effort by the government, the central bank, and the banking industry. There are, in principle, good reasons for introducing some competition and, consequently, adaptive efficiency into the business of supplying deposit insurance, e.g. by allowing private insurers to participate in this business by offering supplementary deposit insurance (Kane 1986, Benston 1983).

A basic question of any insurance system, especially with mandatory insurance, concerns the way in which insurance fees payable by the insured banks are set: flat fees or variable, risk-related premia? The answer to this question has great significance with regard to what further types of complementary regulations may be necessary. Economists almost invariably have, in principle, expressed a preference for risk-related premia. An efficiently organized insurer would graduate insurance premia according to the bank's risk of insolvency, and consequently according to the risk of the bank's asset portfolio and the adequacy of its capital holdings. Such a system would minimize the danger of adverse incentive effects which may otherwise result from deposit insurance. Under such a system, the individual bank bears the consequences of a higher risk portfolio or a lower capital-deposit ratio in the form of a higher insurance fee. If this is not the case, banks have an incentive to hold higher risk portfolios and lower capital-deposit ratios than they otherwise would. In reality (as in all insurance markets) it is probably impossible to

avoid these problems totally. But this is no reason not to try to approximate such a solution as far as possible.

Arguments against this form of deposit insurance (often brought forward by administrators of government agencies) usually emphasize the administrative difficulty in calculating the appropriate fee structure. However, this argumentation does not seem to be a very convincing defense of a flat fee structure. A differentiation between just a few risk classes would probably go a long way towards a reasonable first approximation and be much superior to a flat fee which is not related to insolvency risk. It is not clear why the problem of setting adequate insurance premia should be intrinsically more difficult in this area than for other types of insurance. Another argument points to the "private nature" of bank portfolios, which makes it impossible to ask banks to reveal the relevant information without giving away private information vital for their survival in the marketplace (Batchelor and Fitzgerald, 1982). However, there is no need for information about a bank's individual portfolio items to become public information. It is true, of course, that an adequate information disclosure to the insurer is a prerequisite of such a system (as with any other insurance contract - or loan contract, for that matter). However, the overall risk of a bank (which may become publicly known under such a system) does not allow inferences about individual portfolio items. Maybe a more serious difficulty is the opportunity of banks to change their risk exposure within short spans of time. However, this does not mean that high-

risk banks can hide their status forever. Furthermore, as Kane points out, risk-related premia need not consist entirely of ex-ante payments, but may include provisions for an ex-post settling up of gains and losses between a bank, its stockholders, and the insurer (Kane, 1986). Recent developments in the American financial markets, where private insurance contracts exist on bonds, money market funds and swaps transactions, give support to the feasibility of private insurance.

Thus, theoretical support for such a system is strong. Usually, its proponents see no need for further, complementary public controls (like capital requirements, etc.), beyond adequate asset inspection and information disclosure to the insurer. As will be pointed out below, this is in marked contrast to the case of a flat fee insurance system. According to Meltzer (1967), an insurance system of the type discussed here could be voluntary, with variable coverage to be chosen by the depositor. This is, in principle, tempting to a market oriented economist. It must be noted, nevertheless, that a large participation would be essential, since otherwise the safeguard against chain reactions (seen above as the main underlying problem) would be weakened.

However, actually existing deposit insurance systems almost invariably use a flat fee per unit of deposits, regardless of a bank's insolvency risk. Such a system is well-known, in particular, from the FDIC in the United States. But this feature is common to insurance schemes around the world. As already pointed out above, this has important effects on debtor

