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Sustaining Safety and Soundness: Supervision, Regulation, and Financial Reform

by

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What can be learned from the experience of the past decade or two about financial regulation, supervision, and deposit insurance or a financial safety net? Is there a better way to provide safety and soundness in the future than in the recent past? How can financial regulatory policy be kept consistent with monetary policy?

Commercial banks, building societies, investment banks, and insurance companies in many countries have been under stress. The precise problems, patterns and outcomes differ across countries, but in several countries many financial firms failed, merged, or restructured. Many received an infusion of government capital. Some examples are the thrift bailout in the United States, the Japanese pension funds' purchases of common stock, the Swedish government's investment in bank equity to prevent insolvency, and the $27 billion that the French government advanced to Credit Lyonnais.

Latin America has had more than its share of banking and financial problems. A sample of some recent experience includes the following. (Brock, 1992, pp. 2-4; Glaessner and Mas, 1991)

Argentina liquidated 20% of its banks in 1980-82; in 1985 and 1986, several large banks including the Banco de Italia failed; problems of failure and liquidation have returned periodically up to the present.

*Parts of this paper are taken from Meltzer (1994). Thanks to Valeriano Garcia and Edgardo Favaro for helpful discussions.
Brazil experienced a collapse of the five largest independent savings institutions in 1984, followed by large scale defaults on mortgages; in 1985, the government intervened in three large banks; in 1994-95, some banks owned by states became insolvent.

Chile took control of the two largest banks and many others between 1981 and 1983; more than 50% of the financial system's assets came under government control; by late 1982, all private banks were insolvent (de la Cuadra and Valdes, 1992, p. 59); between 1983 and 1986, the government purchased large quantities of uncollectible loans at face value to prevent losses to depositors.

Mexico nationalized all of its banks in 1982 after two large devaluations; loan losses are estimated to have been 15% of total loans; the recent devaluation again raised concerns about financial fragility.

Venezuela spent $7 billion, 13% of GDP, to bailout failing banks and pay off losses at closed banks. The Economist (1995). In the same period, Colombia, Costa Rica, Peru, Uruguay, and Nicaragua experienced financial problems leading to government intervention, ownership or acceptances of losses.

The form and extent of regulation and supervision differ across countries as do the lending and investment powers of banks and financial institutions. Hence any lessons to be drawn are general not specific. However some general lessons stand out:

First, in many countries regulation and supervision did not prevent sizeable losses by the banks and the public. Although quantitative losses differed from country to country, Nakajima and Taguchi (1993) report for developed countries that the effects on banks of the decline of real estate prices was qualitatively similar in the U.S., Japan, United Kingdom, Norway, Sweden, and Australia. In Latin America, disinflation and rapid changes in exchange rates and relative prices have often preceded
financial distress. The common element linking these experiences is the change in relative prices, often as part of the transmission process started by a shift in policy at home or abroad.

Second, the experience in the United States of more heavily regulated sectors, such as savings and loans or banks, was worse than in less regulated financial institutions such as insurance companies. Money market mutual funds (or other open end mutual funds), all of which are exempt from deposit insurance and not subject to banking regulation and supervision, neither failed nor were forced to merge. Most of these funds mark assets to market or severely limit differences between book and market values. Hence information about economic value is more reliable; this may change the incentives of the managers, stockholders, or the public. The Chilean reform of 1986, discussed below, builds on this principle.

Third, banking regulation and supervision were neither necessary nor sufficient to prevent failures and, in many cases, to avoid relatively large social costs. Many of these costs resulted from the waste of resources in projects that failed. Public policies added to the problem by requiring or permitting taxpayers to share in the losses. Although fraud and chicanery were present also, they were neither the leading cause of failure in most countries nor the principal cost.

Fourth, countries have found it difficult to avoid shifting losses from banks and depositors to taxpayers. International lenders demanded that the Chilean government assume responsibility for the losses of private banks. International banks with branches in Uruguay refused to renew their loans unless the government bailed out their branches.1 In other examples, political pressure from depositors or the legislature led the central bank or the legislature to accept the losses.

Fifth, for many of the same reasons that governments or central banks absorb losses, banking regulators often fail to follow pre-announced policies that require them

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1 At the time of its financial insolvencies in the early 1980s, there were 30 banks of which 28 were branches of foreign banks. They threatened not to renew any loans in Uruguay unless the central bank assumed their defaulted loans at face value. The central bank bought the loans without repurchase agreement. de la Cuadra (1992, p. 184).
to close weak or distressed banks promptly. Policy is time inconsistent, and the public or its representation often expects or demands such inconsistency. (de la Cuadra and Valdes, 1992; Glaessner and Mas, 1995) Any plan to reduce the costs of financial distress must recognize this problem.

Sixth, most of the developed countries avoided financial crises and breakdown of their payments systems by intervening. Few depositors in failed or weak banks ran to gold or currency as they had in the U.S. in the 1930s. Open market gold prices fell during the period of stress in the early 1990s. Mainly, depositors moved from weaker to stronger banks, so there was no forced contraction of the system. There were, however, substantial costs, so it is useful to consider alternative arrangements that may lower the costs.

In Latin America after 1982, many countries underwent long and deep recessions when capital flows reversed or did not continue. Devaluation lowered living standards in Chile, Mexico, Peru and elsewhere following periods of financial distress and banking failures. The dollar partly replaced the local currency and remained as a medium of exchange and standard of value long after the financial crises had ended, so revenues from seigniorage were reduced permanently.

Lastly, central banks and governments have begun to recognize the need to reform procedures for dealing with financial fragility and failure. Regulatory and supervisory arrangements have changed in several ways. Following the 1988 Basle agreement, uniform risk-adjusted capital standards became the norm for banks in major countries. In the United States, the Federal Deposit Insurance Corporation Improvement Act (FDICIA) of 1991 placed greater weight on bank capital and less weight on government deposit insurance to safeguard bank depositors from loss of nominal deposits and real wealth. The Reserve Bank of New Zealand has proposed greater reliance on markets and less direct supervision and regulation. Chile has developed new procedures for informing the public and for sharing costs with depositors and owners.

