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Seven Ways to Deal with a Financial Crisis: Cross-Country Experience and Policy Implications¹

by Charles W. Calomiris, Columbia University, Daniela Klingebiel, World Bank, and Luc Laeven, International Monetary Fund

Systemic financial crises are an extreme form of financial collapse—one that results in vast destructions of wealth that in turn cripple financial systems and magnify economic decline. Especially in emerging market countries that rely on hard currency foreign borrowing and operate managed exchange rate regimes, slowdowns in economic activity that begin as normal recessions become more pronounced as losses lead to large exchange rate movements and the destruction of the net worth of borrowers and banks. And in developed and developing countries alike, sharp declines in banks' net worth often lead to a wave of bank failures and a severe reduction of the banking system's ability to supply loans (especially to small and medium-sized enterprises), further depressing economic activity. Making things still worse, such events are also likely to limit banks' ability to restructure assets and work out non-performing loans, especially since this may require banks to recognize further losses, which could trigger further adverse market and regulatory reactions.

Under such circumstances, the goal of government policymakers and market participants is to help bring about an efficient financial restructuring process—one that aims to preserve or, if necessary, restore the creditor-debtor relationships on which economies depend for the efficient allocation of credit and other forms of capital. More specifically, the challenge for policymakers is to come up with (possibly temporary) programs that encourage creditors and debtors to reach agreement on workouts, rebuild balance sheets, transfer ownership of companies or banks to stronger hands, and attract new suppliers of credit to the market.

With at least some of these ends in mind, governments in the past have responded to financial crises by trying a number of different ways to restore the financial health of their banks and restructure the balance sheets of their borrowers. In this article—which is an updated version of a much longer paper we published in 2005²—we provide a taxonomy of seven different kinds of crisis resolution mechanisms that governments around the world have used, with varying degrees of

success, for at least the last 200 years. In so doing, we examine the benefits and costs of each mechanism, while considering the institutional prerequisites for their successful application.

In looking for the best tools, one must always keep in mind the tradeoff between the direct costs to taxpayers of the financial assistance to banks and their borrowers and the indirect costs, including misallocations of capital and incentives for banks and companies to abuse government protection. Once the crisis is past, those distortions are likely to turn out to be obstacles to efficient capital allocation and effective risk management. For example, although debt forgiveness has proved to be an effective restructuring tool under certain circumstances, repeated use of it can have the effect of crippling credit markets. And as we argue below, a country's ability to limit the moral hazard that could result from the use of such a policy will depend upon the strength of its institutions.

In the pages that follow, we use a case study approach to assess the cost-effectiveness of the seven different categories of policy tools, examining both their direct costs in the near term and their likely effects on future behavior. We find that most countries use some combination of market-based mechanisms and government-managed programs when restructuring their financial and corporate sectors. Market-based strategies are generally designed to strengthen the capital base of financial institutions or their borrowers to encourage them to renegotiate debt and resume new credit supply. Government-led restructuring strategies, by contrast, typically encourage the sale of domestic financial institutions to foreign ones, or transfer non-performing loans to new entities (known as asset management companies, or AMC's).

In principle, market-based mechanisms are likely to bring about recovery from massive debtor and creditor insolvencies at acceptable costs *only* if those mechanisms are sufficiently selective—that is, only if they focus taxpayer resources on those borrowers and banks that, with temporary assistance, are capable of sustaining themselves in the future. But to be successful, such market mechanisms depend on an efficient

1. This article is a shortened and updated version of Charles Calomiris, Daniela Klingebiel, and Luc Laeven, "A Taxonomy of Financial Crisis Restructuring Mechanisms: Cross-Country Experience and Policy Implications," which appeared in *Systemic Financial Crises: Containment and Resolution*, edited by Patrick Honohan and Luc Laeven. Copyright © 2005 The International Bank for Reconstruction and Development.

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2. See the preceding footnote.

judicial system, credible supervisory frameworks, enforcement capability, and uncorrupt implementation. And government-managed programs that transfer assets to government-owned asset management companies also depend on effective legal, regulatory, and political institutions. When legal and political institutions are weak, asset management companies are less likely to succeed in reducing the “overhang” of debt at reasonable cost. And the financial assistance rules that guide such AMC’s must be designed with incentive problems in mind to avoid aggravating moral hazard problems.

As a general rule, then, policymakers in emerging market economies with weak institutions should not expect to achieve the same level of success in financial restructuring as other countries and they should design resolution mechanisms accordingly. Despite the apparent superiority of some complex market-based mechanisms, we identify circumstances where simpler resolution mechanisms—such as across-the-board debt forgiveness accomplished through debt redenomination—that resolve outstanding debts quickly and offer little discretion to government officials are likely to be most effective.

The Policy Context

Policy responses to crises naturally fall into two categories: the immediate reactions in the heat of a crisis that cannot rely on new institutions or complex new mechanisms; and the longer-term responses after the crisis, including possible changes in the legal, regulatory, and institutional framework. Common immediate policy responses include various kinds of debt moratoria—forms of debt suspension or forgiveness that have a history in the U.S. that dates back to the early 19th century—as well as, and often in combination with, direct central bank or government lending to financial institutions or borrowers. But another typical immediate response to crisis is regulatory “forbearance.” When faced with a credit contraction, regulators often relax banks’ capital requirements to allow them to lend to their customers more easily. In such cases, regulators permit banks to understate their problem loans or other losses, and thus overstate their equity capital.

Forbearance is a more recent policy tool than debt moratoria or government lending because it requires a relatively recent feature of financial systems—namely, credible government protection of bank depositors. In the absence of explicit or implicit government backing, depositors concerned about bank solvency would withdraw funds from banks regardless of government regulatory policy. Under such circumstances, decisions by the government to relax capital standards would have little effect on banks; the real constraints on bank behavior in such a case would be private market discipline and market-determined minimum capital requirements. Banks suffering severe losses tend to experience not only rising costs, but also liability rationing, either because they have to delever to satisfy their regulatory

equity capital requirements, or because worried depositors at risk of loss withdraw their funds. In either event, banks are likely to restrict credit (or raise their price) to their borrowers, making the financial distress of both borrowers and banks more likely.

In theory, then, all three emergency actions—debt moratoria, government loans, and forbearance—have the potential to alleviate bank distress and the contraction of credit. In the case of a moratorium on bank debt collection, for example, even the banks themselves could benefit if the moratorium enabled banks and their borrowers to avoid fire-sale losses that could result from asset liquidation. But in many cases, debt moratoria that help borrowers end up hurting banks and reducing the future supply of loans, as happened in Mexico during the late 1990s.

In sum, the longer-term consequences of debt forgiveness for credit supply depend on the way it is done; it can either help both banks and borrowers or it can hurt banks and future borrowers while helping some of today’s borrowers. Unless a debt collection moratorium for borrowers is combined with other measures that assist banks (such as loans, forbearance, or deposit suspension), debt forgiveness will weaken banks further and limit the supply of new credit. Government assistance to distressed banks can enable banks to fund themselves and continue supplying credit to borrowers.

Although depositors may benefit from government guarantees, it is important to recognize that depositors are also taxpayers. And despite the theoretical advantages of bank assistance, history provides ample cases in which such assistance has proven to be wasteful and even counterproductive. Banks have often used such forbearance to take unproductive risks at government expense, resulting in even greater losses. In many cases, forbearance has led to further reductions in the net worth of banks, crippling tax burdens to pay for bank bailouts, and even more severe credit contractions and economic decline.

Financial collapse can also undermine creditors’ legal rights, which in turn can weaken the banking system. In extreme circumstances, when most borrowers and banks are insolvent, the legal rules governing banks and borrowers—or the enforcement of those rules—can change suddenly. And in the case of emerging markets, legal systems tend to have weak enforcement of creditors’ rights even during the best of times. For example, after the Mexican crisis of 1995, few Mexican debtors paid their creditors, and the courts were not inclined to assist creditors in forcing payment. In this environment, banks were not repaid and borrowers continued operating for years with little certainty about their ultimate debt obligations. During the Asian crisis of the late 1990s, a number of Asian countries also saw their courts unwilling to enforce bankruptcy laws that protected creditors’ interests.