behavior and will, in general, create an adverse incentive (moral hazard) problem. Since under this system the bank does not bear the consequences on its cost of funds of increasing the risk of its portfolio or of lowering its capital ratio, it has an incentive to pursue such policies beyond the point it otherwise would. Thus, deposit insurance of this sort, as such, has the effect of actually making banks less safe than they would otherwise be. In recent years, under the developments of deposit insurance, especially in the United States, this aspect of flat-fee deposit insurance has been much discussed in the literature (see, for example, Kane 1985). It is quite clear that this logically calls for certain controls to be imposed on the debtor (the bank) by the insurer - the same types of controls and constraints which the depositor/lender would like to have imposed in the absence of insurance. This is a basic reason for the concern of bank regulators and deposit insurers with the adequacy of bank capital (and reserves) and the riskiness of bank assets, and it tends to lead such a system to the introduction of a host of additional controls, such as required capital and liquidity ratios, prohibition of certain (risky) assets from bank portfolios, diversification rules - all imposed on the bank in order to minimize the risk of bank failures.

It is important to emphasize the difference between a flat fee and a variable fee insurance system which manifests itself in this. While the variable fee system discussed above does not care about the risk of individual bank failures as such and constrains it via its influence on insurance premia, the

flat fee system is forced to care directly about this risk and to limit it through certain nonprice measures. That is, it must attempt to force banks to be safe, in order to protect the insurance fund. But note again that, in principle, there is no reason why we should be more concerned about an individual bank failure than about the failure of any other firm. It is only the possibility of chain reactions which should be our concern, that is, the possibility of the failure of sound banks and the banking system as a whole through bank runs. The failure of an individual bank, as such, probably implies no social costs beyond the direct costs to the depositors, shareholders and employees. A collapse of the whole banking system, however, represents a heavy social cost, given the importance of the banking and money system for the efficient operation of an economy. But this does not require minimization of the probability that even one bank will fail; it only requires the elimination of the risk of adverse chain reactions.

While the non-reliance on risk-related fees is virtually universal, there exist nevertheless some differences between different countries with regard to other aspects of funding practices. Most national insurance systems proceed on a funded basis, but the size of the insurance fund, relative to the insured volume of deposits, varies quite considerably (e.g. about 1 percent in the United States, 0.067 percent in Japan; see Dale 1984). However, this is a rather meaningless number, of course, as the insurance fund must be seen in relation to potential payouts and the possibility of raising additional

funds. Nevertheless, the capacity to make large payouts is quite limited in the case of many national systems, meaning that there must be some implicit backup support of a discretionary nature for the case of severe problems (including, as an ultimate solution, nationalization). Some national systems (e.g. France, Netherlands) even operate without any explicit funding, relying instead on ad hoc contributions by the insured banks when payouts have to be made.

Maybe the most important differences between different national systems of deposit insurance can be found with regard to the extent of coverage they offer. In all systems, there exists a maximum amount per depositor and institution beyond which there is no insurance. In most cases, this maximum is stated as a fixed amount, which varies considerably between countries, however (United States: \$ 100.000; Canada: \$ 60.000; France: FF 250.000; Belgium: BF 500.000; Japan: 10 million Yen). The German system provides full coverage up to 30 percent of the failed bank's equity capital. The British system is exceptional in that it covers only 75 percent of the loss, up to a maximum of £ 10.000, while the remaining 25 percent have to be borne by the depositor. Most systems usually attempt to merge troubled banks, so that actual payouts can be avoided as far as possible. The "small deposit" criterion can be questioned if the objective is to protect the less-wealthy depositors. Income or wealth criteria would appear more appropriate and would eliminate the recent problem of the brokered-deposits,

these large sums of money which are divided by brokers into small insured deposits.

The degree of coverage can be quite important for the workings and the consequences of a deposit insurance system. On the one hand, partial and incomplete coverage weakens the potentially beneficial effect of insurance on the stability of the financial system (creation of confidence, avoidance of bank runs). On the other hand, especially with flat-rate insurance, a limitation of coverage may be necessary in order to induce a certain minimum amount of monitoring of banks by bank customers. It should be clear that the very limited coverage offered by current deposit insurance systems is unlikely to completely eliminate the risk of a run (especially in view of the large amount of uninsured deposits raised on the interbank markets), but that it helps to achieve a politically acceptable solution to banks' default as small deposits are insured. This is especially true for the United Kingdom where the 75% provision only partially reduces the incentive to run even for insured deposits. Moreover, the existence of deposit insurance systems is largely unknown to the public in Europe as they are not advertised by banks. There is no such thing as the American "FDIC-insured" sticker on the front door of a European bank. This raises again the question of supplementary interventions by other parts of the government, e.g. the central bank in its role as a lender of last resort.

