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Financial Safety Nets: Lessons from Chile

Philip L. Brock

Should governments ever override bank regulators who are attempting to close down insolvent financial institutions? An analysis of Chile's history shows that time after time from the 1850s to the 1980s, prudential banking regulations were abandoned during economic crises when attempts to impose tight solvency standards proved impossible to enforce. Chile's current stringent banking regulations may prove more durable, but mounting financial distress is equally likely to lead the government to adopt policies that prevent bank failure but undermine the authority of regulators.

Bank regulators, including the central bank, are responsible for creating a financial safety net to protect depositors against loss and for enforcing the rules of prudent behavior that are required for a stable financial system. Because safety nets often additionally cover losses to bank owners and borrowers, the support they offer encourages risk-taking by the private sector—an action that may promote financial deepening, but at a high budgetary cost to the government. Poorly designed safety nets may have to be suspended during crises to prevent losses from mounting and to limit the government's liability.

The central aim of government-created institutions and regulations establishing financial safety nets has been to strengthen the financial system's ability to withstand bank runs and severe economic shocks while at the same time shifting risk to the government and promoting financial deepening (an increase in the stock of financial assets). Although it is frequently said that the best safety net is one that results in market participants behaving as if it did not exist, well-designed safety nets *should* alter bank behavior.

This article explores the issues surrounding financial safety nets in small, open economies, drawing on Chile's experience in the 1980s. It argues that a good institutional safety net will balance the benefits of financial deepening with the costs of shifting risk from the private sector to the government. Financial deepening, which is typically measured as an increase in the ratio of bank liabilities to gross domestic product (GDP) or in broad measures of bank assets to GDP, is generally regarded as a

good thing for an economy because it relaxes self-financing constraints and is associated with the increasing monetization of transactions. The components of a good safety net—including lender-of-last-resort facilities, deposit insurance, capital requirements, supervision, and closure and recapitalization rules—must be designed to control the amount of risk borne by the government. Without prudential supervision, the anticipated benefits of financial deepening may be illusory.

The discussion shows how government regulation can lower the cost of lending. The creation of better bankruptcy laws, the granting of special legal powers to bank boards, and the requirement that liquid bank liabilities be backed up by liquid assets are all ways in which prudential regulations can expand the scope for intermediation by banks and other financial institutions. Although prudential regulation does not always accompany the creation of an explicit safety net, it frequently results in government intervention during financial crises, even when the government has no formal role. The article then describes the creation of central banks as an example of an innovation to promote financial deepening and expand intermediation by formally monitoring bank operations and by acting as lender of last resort to ensure the liquidity of the banking system.

The extension of the financial safety net to depositors is a relatively new and untested development in many countries. If the state has a comparative advantage in monitoring banks, deposit insurance has the potential to improve welfare and expand output, but it also may misallocate an economy's resources. For most small, open economies the long-term challenge to prudential regulation of the financial system is to protect depositors in the wake of large macroeconomic shocks.

Characteristics of Prudential Regulation

Banks typically have been subject to a moderate amount of regulation committing them to observe more stringent prudential practices than they otherwise would guarantee depositors. Under this sort of regulation, bank closures generally are triggered by bank runs, and the government remains outside the compensation process as far as depositors and other bank creditors are concerned. Even so, pressures arise to provide aid to debtors during severe economic downturns. An example from Chile illustrates how borrowers who owed money to a financial institution with no explicit safety net were able to generate enough pressure on the government to force it to create an ex post safety net.

Borrower Distress in the 19th Century

During the gold rush of the early 1850s, demand for grain exports from Chile to California and Australia surged. New loans for large landowners who were anxious

to expand production were unavailable, however, because existing mortgage laws were poorly defined in legal terms and because potential lenders lacked reliable information on the holdings, quality, and legal status of the properties involved.

