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# International Financial Markets

## *The Challenge of Globalization*

*Edited by*

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## Blueprints for a New Global Financial Architecture

Charles W. Calomiris

I fear that I must not expect a very favorable reception for this work. It speaks mainly of four sets of persons . . . and I am much afraid that [none] will altogether like what is said of them. *Walter Bagehot (1873)*

### Introduction

This paper considers current problems in what is often termed the *global financial architecture* and proposes a set of solutions to those problems. The solutions take the form of redesigning (in combination) rules governing domestic-bank safety-net policies, lending by the International Monetary Fund (IMF), international competition in banking, and government debt management policies.

The next section, "The Weak Foundations of the Current Global Financial Structure," outlines the problems the proposal is meant to address. "Principles on Which to Build a Global Financial System" describes the principles that should guide reform. The fourth section, "A New Institutional Structure for Credible Loss Sharing," discusses details of how to implement those principles, including specific rules governing domestic-bank safety nets and IMF lending policy. These would replace not only the current IMF but other lending programs as well, including the Exchange

Charles W. Calomiris is the Paul M. Montrone Professor of Finance and Economics at Columbia Business School, a visiting scholar at the American Enterprise Institute, and a research associate of the National Bureau of Economic Research.

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Stabilization Fund (ESF) and ad hoc emergency lending by the World Bank and the Inter-American Development Bank. The fifth section, "The Political Economy of Financial Reform," discusses the political economy of the new set of rules and whether enforcement would be credible. The sixth and final section provides some concluding remarks.

Economics normally provides rather dismal news, emphasizing difficult choices and trade-offs among objectives. In the redesigning of the global financial architecture, however, such is not the case. It is not difficult to construct a set of mechanisms that resolve problems of illiquidity (by providing a responsive quasi-lender of last resort facility) while avoiding the governance and incentive problems attendant to counterproductive bailouts of risk takers. The claim that it is possible to deliver liquidity assistance without bailouts presumes an economic definition of liquidity assistance, a concept with clear and narrow meaning. Politicians and bureaucrats, in contrast, often define *liquidity crises* and *liquidity assistance* broadly and vaguely to disguise transfers of wealth that have nothing to do with true liquidity assistance.

In essence, my proposal would replace ex post negotiations over conditions for IMF lending with ex ante standards for access to IMF lines of credit and restrictions on the manner in which the IMF lends to its members. These rules and restrictions would automatically constrain the circumstances under which assistance would be provided, and at the same time make potential assistance much more rapid and effective. Proposed criteria for access include rules that impose market discipline on banking systems to limit government abuse of liquidity protection.

A credible reform of bank-capital regulation that ensures market discipline makes it possible to construct an effective domestic-bank safety net in the form of a deposit insurance system, which addresses liquidity problems attendant to banking panics. These domestic safeguards, along with restrictions on the way the IMF would lend, ensure that IMF protection would not be abused. Requiring that IMF members meet standards that ensure market discipline in their banking systems and protection against domestic banking panics makes it possible for the IMF to fulfill its proper role in global financial markets: preventing unwarranted speculative attacks on member countries' exchange rates. Private market discipline, therefore, is the linchpin of effective domestic and international safety-net reform.

### The Weak Foundations of the Current Global Financial Structure

Financial crises are the defining moments of the problems that confront policymakers. This section reviews and interprets the recent history of crises and the factors that are alleged to have produced them. The list of problems includes (a) fundamental policy-design flaws in banking systems and in international assistance programs that subsidize risk and foment fundamental bank and government insolvency, and (b) inherent problems of financial systems that aggravate those shocks through four different channels (which are referred to collectively as liquidity problems).

The last twenty years—and particularly the last decade—have witnessed an unprecedented wave of financial collapses. The magnitude of the losses incurred by banks during these collapses is staggering. The negative net worth of failed banks in the United States for the years 1931–33 was roughly 4 percent of gross domestic product (GDP). Nearly a hundred crises with losses of this or higher magnitude have occurred over the past two decades. Twenty of those crises have resulted in losses in excess of 10 percent of GDP, and ten have produced losses in excess of 20 percent of GDP.

Another novelty of the new crises has been the simultaneous collapse of banks and fixed exchange rates. Exchange rate collapses historically were sometimes associated with banking-system collapses, but the two occurred together much less often than they do today, and the historical exchange rate collapses were less severe.