The Taxonomy of Long-Run Crisis Restructuring Mechanisms

We now use a series of case studies to analyze the following seven types of long-run restructuring mechanisms:

1. Regulatory forbearance;
2. Tax incentives for write-offs of loan losses;
3. Conditional government-subsidized workouts;
4. Across-the-board debt forgiveness;
5. Establishment of government-owned asset management companies;
6. Government-assisted sales of financial institutions; and
7. Government-assisted recapitalization.

Almost all other resolution mechanisms are really just modifications of one of the above seven types. For example, outright nationalization of banks is simply an extreme case of a government-assisted recapitalization of financial institutions.

Forbearance: A Failed Approach to the U.S. S&L Crisis

Forbearance from strict enforcement of prudential regulations allows financial institutions to delay recognizing loan losses (or capital shortfalls) to give them time to recapitalize through asset sales or current earnings. Although usually adopted during the heat of a crisis, forbearance often continues to be part of the long-run resolution strategy, in part because reversing forbearance is difficult once banks have become massively insolvent. In fact, few governments *choose* forbearance as a long-run resolution tool; instead they typically stumble into it as the result of exigencies and lack of acceptable alternatives. As discussed below, the U.S. savings and loan (S&L) industry during the 1980s is an example of a system that operated under an extended forbearance policy.

The Federal Home Loan Bank Board regulated federally chartered thrift institutions in the 1970s. Unlike other U.S. banks, American “thrifts” were effectively forced by regulation to engage in a colossal maturity mismatch. They owned 30-year fixed-rate mortgages as their primary assets and funded themselves with savings deposits that could be withdrawn at any time. Rising inflation in the 1970s and the surge in interest rates after 1979 caused the market value of thrifts to drop sharply during the years 1979-1982. By 1982, many thrifts were insolvent on a tangible capital basis.

The initial government reaction to the debacle was to permit thrifts to engage in a broader range of activities, including the purchase of junk bonds and derivatives, and to change accounting practices to allow insolvent thrifts to be

treated as if they were still solvent. With government deposit insurance allowing them to raise funds on the brokered CD market, insolvent but deregulated thrifts were now able to invest in risky assets.

This policy reflected two incentive problems faced by the U.S. government itself. First is the problem known as “regulatory capture.” The Federal Home Loan Bank Board existed only to regulate the thrift industry, which had been losing market share to other lenders for a quarter of a century. Thrifts and their regulator alike were fighting for the survival of “their” industry and jobs. Second, neither Congress nor the Administration had much greater incentive than the FHLBB to force thrifts to recognize enormous losses because of the political consequences of the massive costs that would be borne by the Federal Savings and Loan Insurance Corporation (FSLIC).

Forbearance in the form of phony accounting, combined with the deregulation of thrift powers and wide license to invest in risky assets, were supposed to give insolvent thrifts the time and flexibility they needed to rebuild their net worth. The problem, however, is that deposit insurance acts like a put option for insured institutions—an option whose value rises with increases in both the asset risk and financial risk (or threat of insolvency) of the thrift. While this option value was insignificant for well-capitalized thrifts, it was very valuable for insolvent ones with little to lose. Such banks faced strong incentives to “bet on resurrection” and increase their own risk, giving rise to the well-known moral hazard problem of deposit insurance.³

As estimated thrift losses increased sharply (and reached \$200 billion) in 1988, so did the potential backlash against thrifts and their regulator. By 1988, political opinion had shifted toward the need for loss recognition and institutional reform; forbearance was out, regulatory discipline was in. The Federal Home Loan Bank Board was abolished and replaced by the Office of Thrift Supervision (OTS), which soon became the most aggressive enforcer of loan loss recognition in U.S. history. The OTS, FSLIC, and Resolution Trust Corporation all moved quickly and in concert to force thrifts to recognize losses, shut down insolvent ones, and sell their assets. What ensued was one of the fastest processes of *en masse* real estate asset liquidation that has ever occurred.

Lessons from the Case Study

As the above account shows, forbearance did not improve S&Ls’ balance sheets, but instead encouraged gambling for resurrection and even greater loan losses. Weakly capitalized banks had neither the incentive nor the ability to raise enough

3. Using the Merton model, Elijah Brewer III found strong evidence for the view that the combination of forbearance and deposit insurance encouraged thrifts to increase their risk, and ultimately their average losses, substantially. See “The Impact of the Current Deposit Insurance System on S&L Shareholders’ Risk/Return Tradeoffs,” *Journal of Financial Services Research* 9, 1995.

capital to restructure meaningfully during the forbearance period. Forbearance encouraged thrifts to pretend that they were healthy while they tried to bet their way out of their illness.

The U.S. thrift case shows that forbearance by itself cannot effectively resolve system-wide bank problems.⁴ Because deeply insolvent institutions exploit forbearance *cum* deposit insurance disproportionately at great cost to taxpayers, forbearance is a very wasteful way to rebuild the financial system. A better solution is the timely recognition of losses and the rebuilding of bank capital *selectively* in the strongest banks, which can be accomplished at far lower cost to taxpayers while achieving more efficient credit allocation in the future.

Tax Incentives for Loan Loss Write-Offs: Japan's Initial Approach to its Bank Crisis in the 1990s

One alternative to forbearance encourages financial institutions to restructure debts quickly by granting tax deductions for loan write-offs. This approach is market-based and decentralized in the sense that it leaves the actual restructuring of troubled loans to banks and corporations. Japan in the early 1990s offers such a case.

The Japanese banking crisis of the 1990s was not a sudden event, but rather a prolonged, steady deterioration in the health of Japan's financial system. It resulted from inadequate disclosure of the true financial condition of financial institutions and a slow government response. Japanese banks had many nonperforming loans, mainly in the construction and real estate sectors.

When this became clear in 1992, the Credit Cooperative Purchasing Company (CCPC) was set up to acquire bad real estate loans from Japanese banks. The government tried to make loan write-offs more attractive to banks by allowing them to deduct anticipated loan losses (write-offs) from taxable income. (Before this, the deductibility of loan losses depended upon beginning an actual bankruptcy procedure against the borrower.) Almost all Japanese banks took advantage of these tax incentives and transferred troubled loans to the CCPC.⁵

But despite the apparent success of the CCPC program in transferring large amounts of bad loans, the main problem was not attacked. Bad loans continued to rise as new non-performing loans replaced those that were previously written down, and the condition of financial institutions continued to deteriorate. Banks were reluctant to recognize

the full extent of their loan losses because that would have reduced their book capital and because government deposit insurance enabled them to keep operating.

Furthermore, the historical absence of liquidation procedures and the limited capacity of the bankruptcy court system in Japan made orderly liquidation even more challenging.⁶ Financial institutions lacked incentives to restructure corporate debts as long as they were allowed to hide their losses and operate with a weak capital base. At the same time, government guarantees of *all* bank deposits created moral hazard for banks and their borrowers. Compounding these problems, the Japanese *keiretsu* system—in which Japanese banks owned substantial equity in affiliated companies—further undermined market discipline and incentives to attack the mounting bad debt problem. Instead they encouraged banks to use government subsidization of losses largely as a means to help their related enterprises stay afloat.

Lessons from the Case Study

Speedy loan loss recognition encourages financial institutions to strengthen their equity capital positions, reinforces the credibility of accounting rules and capital regulation, and discourages banks from undertaking high-risk resurrection strategies. Credible regulation and accounting rules also facilitate the rebuilding of equity by making the financial statements of banks more reliable to potential investors. Although loan loss write-offs do not directly increase lending capacity, a clean up of banks' balance sheets is generally a first step to restarting sound corporate lending.