In 1856 the Chilean Congress responded by creating a special mortgage giving clear rights in case of default to the lender. Property registries were set up to make information on sales, mortgages, and censuses readily available, and a state-sponsored mortgage bank, the *Caja de Crédito Hipotecario*, was established.¹ The property registries helped to mitigate the information problem facing lenders, and the *Caja* became a monitor that could reduce the costs of lending by adhering to legally mandated collateral requirements, holding a diversified portfolio of loans, and applying economies of scale in monitoring. The new mortgage law gave clear authority to the *Caja* to enforce bankruptcy proceedings if a landholder fell sufficiently behind in making mortgage payments.

The reform of mortgage laws and the creation of the *Caja* shifted some risk from landowners to the *Caja* and to purchasers of its securities. By the end of 1860 more than 5 million pesos of the *Caja*'s securities were in circulation (equal to 10 percent of exports). The financial deepening associated with these agricultural loans propelled the expansion of irrigation and other improvements to the land.

Although the rapid five-year credit expansion permitted landowners to undertake capital improvements on their land, it also exposed them to macroeconomic shocks. When the California and Australian export markets collapsed in the late 1850s, many Chilean landowners were unable to make their mortgage payments. In 1858–59, responding to intense pressure to prevent the foreclosure of landholdings, the government clandestinely funneled about 2 million pesos to landholders (which it skimmed from a 7-million-peso railroad loan that had been financed in the London bond market). This action, which effectively shifted the risk to the taxpayers, was not envisioned by the *Caja*'s institutional structure and was opposed by the foreign investors who had supplied the capital for the railroad loan. In 1860 a new government was installed, and it tried to recover the clandestine loans. The resulting economic contraction of 1861 and 1862, which produced the liquidation of a large number of landholdings, was Chile's first financial crisis and one of the most severe economic contractions of the 19th century (Brock 1992; Fetter 1931).

This example highlights features common to the dynamics of many implicit financial safety nets. The *Caja* and the accompanying legal reforms were created to promote financial deepening. In theory, prudential lending practices were legally mandated so that the risk to the *Caja* was carefully controlled. In practice, though, the *Caja* expanded mortgage lending so quickly that it became overexposed to the risk of a mass default by landowners in the event of a crisis. The threat of massive bankruptcies initially created pressure for a remedial safety net underwritten by the government and then contributed to a severe economic downturn when the properties were finally liquidated.

The Establishment of Central Banks

Governments have devised ways to deal with these kinds of problem by establishing central banks and other financial institutions to supervise banking activity. The creation of the Federal Reserve System in the United States in 1914 is often described as a legislative response to instability in the financial sector.

Similarly, the introduction of central banks into Latin America in the 1920s and 1930s had far-reaching consequences for financial deepening and for incentives to shift risk to the government. The Central Bank of Chile, like that of several other countries in Latin America, was established on the recommendation of a commission headed by Edwin Kemmerer, a professor at Princeton University, who proposed a central bank and a superintendency of banks that would jointly watch over the financial system.

The institutions and laws recommended by the Kemmerer Commission modernized banking rules and made all banks subject to standardized conventions of management and accounting, and they established minimum ratios of capital to assets and of reserves to liabilities. Bank superintendents were created to examine the banks and to enforce banking legislation (the detailed rules and norms issued by the central banks). The superintendencies were located outside the central banks under the aegis of the finance ministries, but they were set up as semipublic institutions and were guaranteed independence from the finance ministries and the rest of the government. The central bank was required to hold gold and foreign exchange reserves sufficient to cover at least 50 percent of its liabilities.

The key policy tool was the rediscount window, which allowed central banks to extend credit only against the collateral of short-term commercial paper (Tamagna 1965). Central banks established one set of discount rates for banks and a slightly higher set of discount rates for the public. The former were intended to foster the role of the central bank as the lender of last resort. The slightly higher, but moderate, public rates were designed to put pressure on banks to lower interest rates on loans and make rates more uniform.

The new legislation and institutions did not create an explicit safety net for banks. They did set up capital requirements, provisions for monitoring financial institutions, and authority to close banks. These measures reduced the costs of financial intermediation and led to financial deepening by decreasing the costs of borrowing.

The legislation in Chile created a guarantee that domestic currency would be convertible into foreign exchange at a fixed exchange rate. This, in combination with the newly instituted oversight of the banking system, created strong incentives for foreign investment. In essence, the fixed exchange rate with fiscal oversight of the banks created an implicit guarantee of the banks' foreign exchange liabilities, thereby shifting the risk to the government. As more investment was intermediated through the financial system, financial depth increased.