What is driving these crises? The literature has produced a number of explanations, which are not mutually inconsistent. Since the purpose of this paper is to devise solutions (not only for the sake of devising them, but also in the hope of fostering change) I do not prejudge the weights that should be attached to the various views. A proposed set of reforms to the global financial architecture, in order to attract supporters, must encompass a broad spectrum of views.

*Problem 1: Counterproductive financial bailouts of insolvent banks and their creditors and debtors by governments often assisted by the IMF have large social costs.* Bailouts are harmful for several reasons.<sup>1</sup> First, they entail large increases in taxation of average citizens to transfer resources to wealthy risk-takers. Tax increases are always distortionary, and serve to accentuate the unequal wealth distribution. Second, by bailing out risk takers, local governments and the IMF subsidize (and hence encourage) risk taking. Moral-hazard incentive problems magnify truly exogenous shocks that confront banking systems. Excessive risk taking by banks results in banking collapses and produces the fiscal insolvency of govern-

ments that bail out banks, leading to exchange rate collapse. Banks willingly and knowingly take on more risks—especially default risks and exchange risks—than they would if they were not protected by government safety nets.

Risk taking often follows a two-stage process. Initially, macroeconomic shocks (e.g., a decline in the terms of trade) reduce bank capital and raise the possibility of currency devaluation. That changes both the incentives for banks to take risks and their opportunities to do so subsequently. The incentives to take risk rise both because bank capital is lower and because banks seek to protect their loan customers (who sometimes also own the bank) from the effects of the adverse macroeconomic shock. The opportunity for taking on risk during a downturn is higher both because of increases in the credit risk of borrowers and because of increased exchange rate risk. Furthermore, a rising risk of depreciation lowers the relative cash flow cost of borrowing dollar-denominated funds, which can make borrowing in dollars attractive to distressed firms and banks. Banks that borrow short-term dollar-denominated funds economize on the current cash flow cost of those borrowings, but take on a large risk of capital loss if the exchange rate peg collapses.

In the absence of safety-net distortions that encourage risk taking, macroeconomic shocks would encourage the opposite behavior—a reduction in bank risk exposure to reassure bank debt holders.<sup>2</sup> However, overly generous protection of banks insulates them from market discipline and makes them willing to increase their asset risk in the wake of adverse shocks. Banks are willing to do so because potential losses will be borne by taxpayers through government-sponsored bailouts of the banking system.

The risks in these banking systems constitute off-balance-sheet liabilities of their governments, since governments either explicitly or implicitly guarantee to bail out banks that fail. Thus bank risk and fiscal risk grow together, which explains the simultaneity of banking and exchange rate collapses. The differences between emerging market financial crises of the last two decades and historical crises—the larger size of current banking-system losses, and the coincidence of banking-system and exchange rate collapses—are attributable to the new link between private risk taking and public financing of the losses produced by those risks.<sup>3</sup>

Banks are not the only entities protected by government safety nets. Large, politically influential firms other than banks often receive implicit protection from the government on their debts, which encourages a similar tendency to bear exchange risk and to rely on short-term dollar-

denominated funds, particularly in the wake of shocks that raise the risks of devaluation.

The moral hazard problem also can exacerbate the extent of devaluation during exchange rate collapses. Domestic banks that bet against devaluation prior to the exchange rate collapse (by borrowing dollars or entering forward exchange contracts) can magnify the extent of the collapse by adding selling pressure to the market once the collapse begins. As banks experience initial losses on their open exposures to exchange risk, they may be forced to sell their positions suddenly, which magnifies short-term devaluation pressures. In Mexico, this process of unraveling excessive bank (or nonbank) exposures to exchange risk (in the form of dollar-denominated borrowing and derivative positions) contributed to the severity of the exchange rate collapse in 1995. Garber (1996) argues that the dumping of derivative positions and the scramble for cash by Mexican banks in response to large losses on those positions led banks not only to liquidate their long peso positions, but also to dump their short-term government securities (*tesobonos*) on the market, which put added pressure on the peso in early 1995 and contributed to government problems in rolling over maturing treasury debt.

In addition to the immediate economic costs (tax increases and moral hazard) associated with bailouts, there is also a longer term cost from the way bailouts affect the political process domestically and internationally. Domestically, bailouts encourage crony capitalism in emerging market economies and thus help stunt the growth of democracy and reform. Bailouts also undermine democracy and economic competition in industrialized countries. Bailouts (whether channeled through the IMF or the ESF) are often a means for the U.S. treasury to provide subsidies to international lenders and foreign governments without congressional approval, under the guise of liquidity assistance.