The paper discusses each of these issues and proposals. No single proposal is likely to prevent all financial failures. That is too high a standard. The proper standard
is to enhance efficiency by reducing the social and private costs of failures and, to the extent feasible, eliminate moral hazard and time inconsistency.

The number and types of failures regarded as a minimum depends on macroeconomic policies. Financial stability cannot be achieved if there is macroeconomic instability. The maturity of banks assets and liabilities differ, so large relative price adjustments cause failures, defaults and bankruptcies. Financial reform can protect the payments system and reduce some costs of economic instability, but it cannot prevent relatively large losses in an unstable economy.

Five types of proposals for reform can be found in the literature. First, at one extreme, there is free entry and minimal regulation. Banking is treated like any other competitive industry. Second, at the opposite extreme, is tight regulation and financial repression or nationalization. Third, is regulation, supervision and deposit insurance either by law or custom. Risk-based capital standards are included here. Fourth, is reliance on owners' capital and incentives for early recognition and action. A variant of this proposal provides current information on the condition of the banks to encourage depositors, owners, and non-deposit lenders to discipline the bank. Fifth, is the so-called narrow bank that separates deposit taking from lending and borrowing.

The first two proposals can be dismissed. Experience shows that the first proposal does not work in practice. Whatever its economic merits or demerits, political pressures to shift bank losses from depositors and even stockholders to taxpayers have occurred everywhere and seem unavoidable in a financial system of the first kind. The second proposal reduces economic efficiency and opens the financial system to corruption and favoritism without avoiding the large losses to taxpayers when distress occurs.

Regulation and supervision is the most common system, so it seems useful to devote attention to the way it works in practice. There are significant difficulties in implementing successful regulation and supervision for individual banks. No less difficult in practice is to avoid moral hazard while protecting the banking and payments systems. Often governments or supervisors are unwilling to enforce rules at times of distress; they engage in forbearance. The next two sections discuss these problems of
regulation and supervision before turning to proposals for regulatory reform.

I. Regulation and Supervision

In the modern theory of finance, risk arises from unforseen events. Efficient firms and markets eliminate systematic risk. The risk that remains is non-systematic -- the result of unforseen and uninsurable events.

The problems that most concern financial supervisors and regulators are not mainly systematic risks arising in markets where information is used efficiently and risks are correctly priced. Banks and other financial institutions acquire assets that trade infrequently or not at all. The pricing of bank loans involves credit evaluation, including subjective estimates of future cash flow, risk, the quality of management and other factors specific to a particular loan. Decisions about current and prospective valuation are an essential part of banking.

Further, in the modern theory of finance valuation depends on a firm’s earnings and not on its capital structure. In banking, valuation of assets by outsiders is particularly difficult; valuing the loan portfolio and assessing the probability of timely repayment is the distinguishing function of bankers. Moreover, bankers can, for a time hide their condition from outsiders while at the same time increasing leverage, at low transactions cost, by increasing deposits relative to capital. Hence it is difficult for markets or regulators to assign risk premiums promptly.

Much bank supervision and regulation attempts to limit bank risk by constraining bankers’ choices or substituting regulators decisions about portfolios or capital structure for those of bankers. Since the interest of the two groups differ, perceptions of risk differ at times. These differences aside, there are four distinct problems in using bank regulation and supervision to control risk or protect the payments system or depositors.

First is uncertainty in the Keynes-Knight sense. An unanticipated event -- often a macro policy change at home or abroad -- shifts the distribution of actual or

2Differences about the valuation of particular assets may have very little relation to portfolio risk and even less to systemic risk to the payments system.
anticipated returns. If the change is relatively large, losses, bankruptcy, or illiquidity at financial institutions can become a problem.

The oil shock of 1973-74 is an event of this kind. Prices of existing capital assets declined, and the risk of bankruptcy and default rose. There were losses but no financial crisis. Bagehot (1873) and Schwartz (1987) give examples of earlier events that caused panics -- large, sudden changes in anticipations of returns and risks. More recent events are the 1982 default by the Mexican government followed by other governments, the October 1987 decline in stock prices on markets in twenty countries (or more), the decline in real estate prices in New York, London, Tokyo, Sydney, and other cities at the end of the 1980s, the shift from inflation to disinflationary policy in the developed countries and the subsequent rise in real interest rates, and the 1994 Mexican devaluation.

Morris et al. (1990, pp. 81-90) gives examples of macroeconomic surprises in Chile, Argentina, Uruguay, and Colombia that were followed by bank failures and distress. Banking regulation and banking policy often contributed, but the weakness or inappropriateness of banking policy often was brought to light by the macroeconomic shocks.

In Bagehot’s or Schwartz’s account of earlier periods, examination and supervision play no role. This is not surprising, if the events triggering financial problems are not forecastable events. The distinguishing difference they find between problems at an individual bank and systemic problems -- between real and pseudo financial crises -- resulted from the action or inaction of the central bank as lender of last resort. Schwartz’s account shows that, once the triggering event occurred, depositors acted on knowledge or presumptions about the vulnerability of particular banks conditional on the triggering event. Nevertheless, absent the unanticipated triggering event, there was no reason for a run and no information that a supervisor or regulator could be expected to find.3

Benston (1973) examined cases of fraud. He found that examiners rarely detect

3Not all events are of this kind. Below, I consider cases where information was available but not used.
fraud or misuse of assets in a timely way. Often, differences in asset valuations by examiners or supervisors and bankers reflect differences in evaluation. Fraud is rare, and rarer still are cases of fraud found by financial regulators or banking supervisors before the bank's capital is impaired.

The second class of problems arises as a consequence of regulations or laws that distort incentives or opportunities. Fractional reserve banking increases opportunity for bank runs. Deposit insurance or a public safety net creates conditions under which moral hazard becomes a problem particularly when bank capital is low. The safety net may be an implicit rather than explicit guarantee, but if it is generally believed that government guarantees deposits, and at times even equity, against loss, financial institutions have an incentive to make high risk loans when the value of equity falls below some minimum. Policies that encourage the belief that some banks or financial institutions are too big to fail have similar effect and, in addition, encourage such banks to substitute the regulators (explicit or implicit) guarantee for private capital. Hence leverage increases.