The Emergence of the Safety Net

The conditions that led to the creation of the safety net in Chile were similar to those that have become familiar in more recent financial crises in the region. In the late 1920s Chile's banks were financially stable. They operated with capital-to-asset ratios of 20 to 30 percent; they were rigorously monitored by the Superintendency of Banks; and the mechanisms for closing troubled banks were enforced. By normal standards, there was no need for a safety net for the banks. Indeed, the whole apparatus lowered the cost of financial intermediation, so that depositors required a smaller premium, borrowers paid lower loan rates, and foreigners were assured that their loans would be repaid in foreign currency. All of these effects enhanced financial deepening between 1925 and 1929.

Following the creation of the Central Bank and the passage of accompanying banking legislation in 1925, the economy grew at an average rate of about 10 percent a year from 1926 to 1929. With the start of the Great Depression, Chile's GDP fell 11 percent in 1930, 17 percent in 1931, and 27 percent in 1932—a cumulative decline of more than 50 percent in three years. As the economy spiraled downward, the Superintendency of Banks and the Central Bank raised deposit rates in several incremental steps up to the third quarter of 1931. The superintendency also took strong steps to force banks to adjust to the deterioration in the quality of their loans and investments, including stepping up inspections of loan portfolios, requiring bonds and real estate investments to be priced to reflect the downturn in prices, enforcing provisioning against possible loan losses, and setting penalty interest rates on nonperforming loans. The immediate result was a rise in nonperforming loans, which climbed from 4.3 percent of total bank assets in 1929 to 15.3 percent by the end of 1931. As a result of the economic and financial deterioration, 4 of the 22 banks in the country were forced to close in 1930 and 1931.

Through mid-1931 the economy's adjustment followed the rules of the gold standard—outflows of gold produced a contraction in the money supply. Between January 1930 and July 1931, the Central Bank lost more than half its gold holdings but still had a reserve of 72 percent against its demandable liabilities (notes and deposits). From July 1931 to the beginning of June 1932, economic policy began to deviate from the automatic adjustment of the money supply to changes in the Central Bank's gold holdings. Exchange controls were announced on July 30, 1931, to protect the remaining gold reserves, following an earlier default on Chile's foreign debt.

In mid-1932, amid growing civil opposition to the government's largely inactive economic policies, the military staged a coup and established a socialist republic, which lasted only 100 days. During this time, the president, who was given vast powers to intervene in the economy, introduced trade quotas, import licenses, and a jobs program for the unemployed. The government also devalued the currency 70 percent and declared a three-day bank holiday (June 6–8, 1932), during which bank

deposits were frozen and foreign funds in the banking system were declared the property of the state. In an effort to bail out private debtors, a moratorium on the repayment of debts was announced (Ellsworth 1945).

In the next six months, successive governments increased domestic credit by about 800 million pesos, equal to about 70 percent of the banking system's total loan portfolio (Chamorro 1985). Recovery was rapid; in the first year real GDP rose 16 percent, due in part to an improved external environment. The government also announced a 10-year tax holiday for all new commercial and residential construction under way by the end of 1935, creating a building boom that succeeded in raising depressed property prices. The 30 percent price increase between June 1932 and June 1933 provided debt relief to enterprises that had borrowed funds, while interest rates were controlled at low rates and penalty interest rates were rescinded. In 1933–34 the real value of debt was reduced substantially, and nonperforming loans declined rapidly.

The main lesson here is that orthodox governments frequently respond to a financial crisis by initially affirming that there is no safety net, only to announce later a series of emergency rescue measures that create one in response to pressures generated by widespread financial distress among borrowers. Did the new Central Bank and bank regulations lower the cost of financial intermediation too much? “Too much” refers in a narrow sense to the government's ability to make good on its fixed exchange rate guarantee. In a broader sense it refers to the government's desire to insure against large macroeconomic shocks. In Chile, as in much of Latin America during the 1930s, the answer was that governments could not guarantee the banking system under the rules of the gold standard. The ad hoc bank safety nets created at the start of the Great Depression saved the banks at the cost of capital levies on depositors, moratoriums on foreign debt service, and emergency loans from the central banks.