IMF policies exacerbate all these problems.<sup>4</sup> The IMF's role in bailouts is threefold. First, it provides a small wealth transfer (via the interest subsidy on its loan). Second, and more important, it encourages countries to bail out international lenders that are often complicit in excessive risk taking. Third, the IMF helps ensure that domestic taxation (to finance the bailout) will occur, by lending legitimacy to the bailout and by requiring increased taxation as a condition of IMF assistance.

So far I have argued that moral hazard is the key villain in the recent, unprecedented wave of financial system collapses. That is not to say that all the costly consequences of financial crises are the unavoidable results of moral-hazard-induced fundamental bank insolvency and its fiscal consequences.

If the only costs of financial system collapse were the *direct costs* of fundamental insolvency—that is, the amount of wealth lost directly through the actions of protected banks and borrowers—then the only threat to the global financial system would be safety-net protection itself. In that case, the best solution to redesigning the IMF arguably would be simply to abolish it, as Schwartz (1998) suggests. The argument for reforming the IMF, rather than abolishing it, revolves around the view that there are important indirect costs attendant to liquidity problems that magnify the direct costs to fundamental bank and government solvency. The potential importance of these indirect costs, and the potential for the IMF to mitigate them, underlies the argument for preserving the IMF. Concerns about liquidity costs can be divided into four additional problems, which are discussed separately below.

*Problem 2: Asymmetric information about the incidence of observable shocks within the financial system, especially when combined with short-term debt finance, can magnify the economic consequences of fundamental shocks by leading to a liquidity crisis.* The historical evidence on banking panics in the United States and elsewhere suggests that panics resulted from observable economic shocks with unobservable consequences for individual financial intermediaries. The vulnerability of financial intermediaries to crises reflects the fact that the values of their assets are difficult to observe (loans are not marked-to-market) and their debt is very short term (often demandable). Those characteristics are intrinsic to the value-creating functions of banks, but they also make banks vulnerable to crises. Small fundamental shocks to aggregate banking-system solvency can promote widespread disintermediation from banks, leading to a contraction in credit, a decline in economic activity, price deflation, and fire-sale losses as banks and their loan customers scramble to gain liquidity.

Asymmetric-information-induced runs on banks prompted by fundamental shocks to bank asset values characterized the panics of 1873, 1884, 1890, 1893, 1896, and 1907. The weeks and months prior to these banking panics witnessed uniquely adverse combinations of the growth of business insolvencies and declines in equity prices. Previous and subsequent financial panics, both within and outside the United States, have been similarly traced to observable fundamental shocks with unobservable consequences for individual banks and bank borrowers.<sup>5</sup>

Because bank panics result from bank vulnerability to asset-value shocks, bank diversification can be extremely useful in forestalling panics. The peculiar propensity for banking panics in the United States reflected the fragmentation of U.S. banks by location, which made bank loans less

diversified than in other countries. That observation suggests that an important ingredient in reducing banking risk in today's global economy is to encourage banks to operate branches throughout the world, and to hold an internationally diversified bundle of securities in their portfolios. The entry of foreign banks into a developing country's market also imposes new competitive discipline on domestic banks, which may be an even greater stimulus to banking stability. Lack of bank competition and diversification has been shown to be a major contributor to bank instability in emerging market economies in recent times, as Caprio and Wilson (1997), Wilson, Saunders, and Caprio (1997), and Kane (1998) emphasize.

*Problem 3: The expectations of speculators can exaggerate the effects of adverse shocks, and can even precipitate self-fulfilling financial collapses when weakened financial systems are also illiquid. Current IMF assistance is inadequate to deal with this problem because it offers too little assistance and attaches too many conditions to that assistance at the time of the loan request, which delays the availability of funds.* There is both a "Sachs version" of this alleged liquidity problem and a "Mahatir version." The Sachs version (outlined in Sachs, Tornell, and Velasco 1996 and Cole and Kehoe 1996) recognizes that economic fundamentals still drive crises to some degree (which, e.g., explains why Singapore did not come under speculative attack in the Asian crisis). The Mahatir version, predictably, sees speculative attacks as conspiracies that victimize the innocent.