Lender of Last Resort Facilities (and Related Emergency Measures)

Typically, monetary authorities (usually the central bank) stand ready to provide help when banks, or the banking system as a whole, are experiencing temporary liquidity problems. However, we should distinguish between routine operation of the discount window for normal monetary policy purposes, with often formalized access (e.g. Canada, France, Japan), for example for short-term interest rate stabilization or to meet seasonal variations in liquidity demand, and emergency type measures for troubled banks made on a more discretionary basis. It is especially the latter which we are addressing here.

Usually, the view taken is that such help should only be given to banks which are temporarily illiquid but solvent (and therefore fit for long-run survival). This immediately raises the question why basically sound banks should need help to begin with. With perfect or nearly perfect credit markets, a solvent bank should always find it possible to obtain credit from the private markets. Therefore, one philosophy of the lender of last resort function is that the central bank, as lender of last resort, should never be concerned about the fate of individual banks, but only about the banking system as a whole. That is, it should see it as its duty to maintain an adequate volume of liquidity for the system as a whole, but should leave the distribution and redistribution of funds to the private markets (Humphrey, 1975).

However, another position - which is in fact usually taken by central banks - is that, due to imperfections in the credit

markets, basically sound banks may find it difficult or impossible to obtain sufficient credit from the market when experiencing a temporary liquidity shortage. Therefore, in this view, lender of last resort assistance should take the form of help to individual banks experiencing temporary liquidity problems when these problems endanger its survival (and possibly that of other banks and the banking system, too). In this view, the lender of last resort facility is a response of the authorities to the imperfections of the credit markets. Of course, this view is based on the implicit assumption that the authorities have a better judgment of the soundness and long-term survival potential of individual banks than the market. Another case for concern would be a breakdown in large wire transfer systems which would create a liquidity problem.

Although, on a conceptual basis, liquidity and solvency can be distinguished, it is difficult for them to be completely separated in practice. In practice, the public perception of a "liquidity problem" usually means that some doubts about the bank's solvency exist, too. In fact, some relations between the two states cannot be denied. Unwise liquidity management implies the risk of corresponding adjustment costs; in the case of a "bad draw", these may assume an extent which can threaten the solvency of an institution. Publicly observed liquidity difficulties can to some extent be self-enforcing, by leading to further withdrawals, thereby aggravating the problem. Conversely, solvency problems, by inducing precautionary withdrawals, may quickly generate a liquidity

problem, at least in the case of noninsured deposits. If this spreads to other banks, threatening the stability of the banking system as a whole, this is a matter of obvious concern to the lender of last resort, even under the most conservative view of its role. Generally speaking, if a problem (liquidity or solvency) of some bank(s) creates the danger of an imminent liquidity crisis for the system as a whole (conditions for a bank run), then it is a classical duty of the central bank to step in as a lender of last resort and to protect the liquidity level and the money supply of the economy. A key issue is whether central banks should take a macroeconomic view in protecting the liquidity through, for instance, open market operations or whether they should lend directly to the banks facing a deposit outflow.