Financial Liberalization

The attempts at financial liberalization that began in the Southern Cone of South America in the 1970s and spread throughout the world during the succeeding two decades have not been painless. Liberalizing countries eliminated targeted credit programs and lifted interest rate controls. In addition, new banks were allowed to begin operations. However, in most countries the existing financial regulatory structures were not designed to require that banks be evaluated when they reshaped their portfolios from government-directed loans toward much higher yield loans to companies and consumers. Monitoring their borrowers has proved to be difficult for banks, and deficient internal bank controls on both initial and ongoing loan evaluations have allowed banks to lend even in circumstances in which repayment seems unlikely.

Government bank examiners have been equally incompetent; many of the best examiners have been hired away by banks at high salaries, and those who remained have been too few and too powerless to meet the demands placed on them. During liberalization, bank capital often has been inadequate, and even published capital-to-asset ratios frequently have been overstated by officials anxious to conceal bad loans. Bank managers may even resort to accounting gimmicks such as double-gearing, whereby a bank lends, say, \$100 to a firm within its group so that the firm can buy \$100 of the bank's stock. The bank's reported capital rises by \$100, but the group's capital remains the same.

Because financial liberalization frequently results in increased risk, governments typically guarantee funds lent to banks by domestic and foreign lenders who otherwise would hesitate to invest in banks that might fail. The Chilean government's rescue of Banco Osorno in early 1977, for example, saved foreign creditors from losses that would have put an end to the capital inflows that were helping to fuel the economic recovery. The implicit government guarantees associated with that rescue meant that bank spreads (that is, the difference between loan rates and deposit rates) were kept much lower than they would have been otherwise, attracting more borrowers and encouraging financial deepening. The ratio of private sector domestic credit to GDP rose from 8.8 percent in 1977 to 39.3 percent in 1981 (Brock 1996). But in the context of poor monitoring capacity and low bank capital, the implicit guarantees meant that the government was assuming excessive risk.

The apparent initial success of Chile's liberalization was held together on the strength of an implicit government guarantee to protect depositors and other bank creditors. The true extent of the safety net was unveiled only as the financial crisis began. Because governments virtually always step in to save banks from failing, even when there is no explicit provision for a safety net, financial structures should be designed to take into account past experience with these ex post safety nets. The example of Chile illustrates the point and demonstrates that once the financial safety net has been thrown out to save banks, untangling it may be complex and time-consuming.

The Implicit Safety Net in Chile

In Chile, as in many other countries, the financial crisis initiated an exchange rate crisis. Throughout 1981 and the first six months of 1982, the financial sector continued to deteriorate. In June 1982 the government devalued the currency and instituted a preferential exchange rate for dollar debtors—a subsidy that would amount cumulatively to about \$3.4 billion by the end of 1987—to reinforce the government's implicit guarantee that the fixed exchange rate would be a permanent anchor for the economy. In July the central bank began to buy part of the banks' bad loan portfolios at face value and agreed to buy back the rest of the loans over a three-to-five-year

period. This action improved the banks' balance sheets by replacing nonperforming assets with a Central Bank bond, but because the bond paid no interest and was not transferable, no resources were transferred to the banks.

Regulatory forbearance also played a role in the safety net. In September 1982 the Superintendency of Banks allowed banks to use the June 30 exchange rate in calculating the peso value of their dollar liabilities. This represented a 35 percent understatement of the value of dollar liabilities by the end of 1982, but it prevented several banks from violating minimum regulatory capital ratios. Banks originally were told to provision against these losses by the end of 1982, but the deadline later was extended to the end of 1986. In addition, in October 1982 the authorities extended the time limit for declaring a loan nonperforming from 30 days following failure to make a loan payment to 90 days.