But there are costs associated with subsidizing the write-offs of loan losses. By not imposing the full costs of bad decisions on corporate borrowers and bank shareholders, such subsidies reinforce incentives for imprudent behavior. As in the case of forbearance, a blanket subsidy for *all* bank loans can create an adverse selection problem because the amount of the subsidy is likely to be inversely related to the soundness of the financial institution or borrower receiving it. This results in both the wrong incentives and the waste of taxpayer resources that might be better channeled to support the selective rebuilding of the balance sheets of the best banks and customers. What's more, the adverse selection problem was particularly bad in Japan during the mid-1990s because banks faced little incentive to write off *all* their bad loans, but instead used the write-offs subsidies mainly to rescue related corporate borrowers.

In sum, the Japanese experience of the mid-1990s is representative of how forbearance fails to provide banks

4. See Charles W. Calomiris, "Deposit Insurance: Lessons from the Record," Federal Reserve Bank of Chicago *Economic Perspectives*, May/June 1989; and Armen Hovakimian, Edward J. Kane, and Luc Laeven, "How Country and Safety-Net Characteristics Affect Bank Risk-Shifting," *Journal of Financial Services Research* 23, June 2003.

5. See Frank Packer, "The Disposal of Bad Loans in Japan: The Case of the CCPC," in *Crisis and Change in the Japanese Financial System* (edited by T. Hoshi and H. Patrick), Kluwer Academic Publishers, 2000.

6. See Frank Packer and Marc Ryser, "The Governance of Failure: An Anatomy of Corporate Bankruptcy in Japan," Center on Japanese Economy and Business Working Paper No. 62, Columbia University, 1992.

with effective incentives to restructure bad loan portfolios, and also of how principal-agent problems in asset resolution are exacerbated in a system where banks and their borrowers have ownership links, and where the government issues a blanket guarantee on all deposits. In addition to these problems, the Japanese approach was doomed by the reality that loan loss write-offs alone were unlikely to be sufficient to cover the capital shortfall experienced by the banks. For loan loss write-offs to be an effective resolution mechanism, they must be combined with other tools that help ensure that banks will make proper use of government assistance, including (1) a credible supervisory authority with sufficient enforcement capacity to encourage financial institutions to recognize losses and engage in corporate restructuring; (2) an efficient bankruptcy system to solve coordination problems between debtors and creditors; and (3) a high-quality accounting framework that makes it hard for banks to mask non-performing loans. In Japan, all of these elements were missing—and banks understandably delayed recognition of losses and simply hoped for a reversal of fortune.

Conditional Taxpayer Sharing of Loan Losses: Mexico's Punto Final Program

The third resolution approach is also a decentralized, market-based one. It is a workout program for non-performing loans in which the government shares directly in the lender's loan losses, but requires as a condition for the government subsidies that bank borrowers contribute to loan resolution as well. The Punto Final Program in Mexico in the late 1990s is a reasonably successful example.

The Mexican government, after implementing a large-scale asset purchase program in the early 1990s (called the Fund for the Protection of Bank Savings, or FOBAPROA) that failed to reduce past-due loans and provide debtor relief, launched its Punto Final program in December 1998. The aim of the program was to provide debt relief to three different sectors: individual mortgage holders, agribusinesses (mainly farms and fisheries), and small and medium-sized enterprises (SMEs). The program offered large subsidies (worth up to 60% of the book value of the loan) to bank debtors to encourage them to pay back their loans. The amount of subsidies depended upon the sector, the amount of the loan, and on whether the bank resumed lending to the sector. Although the government also offered some help in repaying large loans, its main focus was on smaller borrowers: For every three pesos of new loans extended by a bank to individuals and small and medium-sized enterprises, the government offered to provide an additional peso.⁷

The Punto Final program was more effective than its predecessor for four reasons. First, loss sharing was geared to small loans. Assistance to small borrowers improves economic competition; and, of critical importance in most developing economies, the flow of subsidies was less likely to be distorted by political influence. Second, the loss-sharing arrangement provided an incentive for banks to restart lending to SMEs and individuals by linking the amount of government assistance to the amount of new lending. Third, the program almost certainly made more effective use of taxpayers' resources by relying on borrowers' willingness to pay part of their outstanding loans. The resulting borrower self-selection not only reduced the expected number of participating borrowers, but also raised the odds that those who participated were "worth helping"—that is, economically viable and, with the help of the effective debt reduction, able to contribute to the economy in the future. By contrast, the earlier asset purchase program (FOBAPROA) was not selective and greatly benefited large borrowers at what turned out to be a very high cost to taxpayers. Fourth, the Punto Final program quickly resolved uncertainty about how much of borrowers' preexisting debts would be repaid, making it easier to analyze the balance sheets of both borrowers and banks, and thereby making credit more available to creditworthy firms.

Despite these potentially attractive features, the Punto Final program may not have been a completely successful restructuring model. Despite the advantages of selectivity, it might have been better to extend the program to more firms and individuals. Furthermore, the effectiveness of the program was plagued by institutional weaknesses. It lacked a credible supervisory authority with power sufficient to make financial institutions recognize losses and restructure debts and an efficient bankruptcy system to encourage borrowers to work out loans voluntarily. And, finally, it suffered to some degree from politically connected lending.

Nevertheless, the banking system clearly improved in terms of asset quality, profitability, and capital adequacy during the period 1997-2000. But that being said, it is hard to assess the efficacy of the Punto Final program because it was also preceded by, and coincided with, numerous other financial support and debtor relief programs. There were also other positive developments in Mexico—growth, increased banking income, and foreign entry into banking—that improved the condition of banks and the supply of credit during this period. What's more, despite the success of the Punto Final program and these other developments, bank lending in Mexico did not restart as expected. Bank credit to the private sector contracted from about 19% of GDP at the end of 1998 to 10% of GDP at the end of 2000. Banks

7. See "Mexico: Report on Proposed Second Bank Restructuring Facility Adjustment Loan," World Bank, 2001.

faced difficulty repossessing collateral and getting fair treatment in bankruptcy. The ratio of repossessed collateral to total loans excluding FOBAPROA increased only slightly from 1.5% in 1997 to 1.7% in 2000. Since then, Mexico has improved its bankruptcy framework and asset resolution process significantly, and collateral repossession has become easier.

Lessons from the Case Study

The conditional sharing of loan losses can help bring about the recognition of loan losses by banks, can clean up borrowers' and banks' balance sheets, and can indirectly improve the capital base of financial institutions by encouraging loan repayment. Also, because banks share the loan losses, it gives them incentive to engage in effective corporate restructuring. Self selection into conditional programs like Punto Final directs taxpayer resources to borrowers that are worth saving. And by linking assistance to new bank lending, the Punto Final program was more effective in restarting the credit supply process than across-the-board writedowns would have been. Finally, because borrowers had to contribute to the costs of financial subsidies, the future adverse incentive effects are likely to have been significantly less than in the case of unconditional subsidies.

But for all its successes, the Punto Final model has three major limitations that are especially relevant to emerging markets. First, success depends on the efficiency of the legal system. Borrowers' incentives to participate depend both on the stick of enforcement of creditors' rights and the carrot of future credit supply—which in turn depend on the existence and strength of creditors' rights. Punto Final coincided with a complete reform of the Mexican bankruptcy process and laws for perfecting collateral interests. When Punto Final was being implemented, both borrowers and lenders had reason to believe that creditors' rights would be stronger in the future.

Second, to the extent that selectivity creates the potential for corruption in allocating subsidies, selectivity is less desirable, especially in developing economies with weak institutional structures.

Third, if large-scale restructuring of the financial system is a goal, the microeconomic advantages of selectivity must be traded off against the macroeconomic advantages of large-scale improvements in corporate debt capacity and bank net worth. To have been more effective, the Punto Final program would have had to apply to more borrowers than just the SMEs.

Finally, we note that neither conditional subsidies nor across-the-board write down subsidies distinguish between well- and poorly-managed banks. Banks that made the worst lending decisions prior to the crisis received the most assistance after the crisis. Thus neither approach does much to

address the adverse-selection and moral-hazard problems of providing assistance to insolvent banks.