As mentioned above, the non-existence of, or the very limited coverage offered by, deposit insurance systems and the fears of a contagious run help to explain why the lender of last resort (the central bank) also steps in in the case of insolvent banks and provides not just liquidity help but, effectively, public guarantees or even subsidization. Recent cases are the Bank of England with the mid-70s secondary banking crisis and the recent Johnson Matthey Bankers affair or the Federal Reserve with Continental Illinois. These are clearly not "pure classical" lender of last resort interventions as liquidity and solvency problems were clearly mixed. The "de facto" insurance function of central banks helps to explain why regulation and supervision are often achieved (partially or totally) by central banks. As Volcker expresses it: "To be

effective in carrying out its interrelated responsibilities for monetary policy and the stability of the banking and financial system, the Federal Reserve needs to maintain a strong position as a "hands-on" regulator and supervisor, not just as an advisor or a bystander" (Volcker, 1985, p. 316). Primary central bank responsibility is the case in the United Kingdom, Italy, Netherlands and France. Joint responsibility between the supervisory institution and the central bank applies in Belgium, Germany, Japan, Switzerland and the United States.

As with deposit insurance, lender of last resort assistance, in principle, creates a problem of moral hazard. However, the discretionary nature of lender of last resort support helps somewhat to constrain this adverse effect, compared to institutionalized protective schemes like (flat fee) deposit insurance. For this reason, the precise conditions under which lender of last resort assistance is given are always and consciously left somewhat open and vague. Of course, the danger of moral hazard can also be lowered by making it known that the banks using this form of help will have to pay a penalty rate of interest.

In accordance with the philosophy mentioned above, in numerous countries lender of last resort support can only be granted, in principle, to solvent banks and on a secured basis. Examples for countries where such a policy is stated are the United States, Canada, Germany, Netherlands, or Switzerland. In some countries, help can be granted even when insolvency is at stake (United Kingdom, Belgium, Italy and France). To some

extent, of course, these differences may simply reflect the presence or absence of an institutionalized deposit insurance with an established tradition. Where such a tradition exists (United States, Canada) the division of work is usually such that the insurance body is responsible for problems of insolvency, and the central bank (lender of last resort) for problems of liquidity. However, even where lender of last resort support is allowed only for solvent banks, the crux of the matter is, of course, the precise operational definition of insolvency. Therefore, these distinctions are less clearcut in practice than they are on paper. Also, the above division of labor is hard to enforce when the funding of the insurance scheme is insufficient to cover large losses.

In most countries, the lender of last resort function is performed by the central bank. In some cases, however, another form of government agency can take its place (Hongkong: Exchange Fund), or a mixed institution operated jointly by the authorities and the banks may be created for this purpose (Germany, Belgium). Sometimes, the function can even be assumed, to some extent, by a dominant private bank (e.g. Hongkong Bank in Hongkong). Even where the official responsibility rests entirely with the central bank, large private banks frequently become involved in actual rescue operations. Examples: U.K. clearing houses in the secondary banking crisis of 1973/75, the Banco Ambrosiano case in Italy 1982, the Herstatt case in Germany 1974, Continental Illinois in 1984 and Johnson Matthey Bankers in 1985 (these cases resulting from solvency problems originally).

Additional issues arise in the context of international banking. What are the responsibilities of the domestic lender of last resort and deposit insurance system? Do they include the deposits of branches and subsidiaries of domestic banks operating abroad? Do they include the deposits of branches and subsidiaries of foreign banks operating domestically? As far as deposit insurance is concerned, the "host country" principle applies as only the deposits of domestic and foreign banks operating domestically are insured. The deposits of domestic banks operating abroad are excluded. This is the case in the United States, Netherlands, Belgium, United Kingdom and Germany (Welch, 1981). Furthermore, a distinction has to be made between local currency deposits which are insured and foreign currency deposits which are only insured in the Netherlands and United States. The discretionary nature of lender of last resort facilities prevents a precise definition of responsibility, but the role of central banks in protecting the soundness of national financial markets implies that lender of last resort facilities, when they exist, will be extended to all banks operating domestically. Also, liquidity assistance between the central banks of the Group of Ten is likely to occur in the case of foreign currency withdrawals.

The "host country" nature of deposit insurance and lender of last resort facilities raises regulatory issues that will be addressed in the next section.