The intervention in the flagship banks of the two largest economic conglomerates on January 13, 1983, also stabilized the financial system by terminating the creation of shell companies (that is, companies that existed only on paper) and by blocking other measures such as the use of offshore subsidiaries to evade prudential regulations. This step brought more than 50 percent of the financial system's assets and liabilities under the direct control of the government and provided explicit government backing of the liabilities of the remaining institutions. It also gave the government control of several of the largest firms in the economy.

In a major departure from previous policy, the government announced that all existing bank debt, both external and domestic, would now be guaranteed by the government. Although the new law created a huge contingent liability for the government associated with bank insolvencies, it prevented a run on the banks and, by converting external debt into sovereign debt, averted the forced liquidation of banks by foreign creditors.

By early 1983 it had become clear that many loans would not be repaid at the contracted terms. In April of that year, in response to the growing threat of a debtor revolt, the government announced a restructuring plan to reschedule 30 percent of an eligible company's debts for 11 years, with a 1-year grace period for interest and a 5-year grace period for principal. The operation created a cash flow subsidy to the banks that amounted to 7 percent of the amount of the restructured loans. The last major stabilization measure, announced in June 1983, protected holders of home mortgages by rescheduling installments unpaid since 1981.

Modifying the Guarantees

One year after the devaluation, all the safety net measures were in place. Three of the programs were modified substantially the next year. In February 1984 the government expanded its repurchase program and shortly thereafter extended the produc-

tive debtor plan and home mortgage refinancings. None of these measures entailed restructuring the financial system; the largest banks and enterprises were still in limbo, under temporary government control but without any plan to restore private ownership.

In 1985 a new finance minister raised the argument with foreign creditors that the Chilean government had provided \$3.4 billion to date to help borrowers repay their dollar loans and that it was time for the foreign creditor banks to bear their share of the losses. For their part, the creditor banks were pressing Chile to renew its guarantee on bank debt, much of which was due to mature during 1985–87. In subsequent negotiations the government agreed to the renewal, and the banks' creditors gave tacit approval to debt buyback and debt-equity conversion mechanisms. Between mid-1985 and mid-1987 about \$3.2 billion in bank debt was written down or converted into equity by these mechanisms at market discounts of about 30 percent. These transactions were essential for recapitalizing Chile's banks.

Between 1982 and 1984, 17 private banks had exchanged bad loans for Central Bank bonds. In January 1985 a "popular capitalism" law authorized the Central Bank to capitalize a portion of its loans to the five banks over which the government had assumed control. The law resulted in the recapitalization of four of the five banks (the fifth merged with another bank). Existing stockholders had first claim on stock purchases. The remainder was given to the Chilean Development Corporation (CORFO) and then sold in small amounts to individual investors.

In 1989 concern regarding the possible fiscal manipulation by future governments of banks' ability to repay led the outgoing military government to redraft the agreements between the banks and the Central Bank. In place of a fixed obligation, the new law created a debt obligation that was equal in nominal value to the fixed obligation but that had no fixed timetable for payment. The new contracts were protected by law against unilateral changes by the Central Bank. In the case of the five heavily indebted banks, there was effectively no date by which the subordinated debt would ever be repaid.

When the newly elected democratic government took power in 1990, the total value of the subordinated debt of 11 banks was about \$3.3 billion, while the value of paid-in capital was only \$1.3 billion. The new government wanted changes that would eliminate the indeterminacy of the resolution of the debt problem. Despite renewed efforts in 1992–93, the government made no appreciable progress in drafting a replacement for the subordinated debt law that would be acceptable to the banks. In 1995, after a series of disputes, an agreement was drafted stipulating that the banks would repay part of the debt in exchange for forgiveness of the remainder. During the negotiations the president of the Central Bank, who argued that the banks should be forced to assume a greater portion of their losses, resigned. Ultimately, the Central Bank wrote off approximately \$2 billion to recapitalize the banks.