Latin American experience on this class of problems is very one-sided. Countries that have faced banking problems or financial distress chose either to prevent failures by supplying guarantees or capital or have paid off depositors. Venezuela, Chile, and the U.S. supported insolvent financial institutions. (Glaessner and Mas, 1991, p. 31) Before its reform, Argentina usually intervened so late in the process that only 7 of 93 insolvent banks escaped liquidation between 1980 and 1989 (ibid., p. 37). de la Cuadra and Valdes (1992, pp. 38-41) discuss at length the rollover of loans with unrealized loan losses at Chilean banks in the 1980s. They conclude that two main factors exacerbated the problem: government guarantee of bank deposits and official reluctance to take over failed banks. In addition, they cite three conditions for moral hazard: (1) a government guarantee of deposits -- whether explicit or implicit; (2) a substantial information asymmetry between banks and regulators; and (3) extensive, market-wide participation in highly risky debt. (Ibid., p. 46).

Peltzman (1970) investigated the response of bank capital in the United States to regulations affecting capital adequacy. He found no evidence that the regulations
had any effect. The principal policy effect on capital came from the availability of deposit insurance. Peltzman found that deposit insurance substituted for private capital. The availability of deposit insurance and the increased real value of insurance coverage in recent years increased moral hazard.

Substitution of deposit insurance for bank capital is not limited to the United States. Owners' equity, or equity and debentures as a percentage of assets or liabilities, declined in many countries once banks and the public learned that governments would intervene to prevent losses to depositors.

One hundred percent reserve requirements held in Treasury bills or equivalent would eliminate bank runs. Marked to market accounting, where it is feasible, could provide timely information to depositors and the public about risks in particular banks or financial institutions. Marked to market accounting provides information about portfolio losses. It has the defect that many bank assets cannot be priced accurately. Indeed, if loans could always be priced accurately, the bankers' specific human capital or expertise would have no value.

The experience of money market funds in the U.S. provides a useful benchmark. None of these funds failed during the period of recent weakness. The funds are subject to less direct regulation than banks and thrift institutions. They do not have deposit insurance. Instead, most restrict their portfolios to short-term assets and try to manage their assets so that the current market value of the asset portfolio remains consistent with a fixed par value.

The third type of problem arises when there are known risks but regulators do not act. The costs to taxpayers in the U.S., Chile, Argentina, and elsewhere were increased by delays in closing institutions with negative net worth. Some of these delays were the result of political interference. But a supervisory process that is open to substantial interference and forbearance is a faulty process.

The thrift failures in the U.S. were anticipated, not unanticipated. Two economists at the supervisory agency, James Barth and Dan Brumbaugh, circulated estimates of the number and net liabilities of insolvent thrift institutions for several years before many of the insolvent institutions closed. Regulators responded by
reducing capital requirements. They also lowered accounting standards by introducing regulatory accounting principles (RAP) in place of generally accepted accounting principles (GAAP). GAAP accounting would have required recognition of losses and failures earlier. The shift to RAP and the lowering of capital requirements can be explained as an attempt to hide or obscure the growing problem rather than insist upon closures and appropriations sufficient to cover losses.

U.S. regulators in the 1980s were unwilling also to require commercial banks to recognize losses on loans to developing countries. Regulators encouraged banks to book additional loans so that interest payments could be recorded as paid. This continued subterfuge added to the developing country debt and delayed resolution of the debt problem; most of the banks preferred to postpone recognition of losses on their balance sheets. Many succeeded in doing so for most of the 1980s.4

Russell (1993) studied failures of New England banks in the 1980s. The failures cost the bank insurance fund more than $6 billion. Most of the failures involved banks that had a relatively large proportion of assets in commercial real estate. When real estate prices fell, many of the loans became non-performing. Bank managements typically stopped making new commercial real estate loans as problems emerged, but they did not sell off old loans. Regulators did not foresee the problem. They allowed the banks to keep their real estate portfolios, and they acted too late to prevent the failures.

Horvitz (1992) finds very different responses by Texas banks and savings and loans, particularly the latter, to developing problems. Again, the problems were not suddenly thrust on the financial institutions. Some banks and thrifts increased lending on risky assets. Many were unit banks with heavy concentration of loans in their region. Regulators were slow to respond, in part because the Federal Savings and Loan Insurance Corporation did not have the resources to pay out deposits if they closed an association. Political intervention also played a role.

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4Equity markets recognized at least some of the hidden losses at publicly traded banks. Meltzer (1986) shows that the shares of banks with developing country debt declined absolutely and relative to other bank shares.
These examples are not exceptions. Forbearance and delay have been common in many countries. The Bank of England was slow to close the Bank of Credit and Commerce International (BCCI) despite evidence of fraud and mismanagement. Chile not only delayed closing saving banks in 1974, it guaranteed saving banks against bankruptcy. de la Cuadra and Valdes (1992, p. 29). These authors distinguish between subsidies that the government was reluctant to make (moral hazard) and subsidies that were willingly made (contingent subsidies). (Ibid, p. 37) Chile offered both in 1981-83, a period of banking distress and failure.

Other examples from Latin America were cited earlier. Most countries faced with bank failures delay recognition of the failures and eventually assume responsibility to the depositors and socialize the loan losses.

de la Cuadra and Valdes (1992, p. 36) note that, at times, forbearance or delay is required by other government policies. The example they give is Chile’s effort to maintain a fixed exchange rate with the U.S. dollar after 1980. Banks’ customers had considerable foreign exchange exposure. A substantial devaluation was certain to cause distress among the customers and weaken the banking system. The prudent regulatory policy was to require the banks to provide reserves against a possible devaluation. A regulation of this kind would have been contrary to the finance minister’s policy and could not have been carried out.