Prudential Regulations

Deposit insurance, be it explicit or implicit, and similar measures of support involve the danger of moral hazard. As discussed, this is so particularly in the case of flat rate deposit insurance. For this reason, but partly also because of a general distrust in unconstrained competition in banking, governments around the world have subjected banks to a variety of prudential regulations aimed at limiting their risk exposure and their probability of failure. While some types of regulation exist, in one form or another, in practically every country, others are used in some places only, but not in others.

An important kind of control which can be employed in banking as well as in other areas of business is the control of market entry through some sort of authorization procedure and licensing practice. In a formal way this kind of control exists in the banking area in every country. As a formal check of adherence to the law and of the professional reputation of prospective management (absence of a record of fraudulent behavior, etc.), this may be seen, along with general banking inspection and supervision, as an obvious and unobjectionable part of any prudential, safety-oriented policy.

However, this form of admission procedure must be clearly distinguished from "real" entry controls based on the requirement of demonstration of economic "need" for additional banking facilities (new firms or new branches of existing firms), i.e. a "public interest" criterion. The objective of this kind of regulation, which usually results from fears of

"overbanking" under unconstrained competition, is to restrain competition and affect market structure by protecting existing banks and their profits. Bhattacharya (1982) discusses how appropriate combinations of entry controls and interest rate ceilings can limit the probability of bank failure. Entry controls, however, have further effects which economists typically are inclined to judge as highly detrimental. For one, they confer monopoly rents on those banks fortunate enough to be admitted, and lead to corresponding inefficiencies, well-known from general economic analysis. In particular, they result in a tendency to prevent bank failures by shielding existing banks, regardless of how inefficient they may be, from competition by new, and potentially more efficient, banks. For this reason, from a long-run perspective, it is not even clear whether the objective of establishing a safe and resilient banking system is actually reached.

Entry controls based on a "need" criterion are well known, e.g. in the United States. Other countries with similar provisions include Japan, Italy and France (although the actual use of these provisions by admission authorities can differ considerably). In the last two countries, the "need criterion" should be phased out by 1989, as is provided by the 1977 European Commission directive on "the coordination of laws, regulations and administrative provisions relating to the taking up and pursuit of the business of credit institutions" (Dassesse and Isaacs, 1985).

In recent years, the emphasis on this kind of "anticompetition" measure has been somewhat downgraded, as the insight has gained

acceptance that competition is basically as healthy and appropriate in banking as in other areas, leading to increased reliance on other methods of regulation.

Another form of regulation which is widely used and has, at least partly, a similar motivation as entry controls is the control of deposit rates (through the introduction of rate ceilings, or even the prohibition of payment of interest on certain types of accounts). This kind of regulation, which limits price competition among banks, usually leads to increased reliance on other, substitute forms of competition, for example the provision of free (or underpriced) services to deposit customers (bundling of services), branching, or advertising. But normally this allows only a partial evasion of price controls (costs of evasion, imperfect competition), so that deposit rate regulations retain a certain amount of effectiveness. This generates rents for the controlled institutions, and can create serious distortions in the controlled markets when the government determined rates are much out of line with market clearing rates. A basically similar situation can result from the setting of cartel rates ("concerted pricing"), although the flexibility of such rates with respect to changes in underlying market conditions is probably greater than in the case of legally fixed rates. Deposit rate controls are sometimes also defended from a monetary policy point of view, rather than a prudential one. In the case of deposit rate controls, the general tendency again is towards reduced reliance on this sort of regulation, although they have been reinforced in Belgium and France in

the last few years. But restrictions still exist in many countries, especially with respect to demand deposits. In Europe, market rates are paid today on demand deposits in Italy (but with concerted pricing) and the United Kingdom; in a limited sense also in Switzerland ("salary accounts", concerted pricing). In a number of other countries, there is an increased reliance on other types of interest-bearing accounts which can be used for transactions purposes, although normally not with market rates (e.g. Sweden, Finland, Netherlands, Norway; see Bingham 1985). Deposit rate controls on savings and term deposits were also known in the United States (Regulation Q) but they have been completely phased out since April 1986 (Calem, 1985). With respect to demand deposits, they formally still exist (for business deposits), but have become less and less important during the last decade with the growth of automatic transfer services and other accounts designed to circumvent the legal restrictions. In the case of savings deposits, the trend towards allowing payment of market rates is even clearer.