Debt Forgiveness: Two Examples Involving Government Abrogations of Debt Contracts

This approach—illustrated most recently by Argentina's 2002 debt redenomination program—combines legal innovations with the government's power to change the *numeraire* (e.g., what is a dollar?) and medium of exchange to change the value of debt obligations, and to thereby forgive part of them. The objective of debt forgiveness is to reduce the “debt overhang” problem and improve the ability and incentives of both banks and their borrowers to service their debt. Debt forgiveness results in an across-the-board restructuring of the corporate sector and banking system.

As examples of debt forgiveness programs, we consider the early examples of suspension of gold convertibility in the United States from December 1861 until January 1879, and the abrogation of the gold standard and gold payment clauses in debt contracts in the U.S. in the 1930s. Both cases involved substantial changes in laws and monetary arrangements, but no direct fiscal cost to the government.

The Legal Tender Bailout of Debtors and Banks During the U.S. Civil War

The U.S. Civil War began in March 1861 and massively increased the funds required by the Union government. A consortium of Eastern banks bought government debt securities in the fall of 1861 while planning to distribute them to investors. But the December 1861 Report of the Secretary of the Treasury shocked financial markets, including government debt markets, with its (realistic) view of coming war expenditures and the decision not to increase taxes significantly. Still holding a massive amount of the government debt, U.S. money center banks were suddenly exposed to the risk of insolvency and bank runs.

The government's immediate response was to suspend the convertibility of private bank notes and deposits into gold. The longer-term solution—which was adopted with the passage of the Legal Tender Act in February 1862 and was expected to last only as long as wartime finance depressed the value of government debts—was to change the *numeraire* of the economy from gold to fiat currency treasury notes, legal tender notes, or “greenbacks.” The Legal Tender Acts (others followed after 1862) allowed the government to pay for much of the war indefinitely by issuing paper currency.

This first American experiment with legal tender fiat currency proceeded in the face of Constitutional doubts about the government's legal right to issue such currency or to make it legal tender for settling private debts. But setting such doubts aside, by re-denominating bank debts into the

same depreciated *numeraire* as bank assets (government securities, greenbacks, etc.), the government succeeded in restoring the solvency of banks and averting a financial crisis.⁸ Although both creditors and depositors lost value in gold terms from the depreciation of their dollars, the fiat dollar had returned to roughly 80% of its prewar value by 1866. In the meantime, depositors and creditors avoided the massive losses they would have suffered from borrower bankruptcy and bank failures.

Some have questioned whether the Legal Tender Acts undermined the long-run credibility of the U.S. financial and legal system. Although the government continued to promise an eventual return to gold convertibility at the prewar parity, the Acts were not immediately reversed at the end of the Civil War in 1865. But the long-term costs of the bailout appear to have been negligible. The constitutionality of legal tender laws was upheld by the courts (thanks in part to President Grant's packing of the Supreme Court with legal tender advocates), thus making government-issued fiat currency a permanent component of the U.S. money supply. At the same time, however, it became clear over time that the Legal Tender Acts had been exceptional measures to deal with exceptional circumstances—and the long-run consequences of the devaluation appear to have been small. Gold convertibility resumed on January 1, 1879, with greenbacks converted back into gold at the prewar parity.

The Suspension of the Gold Standard and Abrogation of Gold Clauses in the United States

There is now widespread agreement that worldwide deflation under the gold standard propelled the world into deflation and Depression during the early 1930s. As the real value of their debts rose and their cash flows shrank, borrowers were unable to service fixed-debt obligations and became insolvent. Loan defaults and losses weakened banks and the financial system's ability to allocate funds properly.⁹

But President Roosevelt was not thinking about the effects of deflation on the banking system. He believed instead that raising commodity prices was itself crucial to economic recovery. In fact, both Presidents Hoover and Roosevelt subscribed to the (now discredited) view that any policies that kept wages and prices higher would lead to higher incomes. One such policy was devaluation of the dollar in terms of gold. Despite earlier assurances that he would not devalue the dollar, Roosevelt reversed course in May of 1933, and the dollar was devalued from \$20.67 per troy ounce to \$35.00.

But there was a hitch in the Administration's plan to

devalue the dollar to reflate incomes. Unlike the situation in 1861—and, indeed, *because* of the fiat money policy implemented in 1861—debt contracts written in the late 19th and early 20th centuries usually included “gold clauses.” These clauses obligated the borrower to make lenders whole in gold terms, even if the government had used its power to devalue the dollar in gold terms. U.S. courts consistently ruled that private parties could use gold clauses to avoid the risk of legal tender changes in the value of the dollar,¹⁰ and issuers and investors alike agreed to gold clauses to eliminate inflation as a risk component of interest. By the 1930s, virtually all long-term corporate debt contracts and many mortgages contained gold clauses.

The problem with Roosevelt's devaluation strategy was that devaluation would reduce the gold value of dollar-denominated *assets* but not the gold value of dollar-denominated *liabilities* (since gold clauses effectively put a floor under debt values). The result of this mismatch was the prospect of massive insolvencies. Accordingly, the Administration argued that the federal government had the constitutional right to ban transacting in gold and to abrogate existing gold clauses in private debt contracts.

On June 5, 1933, Congress passed a Joint Resolution declaring gold clauses unenforceable and “against public policy,” and allowing debt obligations with gold clauses to be paid at face value in dollars depreciated in gold terms. This abrogation of gold clauses amounted to a 41% reduction in the (gold) value of outstanding corporate debts. Legal battles raged until February 18, 1935, when the Supreme Court upheld the constitutionality of gold clause abrogation in a dramatic five-to-four decision.

In his study of the effects of this abrogation of the gold clause in U.S. debt contracts, University of Chicago economist and former Federal Reserve Board member Randall Kroszner found that average stock and bond prices actually went up when the decision was announced, and that the bonds of companies facing the highest probability of bankruptcy gained the most. His conclusion was that the gold clause abrogation increased the probability of repayment enough that the positive effect on value more than offset the bondholders' losses from the dollar devaluation. For bondholders, it turned out to be “better to forgive than to receive.”

This is persuasive evidence of the potential role of debt forgiveness as a means of solving coordination problems in renegotiating debt. Few individual creditors would have been willing voluntarily to remove gold clauses from the debts they

8. For discussions of how legal tender currency was consciously used to end the banking crisis, see Wesley C. Mitchell's *A History of the Greenbacks*, Chicago: University of Chicago Press, 1903 and Bray Hammond's *Sovereignty and an Empty Purse: Banks and Politics in the Civil War*, Princeton University Press, 1970.

9. Studies have shown that bank distress in the U.S. in the early 1930s was largely a consequence of loan loss problems, and not liquidity crises *per se*. See Charles W. Calomiris and Joseph R. Mason, “Fundamentals, Panics, and Bank Distress During the

Depression,” *American Economic Review* 93, December 2003, 1615-47; and “Consequences of Bank Distress During the Great Depression,” *American Economic Review* 93, June 2003, 937-47.

10. See Randall Kroszner, “Is It Better to Forgive than to Receive? Repudiation of the Gold Indexation Clause in Long-Term Debt During the Great Depression,” University of Chicago Working Paper, November 1999.

held; but when all of them were forced to do so collectively, both creditors and debtors were better off. Similarly, depositors' losses from the dollar devaluation in gold terms were offset to some extent by the lower risk of bank failure.

And to judge from events that followed it, the Supreme Court decision did not undermine investor confidence in the rule of law and monetary stability. Investors seemed to understand that the Court's decision had the effect of preserving value, especially when faced with the conditions of the Depression. Growth resumed between 1933 and the fall of 1937, bank failures declined, and the exchange rate and price level remained stable.

Lessons from the Case Studies

The U.S. government avoided direct fiscal costs in the 1861 and 1933 bailouts by using its legal powers. Of course, all bailouts are financed by someone. But while legally mandated reductions in the real value of debt come at some cost to debt holders and bank depositors, they may also be net beneficiaries if the policy increases the probability that they will be repaid. One must consider the substantial costs that depositors and taxpayers almost certainly would have borne without the bailout. In these cases, creditors and depositors bore relatively modest costs and, on balance, they may even have come out ahead.