Deposit Insurance

All financial systems have an implicit as well as an explicit safety net. Until the late 1980s, depositors generally were not included in the explicit safety net. Indeed, they generally became part of the ex post measures to prevent bank failures. In Argentina and Brazil in the 1980s deposits were frozen and then reduced in real value by high inflation as a way of improving bank solvency. Even in Chile, where deposits were guaranteed in January 1983, interest rates on deposits were kept artificially low by a combination of capital controls and Central Bank suggestions regarding the appropriate rates to pay. Since 1981 the number of countries with explicit deposit insurance programs has tripled, from 15 to 45. These programs represent a significant, but untested, institutional innovation in the adopting countries. Providing a safety net for depositors lowers the cost of deposits to banks by moving contracting problems associated with asymmetric information to the government insuring agency. As with other contractual innovations, deposit insurance leads to financial deepening and a shift in financial risk. In this way it is no different from loan contracts that banks negotiate with their borrowers. For loan contracts to remain viable in the long run, banks must be able to restrict the ability of borrowers to shift risk to the banks. Similarly, if deposit insurance is to remain viable, the government must restrict banks' ability to shift risk to the insurance agency and to the taxpayers. The best example of the perverse dynamics of risk-shifting coupled with financial deepening in the context of deposit insurance comes from the crisis in the U.S. savings and loan industry in the 1980s.

As a result of high interest rates paid to attract depositors during the late 1970s and early 1980s, the net worth of many savings and loan institutions in the United States deteriorated. The Federal Reserve Board originally responded to the problem by imposing interest rate ceilings on deposits, in effect taxing primarily small depositors to keep the savings and loans solvent. When the creation of new financial instruments, such as mutual funds, caused a flight of funds away from the savings and loans, Congress passed legislation to help the industry by deregulating its asset powers, permitting savings and loans to issue credit cards and to make consumer loans up to 30 percent of assets; to make commercial real estate loans up to 40 percent of assets; to offer commercial loans up to 11 percent of assets; and to take direct equity positions up to 3 percent of assets. State chartering authorities, especially in California, Florida, and Texas, provided even wider asset powers to thrifts in what appears to have been regulatory competition to keep thrifts from adopting national charters. During 1983 and 1984 the resulting asset growth of savings and loans (19 percent a year) far outstripped the asset growth of commercial banks (7 percent a year). Romer and Weingast (1990) argue that the fast-growing thrifts were gambling for resurrection and were able to do so because Congress forced the Federal Savings and Loan Insurance Corporation (FSLIC) to pursue a policy of forbearance that prevented the closure of undercapitalized savings and loans.

Although deregulation expanded bank lending, it also shifted excessive risk to the government. The government, for its part, failed to enforce capital standards and curtailed inspections of savings and loans during 1984–85. Although the formal safety net (the funds of the FSLIC) was modest, the informal safety net (the funds of the U.S. Treasury) was almost unlimited. Depositors were not worried about risk, and indeed, fast-growing thrifts only needed to offer small premiums on certificates of deposit to generate large deposit inflows.

The ex post safety net to protect depositors against loss involved shutting down more than 700 savings and loans with assets of \$400 billion. The Resolution Trust Corporation (RTC), which directly or indirectly employed up to 20,000 people during a three-year period, either liquidated the assets it acquired from failed thrifts or reorganized existing institutions. The cleanup operations of the RTC involved losses to taxpayers of approximately \$200 billion.

Prudential Regulation and Aggregate Economic Shocks

Much of the discussion on safety nets is based on the premise that bank-specific risk poses the major challenge for the design of bank capital, supervision, and closure mechanisms. Much of the risk faced by banks in Latin America and elsewhere, however, is aggregate rather than bank specific. Aggregate risk is observable by all agents in an economy: everyone knows when and by how much the price of copper or coffee changes or by how much the London interbank offer rate moves. Aggregate risk need not be borne by banks and other financial intermediaries. Indeed, being forced to bear it may interfere with intermediaries' incentives. Enforcing penalty loan rates on firms, changing ownership of the banks, or ordering the liquidation of assets may be a socially inefficient response to a negative aggregate shock. Such actions in the aftermath of an aggregate shock penalize competent owners and managers and may result in inferior utilization of an economy's assets.