The ease of controls on entry and the deregulation of deposit rates are quite beneficial from an economic efficiency point of view, especially as the risk of failure may be limited by other widely used constraints such as capital adequacy requirements. As emphasized before, capital adequacy requirements are necessary with flat rate deposit insurance, because of that system's moral hazard feature which induces banks to lower their capital ratio below what it would be otherwise. Beyond that, it again results from a general

distrust in unconstrained competition in banking, even where no deposit insurance of explicit form exists. Capital requirements are necessary not only because they reduce the risk of failure but also because they limit the incentives to take risk. Indeed, the more there is equity, the larger are the shareholders' losses in case of bankruptcy.

Capital adequacy requirements can take a variety of forms. Most countries know a minimum level of required capital (an absolute amount). Beyond that, many countries require the maintenance of some capital- or solvency-ratio; that is, a minimum ratio between capital and an overall balance sheet magnitude, such as total assets or liabilities, or some weighted measure of risk assets. However, not all countries have such a requirement. No formal and generally applicable capital ratio is established, for example, in Italy, Japan, the United Kingdom, or Canada. Nevertheless, even in these cases, capital adequacy is carefully monitored by the authorities, if in a less formal way. The formal regulations range from relatively simple gearing ratios (e.g. Luxembourg, Germany) to complex risk weighted arrangements (e.g. Netherlands, Switzerland, France, Belgium).

Important problems in the implementation of such capital adequacy controls are the definition of capital on the one hand (treatment of subordinated debt; hidden reserves, including franchise value of established firms under restricted competition and appropriate valuation of assets [Dermine, 1985]), and the determination of "adequacy" of capital on the other hand (appropriate evaluation of the different risks

assumed by banks and their potential consequences). In relation to capital adequacy and solvency controls, a distinction must be made between countries (e.g. the United States) that disclose information (such as non-performing loans, off-balance sheet business and country exposure) and the countries (e.g. Belgium, Germany and Switzerland) which rely heavily on hidden reserves to smooth reported profit and equity.

In analogy to capital adequacy requirements, many countries employ prudentially motivated liquidity requirements (as distinguished from monetary policy oriented reserve requirements, which exist in most countries). This is not the case everywhere, however. No formal (prudential) liquidity requirements exist, for example, in the United States, Canada, Japan or Belgium (although the authorities normally monitor liquidity and have the power to regulate it). Countries with formal and in some cases quite complex rules designed to restrict the extent of maturity transformation by intermediaries include the Netherlands, Germany, Switzerland and France. Sometimes, separate restrictions for foreign and domestic currency liquidity are used (France).

Important differences between different countries exist with regard to the regulation of admissible lines of business. Some countries have a history of attempting to separate banking from other (nonbank) areas of business by prohibiting or restricting equity investments by banks. Regulations of this sort may partly be based on other (non-prudential) considerations, such as the prevention of economic power

concentration. To some extent, however, they usually reflect prudential concerns, the idea being to exclude common stock investments from bank portfolios because of their high risk - although, from a prudential perspective, it is not quite clear that this kind of constraint is really justified, since from a risk-return efficiency point of view the availability of an additional asset should prove beneficial for bank portfolio performance, rather than detrimental. A less restrictive form of regulation is "corporate separateness" whereby a risky activity is legally separated from the banking entity.

Two polar types of banking systems resulting from adherence or nonadherence to this kind of control are the universal banking system of, for example, Germany, the United Kingdom, or Switzerland on the one hand (with virtually no restrictions on admissible activities) and the specialized banking system traditionally known in, for example, the United States, Canada, Italy, or Japan on the other hand, with its separation of commercial banking from investment banking. A variety of intermediate positions exist, too, allowing engagement in nonbank activities only indirectly, through the formation of holding companies or subsidiaries, or allowing such an engagement on a limited scope only. For a survey of European practices on equity investments, see Langohr and Santomero (1985).