These two cases illustrate three general advantages of across-the-board debt forgiveness: (1) effectiveness, (2) speed of action, and (3) simplicity in resolving corporate and banking sector problems. Debt forgiveness recognizes loan losses and provides immediate relief to borrowers. It can also encourage speedy rebuilding of bank balance sheets, although that also depends upon whether debt relief substantially improves the probability of loan repayment, whether both financial assets and liabilities are depreciated simultaneously (and proportionately), and whether the government or banks are willing and able to extend more credit after recognizing losses. What's more, the simplicity of debt forgiveness makes it far less dependent on the quality of legal and regulatory institutions than more complicated alternatives like AMC's or the Punto Final program.

One important disadvantage of debt forgiveness is that it can create incentives for poor risk management by borrowers and banks in the future because they avoid the full costs of poor decisions. If debt forgiveness is used only in extreme circumstances (like the Civil War or the Great Depression), the moral hazard consequences are likely to be limited. But if it becomes routine and expected, financial risk will increase.

Government-Owned Asset Management Company (AMC): The Case of Swedish Banks

Government-owned and -managed asset management companies (AMCs) have been set up to acquire non-performing assets in order to accelerate corporate restructuring and the recovery of the banking system. This is a centralized approach to corporate restructuring. Two successful examples of government-owned AMC's are Securum and Retrieva, which were created by the Swedish government in the early 1990s.¹¹

When Sweden liberalized financial regulations during the 1980s, expanded bank lending led to a boom in real estate.¹² From 1987 to 1990, total credit rose from 90% of GDP to 140%. Under fixed exchange rates, companies borrowed in foreign currency to take advantage of lower foreign interest rates. At the end of 1990, more than 50% of outstanding Swedish corporate debt was denominated in foreign currency.¹³

But starting in the late 1980s, tighter monetary policy, higher real interest rates, and reductions in the tax deductibility of interest expense on real estate investments all contributed to a sharp drop in property and share prices. Sweden then entered a deep recession, experiencing asset price deflation, very high interest rates (up to 500%), and a substantial depreciation of the Swedish krona (when it started to float in 1992).

By 1991, borrowers were having difficulty meeting debt obligations and loan losses were mounting. That fall, it was clear that two of the six major Sweden banks, Första Sparbanken and Nordbanken, needed to be recapitalized. The Swedish government, already the major owner of Nordbanken, increased its ownership to 77% of the outstanding shares. And the government guaranteed a loan to Första Sparbanken that enabled it to meet capital requirements.

In the spring of 1992, when it was evident that Nordbanken's problems were still serious, the state bought all the remaining outstanding shares. In November 1992, the state injected SEK 10 billion to cover probable loan losses and transferred most of Nordbanken's non-performing loans to an AMC called Securum. Securum took over mostly real estate-related assets with a book value of SEK 67 billion, and representing over 4% of total Swedish banking assets.

By September 1992, it was also apparent that Gota Bank's capital was inadequate, and the bank's largest shareholder, Trygg Hansa, refused to invest more funds. The government immediately provided guarantees to Gota's

11. For a review of AMC's in various countries, see Daniela Klingebiel, "The Use of Asset Management Companies in the Resolution of Banking Crises: Cross-Country Experience," World Bank Policy Research Paper 2284, 2000.

12. See Arne Berggren, "Events Leading to the Need of General Measures in a Bank Crisis: The Swedish Experience," August 1995.

13. See Burkhard Drees and Ceyla Pazarbasioglu, "The Nordic Banking Crisis: Pitfalls in Financial Liberalization" by Occasional Paper No. 161, International Monetary Fund, April 1998.

creditors and later extended such guarantees to all other Swedish banks. Nevertheless, Gota declared bankruptcy and the government took over the bank in December 1992 while announcing that it would be sold quickly. To facilitate the sale, the government also put Gota Bank's problem loans—mostly real estate related, and totaling SEK 43 billion—into an AMC called Retrievea, leaving the remaining entity to focus on normal banking business.

That same month, parliament passed the Bank Support Act, which gave the government the flexibility to provide loan guarantees and capital contributions, and to take other appropriate measures. The Act also formally confirmed the government guarantee of all bank liabilities. A new agency, the Bank Supervisory Authority, was created with the authority and discretion to manage and assist banks.

In 1993, Nordbanken and Gota bank were merged, and the surviving entity retained the name Nordbanken and became Sweden's fourth largest bank. The bank was operationally restructured and later sold to the private sector. The two AMCs—Securum and Retrievea—were merged in December 1995.

The main task of the AMCs was to maximize the remaining economic value of the loans transferred. In the first phase of their operations, they decided whether debtors should file for bankruptcy. In most cases, the AMCs did force debtors into bankruptcy and took over the collateral (usually real estate). As a result, at one point Securum owned 2,500 properties with an estimated market value of SEK 15-20 billion.¹⁴ Securum later sold its real estate assets through a combination of private sales to companies and individuals and public offerings on the Stockholm stock exchange. Most assets were sold in 1995 and 1996, when the real estate market had started to recover, but when prices were still low compared with the boom years. The good news, however, is that Securum wrapped up operations much faster than originally expected, and it was dissolved at the end of 1997.

But if Securum and Retrievea were successful in selling off their assets and recovering substantial amounts for the government, it's important to recognize that these AMCs had several advantages over those in some other countries. Most of the assets transferred were real estate-related, which are politically easier to restructure because they tend not to involve large lay-offs. Sweden also benefited from an unusually efficient judicial system with an effective foreclosure regime.¹⁵ It also helped that the AMCs had skilled management, adequate funding, and strong governance mechanisms that insured the agency's independence.

Lessons from the Case Study

The potential advantages of AMCs over market-based solutions include: (1) economies of scale in workouts (which require special skills) and in selling assets; (2) benefits from the granting of special government powers to expedite loan resolution; and (3) the interposition of a disinterested third party between bankers and clients to break "crony capitalist" connections. A mechanism for preventing crony capitalism is likely to be especially important in emerging markets, where ownership concentration and connections between industrial conglomerates and banks are often very close. (As discussed in the original version of this paper, the failure to provide such a mechanism almost certainly played a major role in the failure of a Mexican AMC called FOBAPROA during the mid 1990s.)

But there are a number of reasons why many other countries might not be expected to realize these advantages of the Swedish AMCs. First, government agents often lack the information and skills of private market participants. Second, government agencies are also creatures of the societies that create them and must negotiate rather than dictate solutions, just as private market participants must do. In any negotiation, one's strength depends on a "threat point"—a credible threat to the other side if agreement is not reached. When legal, regulatory, and political institutions are weak, government officials are in a weak negotiating position. Unless there are adverse consequences from doing so, companies and banks are likely not to cooperate. Even a well-meaning and competent AMC negotiator has little chance of being effective against a powerful business leader who can appeal to corrupt politicians or bureaucrats for protection. So, AMCs need strong institutional environments to achieve their objectives.

Third, AMC officials are likely to be less effective if subjected to political pressure to favor certain borrowers or avoid layoffs at large firms. AMCs in countries with weak institutions tend to be least effective when the assets being transferred are relatively large. Poorly structured incentives and large program size tend to magnify each other. (For example, Mexico's FOBAPROA program became increasingly ineffective as the lack of credible loss sharing on the downside encouraged excessive participation.)

Finally, by conferring enormous benefits to certain banks, companies, and individuals, AMCs create moral hazard. By virtue of their ability to decide the prices at which assets are transferred from banks to AMCs, the managers of AMCs create gains or losses for the banks. Assets transferred at a price above market value will result in a back-door bank recapitalization. Although AMCs do not directly impose losses on corporate borrowers, they have the potential to

14. See Peter Englund, "The Swedish Banking Crisis: Roots and Consequences," *Oxford Review of Economic Policy*, Vol. 15, No. 3 (1999) pp. 80-97.

15. See B. Espen Eckbo and Karin S. Thorburn, "Bankruptcy as an Auction Process: Lessons from Sweden," *Journal of Applied Corporate Finance*, Vol. 21, No. 3 (Summer 2009).

favor particular borrowers by not pressuring them to sell or helping cronies by paying too much for troubled loans from “connected” banks.