Regulation and supervision were inadequate in these and other cases. Regulatory inaction or delay may reflect pressures from within government, or uncertainty about valuation.

Too big to fail is a common problem. In Chile, the government in 1977 took over and refunded Banco Osorno and four credit cooperatives and bailed out all creditors. The reason was that liquidation would freeze large amounts of deposits for a lengthy period and weaken political support for the government. (de la Cuadra and Valdes, 1992, pp. 54-55). The result was a strengthened and widespread belief that large and medium-sized banks would not be allowed to fail. Once established, this anticipation is costly to remove. It seems clear that reducing or avoiding political pressure for forbearance must be part of the redesign of regulatory and supervisory arrangements.
The fourth type of problem is inappropriate or incorrect regulation. One recent example was the legal requirement that U.S. savings and loans divest so-called junk bonds by a fixed date. Forced sales lowered the price and increased the losses of thrift institutions, insurance companies and other bond holders. Once the forced sales were completed, prices of junk bonds rose.

The law increased losses to owners of thrifts, insurance companies, and to the deposit insurance fund and taxpayers. The proximate reasons for the law appears to be that the press, including much of the quality press, was critical of the junk bond market. They tied thrift industry failures to defaults on junk bonds, although these would have had a relatively small role if forced sales had been avoided.

The Basle agreement set risk-based capital standards. The hypothesis is that risk of failure can be reduced by requiring capital to increase as the share of risky assets in the portfolio rises. Peltzman’s (1970) findings raise a cautionary note about the effectiveness of this type of regulation. Reliability or accuracy of the risk measure is a problem also. The Basle agreement measures risk in each asset category separately. Modern portfolio theory suggests that the individual assets should be treated as part of the portfolio because risk is in the structure of the portfolio and is not well measured by the risk of the individual assets. Also, it has proved difficult in practice to set risk based capital standards to take account of interest rate risk and foreign exchange risk and to keep up with significant innovations in financial practice. These practices permit a bank to change its risk position very quickly by buying or selling claims on a wide variety of financial instruments.

Other examples of unforeseen effects of regulation include interest rate ceilings and the design of deposit insurance systems. These regulations encourage innovation to avoid the regulations. (Kane, 1989). Interest rate regulations are destructive of bank capital during periods of rising average inflation. Ceilings on interest rates and prohibition of interest payments on demand deposits prevent price competition. Financial institutions substitute services, branches and other more costly forms of competition.

Some regulations may serve a social purpose when they are introduced. The
lesson, repeated many times, is that once introduced they are slow to change. Those who benefit oppose change; inertia sustains other regulations. Regulators and legislators often delay changes until the social cost is high. Prohibition of interstate banking and Glass-Steagall in the United States, or rule 65 in Japan, are well-known examples of regulations that have lost any rational basis they may have had.

The aim of this section is not to suggest that all financial regulation is misguided or that banking and financial firms should be unregulated. Evidence that auditors are slow to detect fraud and failure does not mean that audits are useless. Anticipation of audits probably deters some wrongdoing or excessive risk taking. However, an improved system of regulation and supervision cannot be constructed without recognizing that regulators and supervisors in many countries and many time periods have failed to prevent costly financial problems. Some of the regulatory failures arose because regulators could not anticipate structural changes and, like everyone else, remained uncertain after the event about whether the changes were permanent or transitory. In such cases, bankers and markets can misprice (with hindsight) risky assets. Some of the regulatory mistakes are based on inappropriate rules, laws and regulations. And some result from political pressures that are unavoidable when regulators and supervisors have discretionary judgment.

The main economic rationale for financial regulation and supervision is to prevent failure of the payments system. Some would broaden the statement of purpose to include the entire financial system. The emphasis in either case is on the system, not individual firms or institutions. The reason for this emphasis is that, in principle, well designed regulation can reduce the risks that society must bear.

Two issues arise. First is the relation between safeguarding the payments system and monetary control to achieve general macroeconomic goals, such as maintaining the internal or external value of money. The issue here is whether society must grant authority to a central bank that, once granted, can be used to inflate or deflate money values. Second is the type of regulatory and supervisory framework

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5Not all failures are undesirable. Failure eliminates unprofitable firms.

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that minimizes the risks from deposit insurance or some other explicit or implicit guarantee of the nominal value of deposits. The risks and costs here include political intervention to prevent closure, rules that restrict financial innovation and risk taking, and the shift of losses to taxpayers. A promising approach in recent literature substitutes market discipline for regulation and supervision while retaining some regulatory oversight. I discuss these issues in turn.

II. Bank Runs and System Failures

Recent experience, and experience in the 1930s, differs in important respects from the late nineteenth century experiences described by Bagehot (1873) and Schwartz (1987). After 1866, English financial stress did not result in a collapse of the payments system. The Bank of England acted promptly as lender of last resort.

In the 1980’s, although there were substantial financial problems, bank failures and liquidations in many countries, the payment system did not fail anywhere. There were no runs on banking systems, although there were runs on individual banks and on currencies that, in part, may have reflected concerns about bank safety. But public funds were used to save individual banks. Banking regulators or legislatures in many countries prevented individual failures at substantial cost or risk to taxpayers.

More than a century ago Walter Bagehot proposed a rule that avoids crises affecting the payments system without the use of public funds. Bagehot (1873). I have summarized Bagehot’s rule elsewhere. Meltzer (1986, pp. 82--83).

"First. That these loans should only be made at a very high rate of interest. This...will prevent the greatest number of applications by persons who do not require it [assistance.] The rate should be raised early in the panic, so that the fine may be paid early; that no one may borrow out of idle precaution without paying well for it. ...

"Secondly. That at this rate these advances should be made on all good banking securities, and as largely as the public asks for them. The reason is plain. The object is to stay alarm, and nothing therefore should be done to cause alarm. But the way to cause alarm is to refuse some one who has good
security to offer. ...If it is known that the Bank of England is freely advancing on what in ordinary times is reckoned a good security -- on what is then commonly pledged and easily convertible -- the alarm of the solvent merchants and bankers will be stayed. But if securities, really good and usually convertible are refused by the Bank, the alarm will not abate, the other loans made will fail in obtaining their end and the panic will become worse and worse. ... The only safe plan for the Bank is the brave plan, to lend in a panic on every kind of current security, of every sort on which money is ordinarily and usually lent.' " Bagehot (1962, p. 97 emphasis added.)