Finally, almost all countries have diversification rules of one sort or another aimed at restricting a bank's loan concentration to individual customers or groups of customers constituting a single economic risk. While the precise form

and content of these regulations varies considerably, they normally restrict loans to an individual customer to a certain percentage of the lender bank's capital (15% in the Netherlands, 50% in Belgium, 75% in Germany and 100% in Italy). Sometimes, loans to an individual customer beyond a stated limit are possible, but only under special conditions (e.g. with a higher solvency requirement in the Netherlands and Belgium).

More recent, but similarly orientied areas of concern relate to a bank's loan concentration in individual currencies (foreign currency exposure) or in individual countries (country risk). Foreign currency exposure is monitored by the authorities in most countries today, but formally regulated in some countries only. In Germany, for instance, open positions on foreign currency and precious metal may not exceed 30 percent of own funds. In some cases (e.g. Netherlands, Switzerland) a special capital requirement applies to open positions in foreign currencies. Country risk is monitored increasingly by central banks, but usually no explicit rules have been specified until now.

The regulation and supervision of international banks raise again the issue of responsibility between the home and host authorities. Since the coverage of deposit insurance and lender of last resort is mostly domestic, it seems logical for supervisors to control the risks taken by banks (domestic and foreign) operating domestically. However, since in many cases there is likely to be pressure on the parent bank to intervene (legal commitment in the case of branches and moral or commercial pressures), one can expect that the parent bank

will often be involved in the crisis of its foreign extension and that the supervisors of the parent bank will rightly want to control the bank on a consolidated basis. A case is therefore made for a joint supervision by the host and home authorities. This is the view taken by the Basle Concordat. In June 1983, the European Commission adopted a directive on the supervision of credit institutions on a consolidated basis and, similarly, the United States, Japan and Switzerland control their banks on a consolidated basis (Pecchioli, 1983).

A final question in regulation concerns the type of institutions to include in the prudential net. This is becoming an increasingly important issue as there is a clear tendency for various types of financial (and non-financial) institutions to offer a full range of financial services. Some countries have already merged several regulatory agencies. For instance, in Belgium and France commercial banks and savings banks are regulated by the same supervisor. An opposite case is the United Kingdom where commercial banks are regulated by the Bank of England while the building societies fall under the supervision of the Chief Registrar of Friendly Societies. Also, to provide a "fair level playing field", there is the issue in the United Kingdom of organizing supervision along functional lines (rather than institutional), so that the same prudential rules would be applied to banks and non-banks.

Conclusion

The cross-country, comparative survey on institutional structures reveals both common trends and differences. Most

countries are heading towards formal deposit insurance systems with flat premium and limited coverage. This creates a need for lender of last resort facilities and recent interventions show that the liquidity and solvency motives are often blurred. Major differences appear in prudential rules such as loan limits, capital and liquidity ratios, "economic need" criteria or foreign exchange positions. The progressive abandonment of control on entry, the deregulation of deposit and loan pricing and the recent emphasis on capital adequacy have improved the efficiency of the banking systems. Substantial progress remains to be made with respect to the disclosure of information and the pricing of deposit insurance. Imperfect information being the principal source of market failure, it seems to us that increasing disclosure will improve market discipline, and reduce the moral hazard incentives and the danger of contagious runs. As to insurance premiums, they should be related to the risks taken by the individual banks in much the same way as capital requirements are related to their asset structure. The integration of financial markets both at the domestic and international levels and the arrival of non-financial firms on the markets will no doubt create a need for a major rethinking of regulation, deposit insurance and lender of last resort mechanisms.

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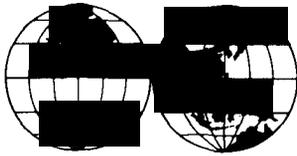
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