The incentive problem posed by aggregate risk to the financial system is similar to that associated with government disaster relief programs. By providing insurance against catastrophes such as floods and hurricanes, the government offers homeowners an incentive to buy property in high-risk areas. To prevent this outcome, the government should implement tough rules that prevent homebuilders from building too close to the ocean or using construction materials that are too flimsy. Governments should similarly provide a safety net for the financial system in the event of a catastrophic shock to the economy. But the size of the bailout associated with the safety net will be affected by the government's ability to control excessive risk-taking in the years before a shock. It is in the good years before a shock occurs (like the calm years with no hurricanes) that government agencies should be given the incentives to strictly enforce conservative capital, monitoring, and closure policies.

Capital

Risk-adjusted capital requirements can play an important role in the design of a financial safety net *provided* that bank monitoring and closure policies are adequate. Without good monitoring, banks have an incentive to engage in accounting tricks that artificially raise the book value of their capital, such as the double-gearing discussed earlier. This technique increases the bank's capital for regulatory purposes without increasing the economic group's real capital.

Banks also have an incentive to underreport and underprovision bad loans. Adequate provisioning is crucial for the long-term viability of risk-adjusted capital requirements. Underprovisioning keeps the return to bank equity artificially high, and the cumulative excess flow of dividends destroys market value capital in a process that amounts to looting the bank. Looting of this sort is easy when an increase in the value of implicit or explicit deposit guarantees automatically offsets the decline in the value of the bank's capital.

Monitoring

Evaluating the true net worth of banks presents technical problems. For example, regulators must decide when loans that are current should be classified as doubtful. When the collateral value of the real estate securing a \$30 million mortgage falls from \$35 million to \$25 million, the loan may stay current for a while, but eventual default is almost inevitable. Regulatory enforcement is especially difficult when the fall in collateral is perceived to result from an external shock rather than from reckless lending practices. Given the possibility of disagreement over market values during a collapse in the real estate market, even market value accounting permits long delays in recognizing losses. A two-year delay in forcing the recognition of losses while the real estate market is adjusting downward, for example, can create the incentives and provide sufficient time for even good bankers to gamble away a bank's future by taking on excessive risk.

Closure Policy

Closure policy is the Achilles' heel of any explicit or implicit government safety net. The inability to close failing banks permits equity holders to roll over loan losses and engage in other risky lending practices, thereby bidding deposits away from other institutions and transmitting incentives for risky lending to the rest of the financial system. Just a few banks operating in this way during good times can weaken the whole system's ability to withstand a large aggregate shock.

Both technical and political reasons explain why closure policy is such a thorny issue for bank regulation. From a technical standpoint, bank liquidation generally is

undertaken only as a last resort to avoid the loss of the bank's value as an ongoing operation. In between forbearance and liquidation is a wide range of possibilities, including voluntary recapitalization by the bank's owners, cash-assisted acquisition by another bank, temporary administration by a government workout agency, and forced capital levies on depositors.

From a political standpoint, allowing a bank to fail not only will incur the wrath of uninsured lenders to the bank but also will run counter to the interests of politicians who depend on bank owners for political support. The problem is to create agreements before a bank failure that make it difficult afterward to renege on the no-bailout position. Because the impending failure of a large bank may disrupt the payments system, the various intervention options must be spelled out in some detail in advance to facilitate the bank resolution process without resort to a political rescue of the bank's owners. About one-fourth of the 1986 Chilean bank law, for example, is devoted to the precise specification of alternative closure and recapitalization mechanisms for banks.

A more subtle political problem involves interagency cooperation in bank interventions and closures. The banking regulatory agency has responsibility for determining whether intervention is called for; the deposit insurance agency must be willing to provide the necessary funds to resolve the insurance problem; and the central bank must provide liquidity while the intervention is resolved. Lack of cooperation by any one of these agencies can derail the closure or recapitalization process. Underfunding the deposit insurance agency, for example, may cause that agency to push for the delay of a bank intervention that would deplete the agency's funds. One possible solution is to create a truly independent central bank that would have the incentive to be tough on banks and the deposit insurance agency in order to guard its capital. This also implies, of course, that the central bank may be unwilling to provide emergency liquidity if it cannot be assured that it will recover those funds eventually.