I summarized Bagehot's rule in four points.
1. The central bank is the only lender of last resort in the monetary system.
2. To prevent illiquid banks from closing, the central bank should lend on any collateral that is marketable in the ordinary course of business. It should not restrict lending to paper eligible for discount at the central bank in normal periods.
3. Central bank loans, or advances, should be made on demand at a rate of interest above the market rate. This discourages borrowing by those who can obtain accommodation in the market.
4. The above three principles of central bank behavior should be stated in advance and followed in a crisis.

Bagehot placed great stress on what we would now call credible commitment to a rule for crisis management. His book, Lombard Street, does not criticize the Bank of England for failing to lend in a crisis. The principal criticism, repeated several times, is that the Bank hesitated before acting. Hesitation allowed distress and panic to spread.

Bagehot's rule leaves no scope for central bank discounting in the ordinary course of business. The quantity of base money is determined by open market operations. Demand for discounts at a penalty rate signals that credit markets are not operating properly -- that there is a market failure and an actual or incipient crisis. The central bank must meet the crisis by providing reserves, against good collateral, on
demand at a penalty rate through the discount window. By keeping collateral requirements, the central bank reduces the risk of socializing private losses. When the crisis passes, discounts are repaid and growth of base money is again controlled entirely by open market operations. If the central bank follows a monetary rule, Bagehot's rule for discounting becomes part of the monetary rule.

Neither Bagehot nor his contemporaries saw any conflict between the role of a central bank as lender of last resort and its role as supplier of base money. The gold standard was the operating rule in England at the time and, I suspect, it never occurred to Bagehot or to the directors of the Bank of England that the gold standard was inconsistent with the rule for crisis management, although they knew that it would be necessary on some occasions to suspend convertibility temporarily.  

The issue of compatibility was raised later by critics of rules for monetary policy. The critics pointed out that if the central bank followed a monetary rule instead of responding to a crisis, the payments system would be at risk. To safeguard the financial system, the rule would have to be suspended. This claim is false.

Bagehot's rule is consistent with rules for price stability such as those proposed by Friedman (1959), McCallum (1988) and Meltzer (1987). During a crisis, growth of the monetary base would respond to the demand for base money at the discount window. The supply of base money would increase relative to the normal operation of the rule. There would be no need for discretionary judgment by the central bank. Market responses would replace discretion. The penalty rate assures that discounting would be limited to times of market failure. When the increased demand for base money ended, growth of the base would again be given by the rule for price stability.

Goodfriend and King (1988) suggest that the discount window be permanently closed. In their scheme, base money would be supplied only through open market operations. Their proposal has the advantage of eliminating the subsidies to

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6 The reason is that currency issue was subject to a 100% gold reserve under the 1844 Act, so the Bank of England could not always satisfy the demand for Bank of England notes during a crisis unless the government suspended convertibility. With that proviso, the rule and the gold standard were compatible.
discounting and the complex administrative arrangements introduced in many countries to limit discounting.

In commenting on their paper, Meltzer (1988), I pointed out that, if the discount window operated according to Bagehot's rule, banks or financial institutions would have access to base money even if the central bank failed to act. In the depression of the 1930s, and in many of the panics discussed by Bagehot, access to base money at a penalty rate would have eliminated the threat to the payments system. Discounting is socially valuable if it can be done at a penalty rate. Their proposal removes this safety net.

If the government opts for a currency board, the central bank or monetary authority cannot serve as lender of last resort. Recent Argentine banking problems highlight this conflict between the monetary rule and the lender of last resort function. To respond to a bank or currency run and maintain the fixed exchange rate, banks must either insure mutually, borrow abroad, or rely on government borrowing and advances. Under British colonial currency boards, bank branches in the colonies borrowed from the home office in Britain. In 1995, the Argentine government borrowed abroad and at home to establish a fund to make loans to solvent, troubled banks. At the same time, the government increased taxes and reduced other spending to provide a fund for absorbing losses at some provincial banks. The government became the lender of last resort, opening the way for moral hazard.

This discussion presumes that the banking system remains subject to runs and potential crises. Recent work questions whether reform should seek a more efficient way to supervise and regulate banks and other intermediaries that reduces regulatory burden and the risk of bank runs.

III. Repairing Regulatory Systems

The recent problems of banking systems in many countries and heightened understanding of principles of insurance and risk have produced new proposals for reform of regulation and supervision. Several proposals recognize that regulatory arrangements and regulations change the incentives faced by participants and the
riskiness of the system. The best parts of this new literature also recognize that forbearance and political intervention are present and not likely to disappear if there is scope for their operation. An efficient system of regulation must seek to minimize regulatory burden and the costs of the safety net while recognizing that political intervention to prevent failure or to shift the costs of failure can raise social cost.

The distinguishing feature of the new approach to regulation is increased reliance on market forces. The new proposals do not eliminate supervision and regulatory oversight; they supplement and, to a degree, substitute market forces for more traditional methods of regulation. Some of the proposals I discuss have been made by central bankers and some by academic economists. One of the academic proposals was the intellectual foundation for the recent legislation in the United States known as FDICIA -- the Federal Deposit Insurance Corporation Improvement Act. Chile and Peru have adopted some of these new approaches. I sketch the general idea in these proposals then develop the Chilean law in more detail.

Both the Reserve Bank of New Zealand (1993) and the President of the Federal Reserve Bank of Cleveland, Jordan (1993), propose to expand the amount of publicly available information about the quality of bank portfolios. Banks would publicly release information that has been available to regulators but withheld from the public. Depositors are expected to respond to information on the quality of a bank's portfolio by withdrawing deposits from riskier banks. This response is expected to alter banks' practices. Knowing that their position would become public, banks would be quicker to respond to potential losses and more careful about making marginal loans.