Government-Assisted Sale of Financial Institutions to Foreign Banks: The Case of Argentina

This is a government-based and centralized approach to bank restructuring in which governments facilitate the sale of domestic banks to strategic (typically foreign) investors. When pursuing such an approach, governments usually share loan losses to some extent and relax preexisting limits on what foreign banks may do. Because the actual restructuring of troubled companies is left to the market, it is a decentralized approach to *corporate* restructuring, despite involving some government assistance.

Foreign banks are large potential sources of new capital and are less likely than local (particularly state-owned) banks to waste that capital in value-destroying investments. Foreign banks also tend to enjoy a relatively low cost of capital since they have stronger balance sheets and their reputations afford them greater access to new capital.

Nevertheless, foreign entrants usually need time to learn about local borrowers and the country’s legal and institutional arrangements. Foreign new entrants into the U.S. in the 1980s tended to lend disproportionately to lower-risk borrowers, to purchase rather than originate loans, and to participate in but not lead loan syndicates.¹⁶ Furthermore, despite their conservatism, those foreign banks tended to suffer worse loan losses in the U.S. than domestic banks in the early 1990s, which also suggests an information cost disadvantage.

So, while lowering barriers to foreign entry is clearly a crucial part of ending a credit crunch and reforming lending practices, foreign banks may not be a perfect substitute for domestic ones—or at least not right away. The foreign entrants that succeed quickly seem able to acquire existing franchises and local staff along with the assets and real estate.

To gain perspectives on foreign bank entry into emerging markets, we consider the important case of Argentina during the 1990s. Argentina, like much of Latin America, suffered high inflation, economic decline, financial distress, and sovereign default during the 1980s. It embarked on a major financial and economic liberalization program in the

early 1990s that aimed to end hyperinflation (by committing to convert pesos to dollars at a fixed rate), privatize state-owned enterprises (including banks), deregulate the financial system, abolish deposit insurance, and deregulate foreign capital flows. All of these policy changes were attractive to foreign banks, and the backward Argentine market offered both growth opportunities and potential gains from improving operating efficiency.

Foreign banks participated from the beginning in the recovery of the financial sector. Total credit to the private sector rose from 10% of GDP in 1990 to 19% of GDP as early as 1994. By the end of 1994, foreign lenders accounted for over 25% of personal loans in Argentina, as well as over 10% of mortgages and almost 20% of commercial loans.¹⁷ And when the Mexican “tequila” crisis hit Argentina in 1995, foreign banks assumed an even greater role since they had lower-risk loan portfolios and sources of capital outside the region. These strengths enabled them to expand their loan portfolios and to acquire weak local institutions.

In short, the foreign banks viewed the Mexican crisis as a short-term problem for Argentina and therefore an opportunity for expansion. By 1999, the foreign-owned bank share in personal lending had grown to 46%, the share of mortgage lending stood at 32%, and the commercial lending share was 53%.¹⁸ There were many foreign bank entrants representing several countries. Joining established foreign banks such as Citibank, ABN Amro, and Lloyds, the new entrants included Banco Santander, Banco Bilbao Vizcaya, HSBC, Bank of Nova Scotia, Bank of Austria, Caisse Nationale de Credit Agricole, Chile’s Abinsa and O’Higgins banks, and Brazil’s Banco Itau. Foreign banks also used large acquisitions to increase market share quickly.¹⁹

The foreign banks concentrated initially in the capital city, where they made almost 90% of their loans in 1997, as compared to only about 40% for private Argentine banks. But after 1995, foreign bank credit grew rapidly in provinces that had privatized their public banks after 1995.²⁰ Foreign banks also provided credit to sectors that domestic banks had neglected. In particular, manufacturing companies accounted for almost 30% of the foreign banks’ loans, as compared to only 13% for private domestic banks. What’s more, foreign banks did not appear to take more credit risk than domestic banks. During the period 1997-1998, non-performing loans were just 9.7% of total loans, on average, for foreign retail banks, and 8.0% for foreign wholesale banks. Private domes-

16. See Charles W. Calomiris and Mark S. Carey, “Loan Market Competition Between Foreign and Domestic Banks: Some Facts About Loans and Borrowers,” Proceedings of the 30th Annual Conference on Bank Structure and Competition, Federal Reserve Bank of Chicago, 331-51, 1994.

17. See Gerard B. Dages, Linda Goldberg, and Daniel Kinney, “Foreign and Domestic Bank Participation in Emerging Markets: Lessons from Mexico and Argentina,” *Federal Reserve Bank of New York Economic Policy Review*, September, 17-36, 2000.

18. *Ibid.*

19. See Robert Cull, “Structural Change: Internationalization, Consolidation, and Privatization in Argentina’s Banking Sector,” World Bank, 1998.

20. See World Bank, 1998, “Argentina: Financial Sector Review,” Report No. 17864-AR, September.

tic retail banks had average non-performing loan (NPL) ratios that were comparable to those of foreign banks (9%), but higher median NPL ratios. And the average NPL ratio for private domestic wholesale banks was a considerably higher 19.4%.²¹

In sum, foreign banks were providing a large, increasingly diverse and sophisticated, and growing supply of credit to the Argentine economy. Foreign bank acquirers also spurred the privatization of distressed public Argentine banks. From 1995 to 1999, 15 such banks were privatized. But perhaps most important, foreign banks contributed to the stability of the Argentine economy in the late 1990s by supplying credit immediately in response to the tequila shock. During the peak of the crisis (from Q4 1994 to Q4 1995), foreign bank lending grew at a 12% annual rate, faster than for private domestic banks. And from the end of 1995 through 1999, foreign banks' loans grew more than 22% per year, also considerably higher than the loan growth of domestic private banks.²² Moreover, without such robust lending by foreign banks, regulatory discipline would have had to restrict lending by local banks to protect local depositors, which in turn would have created political difficulties.

The bad news, however, is that changes in government policy after 2000 caused foreign banks to retreat from Argentina. On top of loan losses caused by the recession, the banks incurred large losses on the government securities they had been pressured by the government to buy when Argentina defaulted on its debts. They suffered yet more losses when the government later imposed "pesification" of bank assets and liabilities. Beginning in late 2001 some foreign banks began to exit. Refusing to invest more capital in its Argentine subsidiary, Scotiabank simply abandoned Scotiabank Quilmes, writing off C\$ 540 million. Credit Agricole also abandoned its subsidiaries in 2002.

Lessons from the Case Study

The experiences of Argentina, Mexico, and many other developing countries in the 1990s cast a very favorable light on the role that foreign banks can play in resolving the distress of domestic banks. Government-assisted sales of banks to foreigners can be a cost-effective way to restore bank capital and proper lending incentives. Foreign banks' access to capital and willingness to invest in long-term relationships allow them to compete very effectively for loans. Unlike the experience of foreign bank entrants into the U.S. in the 1980s, in Argentina, Mexico, and elsewhere, foreign banks entered virtually all niches of the banking market. The foreigners may have had greater success in these cases because they entered

more through acquisition and because existing domestic banks were in distress.

And, despite local misgivings about their degree of "commitment," foreign banks did not flee from Argentina (or Mexico) during the major crisis of 1995, but instead redoubled their investments, seeing the crises as opportunities to expand. Not surprisingly, however, some foreign banks gave up on Argentina in 2002, but only because government actions had rendered them deeply insolvent. In fact, the more common effect of foreign bank participation is to improve the political economy of bank regulation. Not only do foreign banks directly impose competitive pressure on domestic banks, they make it more likely that bank supervisors and regulators will end forbearance, enforce bank regulations, and encourage further competition.

Government-Assisted Recapitalization: the U.S. RFC in the 1930s vs. Japanese Banks in the 1990s

Although government assistance plays a major role in it, government-assisted recapitalization is a decentralized restructuring approach in the sense that the actual corporate restructuring decisions are left to the market. We consider two examples: the U.S. Reconstruction Finance Corporation's (RFC) successful preferred stock purchase program during the great Depression, and the Japanese government's largely ineffective bank recapitalization program that was started in 1998.