When to Overrule Prudential Regulators

Various institutional arrangements for prudential regulation do tolerably well in preventing the shifting of risk to the government during normal times. Several writers, including Benston and others (1986) and Calomiris (1997), have advocated the use of subordinated debt requirements to counter the incentive to underprovision bad loans. Subordinated debt creates creditors who can put additional pressure on bank owners and managers to take adequate measures to cover such loans. The big problems arise in the aftermath of a negative aggregate shock when borrowers' debts become impossible to service and banks' capital and reserves become inadequate to cover probable losses. In all these cases it is unlikely that subordinated debt will

prevent bank owners and managers from increasing the bank's risk, since subordinated debt holders may have been wiped out along with the shareholders, with both groups willing to gamble by having the bank take on more risk.

In virtually any small economy, a negative macroeconomic shock will overwhelm a well-designed safety net. Imposing penalty interest rates and shutting down banks, which is the correct course of action given the incentives of bank regulators, will in fact be counterproductive. Chile's decision in the early 1930s to stand by the gold standard and to enforce prudential bank regulation eventually resulted in a military coup.

Regulators should be given strong incentives to control risky behavior that could cause an expensive bailout when a shock occurs. But government, too, has an incentive to avert a crisis by assuming the remaining macroeconomic risk borne by banks. There are several ways to do this: one is for the government to self-insure by accumulating a large fund of liquid resources. Another is to secure international lines of credit; Argentina followed this approach. A third is to rescue the banks using government debt but to require repayment (over many years, if necessary) if a bank wishes to expand into new areas. This was Chile's solution in the 1980s and 1990s.

Authorities must take into account the costs of establishing prudential regulation and safety net institutions that are immune to political pressures. Although these regulations and institutions minimize the private sector's incentives to take risks in good years, they may prove too rigid when a macroeconomic shock hits. If no one in the government can overrule the central bank, and the central bank is intent on enforcing prudential regulations and on guarding its capital, it may take a revolution (such as occurred in Chile in 1932) to put a more extensive safety net in place. Conservative prudential regulation and enforcing agencies therefore should be insulated from political pressure, but not so much that true economic catastrophes are made worse by the actions of those agencies.

Because catastrophes such as the Great Depression and the 1980s depression in Latin America are rare events, one may question whether it is worth preparing for them. Perhaps it is enough to put strong prudential regulations and safety nets into place that control moral hazard during normal times. However, the costs associated with not knowing when to relax prudential standards or how to implement rescue packages are quite large (Caprio and Klingebiel 1996)—although few studies have explored the actual transitions from standard prudential regulation to the ex post safety nets generally associated with financial crises.

Conclusion

Safety nets are the result of a government decision to assume risk that otherwise would be borne by depositors and shareholders. Society often benefits from the ex-

pansion of banks and bank lending associated with this protection, but excessive financial expansion can take place if the government does not limit the amount of risk it assumes (either explicitly or implicitly). The threat of macroeconomic shocks makes design of prudential regulation difficult in small economies. Because governments generally assume responsibility for some macroeconomic risk, the private sector may be implicitly encouraged to undertake activities that are especially exposed to such risks. These considerations work in the direction of a tough regulatory framework, but a lack of flexibility may worsen the economy's response to an especially severe macroeconomic shock.

For most small, open economies, a desirable level of financial activity would be impossible without some assurance of government guarantees to depositors and banks. Financial deepening often accompanies strengthened guarantees. These government guarantees shift risk toward the government and imply that at some point the government may need to throw out a safety net that involves government resources. Wise governments in these small economies will create strong supervision to limit the size of the safety net but will also recognize the value of encouraging financial deepening to promote domestic lending and economic growth.

Notes

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1. The Caja was authorized to lend up to 50 percent of the assessed value of the real estate and was given legal precedence in the collection of its loans. In exchange for the mortgages, the Caja issued letters of credit with maturities of 21–25 years and coupon rates of 5–8 percent. Borrowers could then sell the letters on the secondary market for cash. Landholders who sold the letters on the secondary market received a higher price than without Caja backing because purchasers demanded a smaller insurance premium, knowing that the Caja, via its capital and reserves, was the primary insurer of the mortgages.

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