The Reserve Bank proposal requires banks to post a credit quality rating at each branch. Minimum capital requirements and publicly available information on asset quality substitute for direct examination. The Reserve Bank monitors published reports, licenses banks, and enforces capital standards along lines similar to those proposed by Benston and Kaufman (1988). Troubled banks are required to stop

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7This is similar to the proposal in Meltzer (1967), but I accompanied the proposal with a recommendation that deposit insurance be privatized and related to risk. My views on insurance have changed, as noted below.
lending if capital falls below 6% of assets, and management is replaced at a 3% ratio. Banks disclose credit quality quarterly and are audited semi-annually. The Reserve Bank retains the right to ask for additional information and continues to serve as lender of last resort. The lender of last resort function would be executed in the open market. There is no explicit deposit insurance.

Jordan's proposals for changes in regulation and supervision are broadly similar to the Reserve Bank proposals. Capital value and published information on portfolio valuations and losses replace the judgment of regulators. This information about management and performance signals to depositors, lenders and equity owners. Regulation and supervisory mandates come to the fore when losses reduce capital below a fixed threshold. Jordan does not discuss deposit insurance or the lender of last resort function.

Proponents believe that the new system will be less costly and more effective. The scope for cost reduction is large. Jordan reports that in the U.S. out-of-pocket costs of the present system of regulation were between 25% and 50% of industry profits in 1992.

The Chilean Banking Law

After its costly experience in the first half of the 1980s, Chile completely revised its banking laws beginning in 1986. The new law has been used as a model by Peru. Three principles underlie the regulatory system: (1) transparency, (2) preventive control and pre-commitment, and (3) loss-sharing between the government, some depositors, and providers of bank capital, equity and debt or debentures.

To make the position of individual banks more transparent, banking regulators made two types of changes. First, there is less secrecy about bank positions and risks. Second, measurement of a bank's networth recognizes prospective losses. Recognizing that mark-to-market accounting is difficult in practice, Chilean authorities have moved toward market accounting without accepting the principle as a formal

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8This section is based mainly on Superintendency of Banks (1992), Ramirez and Rosende (1992) and, to a lesser extent, Larrain (1989).
requirement. There are several, related practices.

First, banks classify loans into four risk groups based not on past due payments but on current assessment of repayment capacity of the borrower, the borrower's past record, and the value of collateral.

Second, government auditors review banks three times a year. A summary measure similar to the U.S.'s CAMEL rating (Capital, Assets, Management, Earnings, Liquidity) is given to the bank and published in major newspapers.

Third, private, risk-rating firms provide information to depositors and others twice a year.

Fourth, Chilean banks have been part of industrial and commercial groups. There is now mandatory disclosure of loans to the group, and loans to different members of the group are consolidated.

Chilean authorities gave considerable attention to the need for preventive control and non-discretionary, pre-committed responses. This is particularly important for establishing a credible framework that reduces the risks of government bailout, forbearance, and moral hazard.

A bank's net worth is adjusted several times a year to take account of prospective losses and current economic values. Since many banks do not have publicly traded shares, market value cannot be used for current valuation. Adjusted net worth takes account of prospective portfolio losses. When adjusted net worth falls below 40% of the value on January 1 of the same year, the bank must recapitalize. The same is true if the debt/equity ratio is above 20 to 1 on January 1 and under other circumstances.

The law forbids the Superintendency from delaying recognition of losses, and forbids the central bank from issuing guarantees to depositors (or others). When the central bank assists depositors in distressed banks, it does so by becoming a creditor of the bank with priority over other creditors.

Chile also introduced some additional requirements for non-discretionary action. For example, reliance on emergency credit from the central bank three times in a year, failure to meet the liquidity requirement, or payment of a deposit rate 20%
above the average rate triggers a regulatory response. See Glaessner and Mas (1991, p. 25) for other examples.

Chile also developed rules for deposit insurance that avoid taxpayer responsibility for many banking losses. These loss sharing arrangements provide for full convertibility of all liquid deposits, defined as demand deposits and those time deposits with remaining maturity of ten days or less. Banks must maintain a reserve equal to 2-1/2 times the bank’s capital and paid-in reserves to prevent or reduce bank runs.

In the event of insolvency, holders of all non-liquid deposits and owners of bank debt can accept equity in place of their claims. This option recapitalizes the bank’s capital and reduces its liabilities. The law provides that the new shares can be subject to repurchase by the bank from surpluses belonging to the original shareholders. Small depositors (below US $2000) receive a government guarantee of their liquid liabilities.

If the Superintendency finds that a bank is insolvent, it revokes the bank’s charter and places the bank under mandatory liquidation. An element of discretion enters, however: Liquidation must be agreed to by the central bank and completed within three years. The central bank pays off owners of liquid deposits if the bank’s net assets are insufficient. They are given preference over other creditors.

Chile’s law has several attractive features. If the law works as intended, it will maintain the payments system, prevent bailouts, eliminate moral hazard by closing banks promptly, avoid contagion effects (bank runs), disclose enough information to encourage conservative banking, share risks with the public and bank owners, and gain some of the advantages of mark to market accounting.

The law has not been tested. Chile has not experienced banking problems or distress during the years since 1986 when the law first became effective. It remains unclear whether the new system can work as intended if Chile experiences a degree of macroeconomic instability similar to its experience in the 1970s and 1980s.

Some specific features are sources of potential problems. First, Chile is a small country that is unlikely to achieve broad diversification in domestic banking assets.
The banking law may work effectively to reduce individual failures but is unlikely to work if there are systemic disturbances.

Second, Chile has a pre-announced program to limit deposit insurance or guarantees to about 40% of the banks’ deposits. Ramirez and Rosende (1992). Past experience suggests that this restriction is open to political pressure. This becomes more likely if, as in the past, foreign banks and governments threaten to withdraw lending unless loans and deposits are repaid in full. Under such conditions, governments may choose to honor most domestic claims as well.