The Reconstruction Finance Corporation in the United States

Measured by bank failure rates, depositor loss rates, and bank credit contraction, the Great Depression remains the largest and longest shock suffered by the U.S. banking system since the 1830s. The high rates of bank failure and depositor losses produced a loss rate on total deposits in excess of 2% by 1933.

Bank failures in the early 1930s had huge consequences for credit supply. Historically, deposits were at risk in banks with risky loans and little capital. Just the threat of depositor withdrawal imposed a powerful market discipline on banks because the government safety net for banks was quite limited. As a consequence, banks in those days faced strong incentives to limit credit to avoid failure.

But the painful experience of the early 1930s caused the federal government to change policy. The Fed provided loans to banks, while the RFC (after March 1933) made investments in banks in the form of debt or preferred stock. Federal deposit insurance of small deposits began in 1934, but was

21. See Charles W. Calomiris and Andrew Powell, "Can Emerging Market Bank Regulators Establish Credible Discipline? The Case of Argentina, 1992-1999," in *Prudential Supervision* (edited by F.S. Mishkin) Chicago: University of Chicago Press, 147-96, 2001.

22. See Gerard B. Dages, Linda Goldberg, and Daniel Kinney (2000), cited earlier.

limited to banks that were solvent. And both the loans and the preferred stock came with terms that limited the potential abuse of such assistance.

Although insolvent banks were allowed to fail in the early 1930s, the removal of bank assets from bankers' control did not imply the speedy resolution of borrowers' distress. The non-performing loans of insolvent banks were not liquidated quickly; and as in many countries in crisis today, bad loans accumulated and loan resolution slowed. And especially given financial economists' finding that loan resolution backlogs provide better forecasts of future economic activity than other measures of financial sector distress,²³ system-wide bank failures are now widely viewed as imposing major costs on economies, not just from the loss of lending capacity by weakened banks, but also from the effects of bank asset liquidations on consumer liquidity and property values.

For this reason, an important added benefit of assistance to banks, and counter-cyclical macroeconomic policy generally, during the Depression was its positive effect on the liquidity of bank assets and liabilities. The aim of the founders of the RFC was to help save some (but importantly, not all) banks both to preserve suppliers of new credit and to limit the depressing effect of bank asset liquidations on asset prices.

Initially, the RFC operated under the same conservative lending rules as the Fed, but it relaxed its collateral standards after the ouster of its Chairman in July 1932. Loans to banks and other companies increased and, starting in March 1933, the RFC's newly created preferred stock purchase program became its primary means to assist banks.

The change from loans to preferred equity reflected the widespread view that secured loans will not stabilize weak banks. Secured loans are a senior claim on bank assets. In bankruptcy, secured lenders are paid before depositors, so that secured lending to banks effectively raises the risk for junior depositors. As James Olson wrote in his 1977 book on the Depression, "High collateral requirements forced [banks] to isolate their most liquid assets as security for RFC loans. In April 1932, for example, the RFC loaned the Reno National Bank over \$1.1 million, but in the process took as collateral over \$3 million of the bank's best securities. This in itself left the bank unable to meet any future emergency demands for funds by depositors."²⁴ And as Olson wrote in another of his books, loans from "the RFC helped only those basically sound enterprises which needed temporary liquidity."²⁵

Preferred stock, by contrast, was junior to bank deposits, and was not secured by high-quality bank assets. Thus, it offered a means of lowering deposit default risk and so insulated risky banks from the threat of deposit withdrawal. By March 1934 the RFC had purchased preferred stock in nearly half the commercial banks in the United States. By June 1935, these RFC investments made up more than one third of the outstanding capital of the banking system.²⁶

Recent empirical studies have analyzed the effects on banks of both RFC loans and preferred stock purchases. After controlling for differences in the characteristics of banks receiving both kinds of assistance,²⁷ the studies conclude that receiving a loan from the RFC appears to have raised the probability of bank failure, on average, while preferred stock assistance reduced the probability.

The RFC preferred stock program succeeded because it was neither too conservative nor too liberal. RFC assistance would have made little difference if it had targeted only the lowest risk banks for its subsidies. While it did help banks that were at some risk, the RFC did not help deeply insolvent banks that could not be saved. Moreover, the RFC attached conditions to its preferred stock purchases that provided banks with strong incentives to limit risk. In this fashion, capital-impaired, but not deeply insolvent banks enjoyed limited protection from market discipline, but on the condition that they not abuse that protection by transferring too much risk to the government.

How did the RFC's conditions ensure this "happy medium" of controlled risk? First, it offered limited subsidies to banks, and avoided trying to save "basket cases." The RFC required banks to submit their regulatory examinations for RFC inspection, and banks that were judged to be hopelessly insolvent were rejected.

Further evidence of the selective nature of RFC assistance is that dividend rates on the preferred stock were typically less than one percent below market rates, and higher than market rates on short-term business loans. In part, the limited subsidy offered by the RFC reflected its independent corporate status. The RFC's financial independence led its chief executive, Jesse Jones, to make sure that the RFC was profitable every year on a cash flow basis, and he proudly proclaimed that it never saw a year of negative profit under his direction. That performance constraint also limited the subsidies the RFC could offer and caused it to avoid "basket cases."

The RFC was intended to protect banks from a dramatic

23. See Ali Anari, James Kolari, and Joseph R. Mason, "Bank Asset Liquidation and the Propagation of the U.S. Great Depression," *Journal of Money, Credit and Banking* 37, August 2005, 753-73.

24. Olson, James S., *Herbert Hoover and the Reconstruction Finance Corporation, 1931-1933* (Ames, Iowa: Iowa State University Press, 1977).

25. James S. Olson, 1972, "The End of Voluntarism: Herbert Hoover and the National Credit Corporation," *Annals of Iowa* 41 (Fall): 1104-13.

26. See James S. Olson, *Saving Capitalism* (Princeton: Princeton University Press, 1988).

27. See Charles W. Calomiris and Joseph Mason (2003), "How to Restructure Failed Banking Systems: Lessons from the U.S. in the 1930s and Japan in the 1990s," in *Privatization, Corporate Governance and Transition Economies in East Asia*, edited by Ito Takatoshi and Anne Krueger (Chicago: University of Chicago Press, 2003), and Charles W. Calomiris, Joseph Mason, Marc Weidenmier, and Katherine Bobroff, "The Effects of Reconstruction Finance Corporation Assistance on Michigan Banks' Survival in the 1930s," NBER Working Paper No. 18427, September 2012.

decline in their capital, but not to encourage capital-impaired banks to take imprudent risks. Indeed, the RFC imposed the following conditions that substituted for depositor discipline on bank risk-taking: RFC dividends were senior to all other stock dividends, and the RFC had voting rights that effectively gave it the ability to direct institutions toward solvency and profitability and away from excessive risk taking. Common stock dividends were strictly limited while a portion of earnings was devoted to a preferred stock retirement fund. What's more, in many instances, the RFC used its control rights to replace bank officers and significantly alter business practices. And some banks avoided applying for RFC preferred stock purchases out of reluctance to submit themselves to RFC authority.

Finally, although there were numerous attempts by politicians to influence RFC decisions, the RFC's budgetary structure and decentralized decision-making process seem to have insulated it from political manipulation.²⁸ Field offices were given a lot of autonomy over collateral valuation and other judgmental decisions, but were also held accountable to the central office for errors that reduced RFC earnings.²⁹

In sum, the banking crisis in the United States during the Great Depression provides a useful historical example of how policymakers can balance the need to protect banks while maintaining market-like discipline over them. RFC preferred stock assistance proved to be effective in helping banks smooth the adjustment process toward low default risk. It insulated banks from the threat of sudden deposit withdrawal by reducing deposit default risk, but substituted RFC discipline for market discipline to ensure that banks adopted prudent long-run risk management and capital accumulation policies.

Bank Recapitalization in Japan in the 1990s

By early 1998, it had become clear that the Japanese government's loan loss write-off program had not succeeded in getting the country's banks to dispose of bad loans and their financial condition continued to deteriorate. The government then decided to assist ailing financial institutions directly with loans and purchases of debt and preferred stock.³⁰

While this increased bank capital, the government did not make recapitalizations conditional upon better banking and risk management practices. Unlike the RFC in the U.S. in the 1930s, in Japan virtually every bank of any significant size received preferred stock assistance. The government did not try to target assistance selectively or require banks to find private sources of capital alongside government contri-

butions. Indeed, the government even purchased preferred stock in banks that continued to pay out large common stock dividends!

Thus, it is no surprise that the recapitalization program did not lead to lasting improvement. Although the capital adequacy ratio of local banks increased from 6.6% in 1998 to 10.0% in 2000, it had fallen back down to 8.4% by the end of the year 2002. The program also failed to foster corporate restructuring or to re-start bank lending. The private credit-to-GDP ratio fell from 203% in 1996 to 192% in 2000, and then to 176% in 2002. Banks' balance sheets continued to deteriorate as they postponed asset liquidation, hoping they could avoid regulatory discipline and get additional government assistance.

Lessons from the Case Studies

Although the Japanese government-assisted recapitalization was meant to bolster banks' capital and avoid asset fire-sales, it did not address loan loss recognition, the weakness of borrowers' balance sheets, or the absence of incentives to behave differently in the future. As is often the case with such recapitalizations, corporate borrowers paid no portion of the costs. The main problem with government-assisted recapitalizations is the moral hazard they create.

RFC bank recapitalization worked well in the U.S. in the 1930s because resources went to banks worth saving, and those banks then had strong incentive to manage their risk prudently in the future. Deeply insolvent banks were closed by either bankruptcy or the action of bank supervisors. Preferred stock purchases failed in Japan because the government lacked the political will to allocate capital selectively and to discipline banks.

Programs that aim to rescue troubled banks while limiting moral hazard should involve three mutually reinforcing elements: (1) selective assistance to banks worth preserving; (2) clear requirements for preferred stock investment, including effective risk management by recipient banks; and (3) meaningful standards for risk-based capital.

One way to ensure that assistance goes only to banks worth saving is to require that banks issue common stock to match the government's preferred equity investment. This would encourage the best banks to "self-select" into the government program. Capital-impaired but relatively healthy banks with high franchise values would be attracted to such a program, but deeply insolvent banks would not. Banks unable to find buyers of new common stock would be unable to qualify for subsidized preferred stock purchases.

28. See Joseph R. Mason's University of Illinois Ph.D. dissertation: "The Determinants and Effects of Reconstruction Finance Corporation Assistance to Banks during the Great Depression."

29. See John A. Delaney's, 1954, George Washington University. Ph.D. dissertation, "Field Administration in the Reconstruction Finance Corporation."

30. Up to late 1997, the government had relied on the so-called convoy system in which strong banks were called upon to support weaker banks. The stronger banks were given tax incentives to do so.

Despite the attractiveness of this approach, not all countries will be capable of implementing it because they lack strong legal institutions. Rules would have to be enforced rigorously, including bank capital regulations and limitations on dividends. In countries where political influence in the economy is strong and regulatory discipline is weak, a preferred stock subsidy based on a common stock matching requirement is unlikely to achieve its desired result.

Conclusions

We have reviewed seven types of resolution policies, provided actual cases of each, and evaluated them against a number of criteria that relate to effectiveness and cost. The goal of resolution policy should be to rebuild banks' and borrowers' balance sheets at the lowest cost, including the cost to taxpayers and the creation of new moral hazard.

Our first main conclusion is that incentives are crucial to getting the most bang for the least moral hazard. Relatively successful mechanisms recognize the importance of market participants' incentives (as exemplified in the preferred stock assistance provided by the RFC in the U.S. as contrasted with the program in Japan, and in policies encouraging foreign bank entry instead of capital injections into domestic banks). When considering incentives, government policymakers should recognize that loss-sharing requirements between government and private agents can act as a screening device to minimize current costs and future distortions while subsidizing only those banks and corporate borrowers that are worth saving.

Our second conclusion is that the strengths and weaknesses of the different resolution approaches differ, and outcomes are likely to vary in different countries and circumstances even when such *approaches are executed as effectively as possible*. Some approaches target the health of borrowers, others the health of banks. Some approaches—for example, debt forgiveness accomplished through a legal redefinition of debt values—entail lower direct costs to taxpayers than others. Some approaches necessarily have worse incentive consequences for banks or borrowers than others. Thus, policymakers that attach different weights to the various objectives of resolution policy should choose and then design combinations of resolution mechanisms accordingly.

Our third conclusion is that when choosing a resolution approach, or set of approaches, policymakers should also take into account the pitfalls they are likely to experience in executing each resolution approach, and the fact that these pitfalls are a predictable consequence of particular country circumstances, especially the legal, regulatory, and industrial and political institutions. In particular, we take an important lesson of our case studies to be that the advantages from allowing foreign bank entry are less dependent than other policy tools on favorable political environments. Moreover,

once foreign banks are permitted to operate, they generally help to make the financial sector more resistant to political influence peddling.

We also find that the magnitude and kinds of crisis affect the appropriate choices of resolution tools. For example, when the United States finally found the political will to end forbearance and finally deal with the S&L debacle around 1988, thrift regulators and the Resolution Trust Corporation moved swiftly to close or otherwise resolve insolvent institutions, sell foreclosed assets, and force surviving thrifts to recapitalize. Swedish AMC programs also proved to be effective in distinguishing between viable assets and those that should be liquidated. Those successes depended in part on their grounding in the institutional foundations of mature capitalist economies, including (1) a commitment to the rule of law and the enforcement of creditors' rights in courts, (2) relatively successful traditions of bank supervision and regulation, (3) relatively liquid asset markets, (4) a political process that is relatively free of corruption, and (5) the fiscal capacity to finance financial sector resolution costs.

Emerging market countries have not had similar success, largely because of institutional barriers. Successful AMC programs depend on strong creditors' rights, including the ability to foreclose easily, the absence of favoritism or corruption in asset acquisitions and resales, and a bank supervisory and regulatory system that will force banks to recognize losses, manage risk, and recapitalize as necessary. These institutions simply do not exist in the vast majority of emerging market economies.

For this reason, emerging market policymakers must understand the obstacles they will encounter with both market-based and government-based resolution policies. They should rely less on AMCs and other relatively complicated strategies that rely on significant discretionary and oversight authority. Consider, for example, the self-selection mechanisms (like those in the RFC) that link government preferred stock purchases to privately raised equity, or that (like the Punto Final) link government-subsidized debt forgiveness to borrower-bank resolution agreements or to new credit supplied by banks. In principle, both appear to be superior mechanisms for rebuilding bank and borrower balance sheets. By effectively screening for quality through self-selection, these kinds of assistance programs limit moral hazard problems and the fiscal costs of bailouts. But, as we have also noted, such mechanisms depend even more than AMCs on favorable institutional preconditions.

Therefore, emerging market countries with weak institutional foundations may be best served by relying on simple assistance measures that can achieve speedy resolution with less dependence on a high level of political, legal, and economic institutional maturity. The most obvious candidates are encouraging entry by foreign banks and across-the-board debt forgiveness accomplished through the simultaneous

redefinition of the *numeraire* of debt contracts and bank deposits.

That said, both of those approaches have clear limitations. Debt forgiveness is less helpful in the long run in cases where governments cannot credibly commit to using it only in the most extreme circumstances—and for governments in most developing countries, it will be difficult to make such a commitment. What's more, debt forgiveness may not be successful in restarting the credit supply process on a sound footing without an efficient legal and bankruptcy system that encourage borrowers to continue to service the remainder of outstanding debt, and a supervisory framework that forces banks to take advantage of their improved circumstances by rebuilding their capital positions as need be.

And the solution of foreign bank entry may have a similar limitation—that it is likely to succeed in restarting an arms-length credit supply process only if legal institutions

protecting creditors' rights are sufficiently developed. Again, most developing countries do not have such institutions. Nonetheless, in the imperfect world of emerging market finance, foreign bank entry may often be the best policy choice.

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