Third, the ratio of debt to equity is set arbitrarily at 20 to 1. This ratio does not reflect Chilean history. A better standard would set the debt-equity ratio at a level consistent with Chilean experience and the number and frequency of failures deemed acceptable.

Fourth, there is an inevitable lag between the time management receives information and the time regulators are informed. Chile’s law tries to reduce this problem, but the experience of many countries with different regulatory systems is not encouraging. A management that believes a particular risk profile is appropriate, desirable or warranted will find ways to achieve it. Modern financial instruments increase management’s opportunities to alter risk positions quickly.

Fifth, recapitalization of a bank by the depositors or debt holders occurs at a time when the regulator can declare the bank insolvent. The bargaining positions appear to be unequal. Acceptance by a majority of creditors binds all creditors, so the law imposes some avoidable risks on the debtors.

Finally, there is the issue of resiliency in the face of external or internal macroeconomic instability. In the past, capital flight, large changes in real exchange rates, or foreign or domestic inflation have been the source of major financial distress. This problem remains.

An Alternative Proposal

Benston and Kaufman (1988, 1993) would retain deposit insurance but reduce
its role. Banks would issue uninsured subordinated debentures and equity.\(^9\) Benston and Kaufman somewhat arbitrarily set “adequate” total capital at ten percent of assets and measure assets at market value to the extent possible. The role of regulators increases as capital falls relative to assets. For example, when capital falls below 6% of assets, the regulator would be required to suspend payment of dividends, interest on subordinated debt, and net payments to parents or affiliates. This would put the bank in default and invoke action by creditors. Below 3%, supervisors would be required to take control of the bank, recapitalize it, or liquidate it.

Illustrative Benston and Kaufman rules are (Benston and Kaufman, 1988, p. 91):
- Banks with more than 10% capital-asset ratio face minimum regulation and supervision. Fraud provisions are enforced. All intra-holding company transactions are disclosed.
- Banks with 6 to 10% capital ratios are subjected to more intensive supervision and monitoring. Regulators have discretion to suspend dividend payments to shareholders and payments to parents or affiliates.
- Banks with capital ratio between 3 and 6% receive intensive monitoring. Dividends to equity owners and interest on subordinated debt must be suspended. Subordinated debt, including maturing debt, cannot be redeemed, and there can be no outflow of funds to parents or affiliates. (The bank is in default on its debt.)
- Below a 3% capital-asset ratio, the bank must be recapitalized, sold, merged, or liquidated.

A main aim of the Benston-Kaufman proposal, like the Chilean law, is to

\(^9\)The authors note (1988, p. 71) that at the beginning of the 20th century, U.S. banks had capital-asset ratios in the neighborhood of 20%. In the 1930s the ratio was about 15%. At the time they wrote, the ratio was 7%. Life insurance companies hold 20% capital asset ratios, and diversified insurance companies 11%.
increase the incentives of the creditors and owners to monitor their bank's performance and protect their interest. If the proposal had been in place in the 1980s, there would have been less forbearance, less delay in response, and smaller losses borne by taxpayers to pay for the losses at U.S. thrift institutions.

Some of the features of the Benston-Kaufman proposal have been enacted in the U.S. as part of the FDICIA. As the authors note, the law "imposes less severe, less mandatory, and less rapid regulatory responses" than they proposed. Benston and Kaufman (1993, p. 47). In fact, FDICIA leaves much room for discretion and, therefore, forbearance. This weakens the protection of the deposit insurance fund and taxpayers.

Merton and Bodie (1993) raise four objections to reliance on capital requirements, particularly subordinated debentures. First they note (p. 17) that the protection furnished by capital requirements is effective only if regulators promptly close failing banks. This is correct but partial. There are costs of early closing as well as costs of delay (see Kane and Yu, 1993). Many U.S. banks and thrifts that would have been forced to close in 1981 had become viable again a few years later. This is not an argument for forbearance; it recognizes that, as always, there are costs of acting early as well as late.

A second problem is the appropriate size of the required ratio of capital to assets. The amount of capital deemed to be adequate depends on the volatility of asset prices, the mix of assets that a bank holds, and the covariance of asset prices. These determinants should be used to set capital requirements. However, if banks respond to higher capital requirements (or falling asset prices) by increasing risk, norms based on past experience will be poor guides to future risk. The problem for regulators is to set standards for capital adequacy and intervention knowing that banks will react to the standards by choosing a different risk position. The Basle risk-based capital requirements are an effort to assess the risk in bank assets and relate bank capital to asset risk. The Basle procedure seems a blunt instrument, however, for dealing with a complex and changing problem, and it neglects the effect of covariance when assessing risk.
A third problem is pricing the risk assumed by the debenture holders. If the debenture holders are subordinated to the bank insurance fund, they share the residual risk with the equity owners. This would heighten their interest in monitoring the bank, but it also raises the risk premium on subordinated debentures. Benston and Kaufman clearly intend the debentures to be subordinate to the insurance fund to prevent holders from selling the best assets and leaving defaulted securities to the insurance fund. However, the symmetric risk is also present and must be reflected in the yield on the debentures. The authors do not consider whether the system they propose would permit banks to earn a competitive return. Nor do they allow for the risk of political interference that would delay regulatory enforcement of the capital requirements.

Fourth is the problem of monitoring banks’ assets to establish value. On this issue, Chilean law requiring frequent risk adjustment of asset and capital values is superior. In both Chile’s law and the Benston-Kaufman proposal, many of the problems of supervision and regulation return. Marking bank loans and non-marketable securities to market requires considerable judgment whether it is done by the bank, its auditors, or regulators. The specialized skills and specific information needed to make these judgments are the banker’s stock-in-trade. Others can acquire these skills, but they cannot readily do so without learning the techniques that prudent bankers have mastered. There is bound to be a relation between the risks borne by providers of capital and the returns to capital. It is not sufficient to point out that non-banks are able to borrow and sell equity. The issue is whether banks that are subject to audits and regulation, reserve requirements and deposit insurance premiums can compete effectively against less regulated competitors.

An additional problem is the measurement of capital. Many of the same reasons that make bank assets difficult to value also make capital difficult to measure. Moreover, as Berger, Herring and Szego (1995) note, banks may hold capital in excess of requirements to allow for negative shocks. Valuing the capital requires estimation of the probability of such shocks.

Despite these unresolved problems, the Benston Kaufman proposal, like
Chile's law, moves toward great reliance on market information and private incentives. A remaining issue is whether there is a less regulated alternative that is more effective.

A Radical Alternative

A radical alternative would separate deposit taking from lending. Friedman (1959) proposed 100% reserves against demand and time deposits with interest paid on reserves. Lending and security acquisition would be financed by issuing securities and equity as is done by finance companies, real estate trusts, and many other lenders.

Several proposals of this kind have been made in recent years. Banks subject to 100% reserve requirement are now called "narrow" banks. Although Merton and Bodie (1993, 1993a) deny that theirs is a narrow bank, the only difference is that their bank would be part of an institution that makes loans and acquires securities. The deposits would be subject to a 100% reserve of Treasury bills, as in a narrow bank, and the Treasury bills (or other low risk, mark to market assets) and the securities would be held in custody at the central bank. Loans and securities would be financed by issuing debt and equity. Government would offer deposit insurance. It is not clear what risk the insurance would absorb.

The Merton-Bodie proposal removes the distinction between banks and non-banks in lending and investing. All financial institutions would be subject to the same rules. Losses on loans would be borne by lenders and investors as in non-bank financial markets.

Merton and Bodie argue that banks are relatively expensive providers of deposit services. They note that money market mutual funds provide similar services at 10% of the non-interest cost of banks. Some U.S. money market funds have 100% of their assets in short-term Treasury securities, so they resemble the proposed system. However, currently there are limits on the number of checks per month that can be drawn on a money market fund. And part of the cost difference is locational, so there may be offsetting benefits to the bank. The evidence shows, however, that money market funds have taken and held a significant share of the deposit business.
and none have failed to date.

Benston and Kaufman (1993) argue that separation of lending and deposit taking removes economies of scope or synergies. They note that the two functions have been provided jointly for centuries under very different regulatory and monetary conditions. They suggest that removal of the opportunity to combine these functions in a single firm is socially costly. This cost may offset part of the gain from reducing risk and regulation.

Which type of bank would be more likely to survive in a competitive market? The answer depends on the costs of attracting capital and providing services in alternative ways, on possible economies of scope, on the likelihood of greater political intervention under one proposal or the other. I do not believe we can decide a priori.

The public should be offered a choice. One choice for banks would be to increase capital to a level consistent with the risks they undertake. These risks include restricted diversification inherent in country size and foreign exchange risk if broader diversification is permitted. A second choice could be to put their deposit business in a narrow bank and do all their lending from a non-bank firm. The narrow bank would require little capital.

The public would choose between the two options. Interest rates on deposits would differ, and there might be a service charge at the narrow bank. Competition would determine where the deposit function would be provided.

IV. Conclusion

Deposit banking has social benefits, but most depositors lack the skill, knowledge, incentives, or opportunity to monitor their bank’s position. A central issue for banking is how to organize or change the regulatory and supervisory system to achieve the benefit of deposit banking at lowest (or lower) cost.

Experience in several countries during the 1980s suggests that traditional methods of bank insurance regulation and supervision worked poorly in the past decade. Moral hazard, errors of judgment, political intervention, and fraud had a part in the failures and losses. Regulatory and supervisory systems could not or did not
prevent these problems. In some cases, the explicit deposit insurance system or implicit safety net contributed to the size and scope of the problem. The paper discusses some principal reasons for failure and recommends replacement of traditional regulation and supervision with market based regulation and strict rules that prevent forbearance.

Market discipline can supplement or substitute for traditional regulation. One type of proposal would increase the amount of capital and impose rules for capital maintenance. A second type would separate deposit taking and lending activities. So-called narrow banks would offer deposits backed entirely by Treasury bills or other riskless assets. Lending would be separated and financed by issuing debt and equity. Lenders' liabilities would be uninsured. Regulations would be reduced.

The two proposals have different costs and benefits. It is not clear whether the loss of economies of scope under the narrow bank is large enough to offset the increased capital costs and regulatory costs of the alternative. Nor is it clear that small countries have sufficient diversity in their economies to make capital requirements workable. Experiments in several countries would be useful to choose the better type of market-based regulation.

Both proposals, particularly the narrow bank, differ from the Basle proposals for risk-based capital. The Basle rules assign financial assets to arbitrary risk groups. A bank chooses its asset position, on the margin, taking account of the cost of increasing capital. Regulators' decisions, not market forces, determine the portfolios that banks hold. It is hard to see how banks would flourish in competition with less regulated financial institutions. More importantly, it is unlikely that the Basle rules will work as intended; they neglect modern developments in both financial theory and practice. And they continue reliance on supervision, regulation, and auditing that have contributed to the size of losses and social cost of failures.

A related issue is the role of the lender of last resort. A narrow bank eliminates the need for a lender of last resort for the banking system, but there are advantages to having a lender for the financial system to prevent spread of default. The design of a lender to avoid both subsidies and interference with goals of monetary policy such as
price stability has long been possible. Rules for the lender devised by Bagehot a century ago remain appropriate.

Market-based regulation and supervision can reduce risk. But it does not require much vision to see that many of the problems of banking and financial markets in recent decades have been either caused or worsened by unstable monetary and fiscal policies at home and abroad. Large changes in the real exchange rate can be costly even if banks do not hold foreign assets. Sudden shifts in capital flows can weaken the financial structure. Shifts in real exchange rates and capital flows are endogenous responses to real or anticipated policy changes and changes in economic performance.

Relatively safe and sound banking and financial systems cannot be produced solely by reform of regulation or greater reliance on markets. Economic policy, too, should change. More stable, more predictable, less inflationary policies are the senior partner in the effort to maintain financial stability.
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