My own view is that the evidence does not support placing much weight on multiple-equilibrium explanations of current financial crises. The Mahatir version has been contradicted by recent empirical studies of the behavior of hedge funds and other institutional investors (see Brown, Goetzmann, and Park 1998 and Choe, Kho, and Shulz 1999). The Sachs version, which is plausible on theoretical grounds, is weak on empirical support. As a general theory of crises it should apply not only to the current wave of disasters, but to historical cases as well. My reading of the available evidence on the history of financial crises does not lend support to Radelet and Sachs (1998), who interpret historical crises as being explicable as bad equilibria within the context of the Diamond-Dybvig (1983) or the Sachs models of multiple equilibria.

Furthermore, Sachs and others search for multiple-equilibrium explanations mainly because they find little evidence of extreme fundamental weakness in macroeconomic flow indicators (e.g., conventional measures of government deficits or current account deficits). As argued above, however, this may be the wrong place to look for evidence of fundamental weakness. Expectations of future government expenditures, not current

expenditures, often drive crises. Financial-sector imbalances (expected government costs of a bank bailout, or the bailout of an underfunded pension system) produce fiscal imbalance through the off-balance-sheet contingent liabilities of the government, not through measured flows that show up in today's current account balance or current taxes and expenditures. In a world in which banking-sector collapses often produce fiscal costs in excess of 20 percent of GDP, and in which government expenditures move smoothly compared to changes in off-balance-sheet liability exposures of governments (since banking-system losses can occur very quickly), a focus on macroeconomic flows as measures of fundamentals may leave the prince out of the play. Burnside, Eichenbaum, and Rebelo (2001), for example, show that the fiscal shocks from bank bailouts were a crucial element in the Asian financial crisis.

Despite these objections, there surely is something to Sachs's argument if it is rephrased as the simple claim that a country with very low international reserves is more vulnerable to speculative attacks on its exchange rate or banking system than are others. Furthermore, as Garber (1997) points out, it is very difficult to reject rational-expectations, multiple-equilibrium explanations econometrically. For these reasons, for the purposes of developing my proposed reforms I will assume that the Sachs and Mahatir views have some validity, and that it would be desirable for a global safety net to address the potential for self-fulfilling financial crises to emerge from a combination of small fundamental weaknesses and low liquidity (i.e., low bank and central bank reserves relative to short-term obligations).

*Problem 4: "Contagion" across countries in securities and loan markets should be contained.* Some researchers have noted that correlations in asset returns are higher across emerging market countries during crises than at other times, and even government bond yields move together to an unusual degree during financial crises. There are several explanations for this contagion. One is irrationality on the part of investors: a second is rational portfolio rebalancing by international investors—if portfolio investors (like banks) target a given default risk on the debt they issue, then they will endogenously shrink asset risk in one country in response to capital losses or exogenous increases in asset risk in another country. A third explanation revolves around linkages in international trade that can transmit economic decline, which is then reflected in asset prices. A fourth explanation revolves around multiple equilibria (either through changes in speculators' views about the probability of bad equilibria, or through reductions in central bank liquidity following a global flight to quality). To

the extent that cross-country contagion reflects irrational speculation or multiple equilibria, policies that would solve those problems would also eliminate cross-border spillover effects.

*Problem 5: Government debt management sometimes leans too much on short-term debt.* There are good reasons (incentive compatibility) for governments to shorten their debt maturities during times of fiscal uncertainty. Indeed, governments have been doing so for centuries.<sup>6</sup> This practice, however, might promote self-fulfilling attacks on currencies (following the multiple-equilibrium reasoning of Cole and Kehoe 1996 and of Sachs, Tornell, and Velasco 1996). Mexico's financial crisis is often held up as an example of such a problem. Although these authors may overstate the empirical evidence in support of that view (particularly in Mexico, where weak fundamentals in the banking system and in central bank policy were evident by late 1994, and persisted afterward), there is a version of this view that is reasonable: A short-term structure of government debt probably aggravates liquidity problems that have their origins in other fundamental shocks (fiscal risks associated with banking-system collapse), as in Mexico during the *tesobono* sell-off of 1995.

There is another reason to be concerned about the short-term structure of government debt. Governments suffer a moral hazard problem with respect to the maturity structures of their debts because IMF protection removes the cost of taking illiquidity risk through the shortening of government debt term structure. In an environment where the IMF cannot credibly say no to bailing out governments that abuse its protection, the IMF may be encouraging financial fragility by not penalizing government debt structures that rely excessively on short-term obligations.

From the perspective of these five challenges to financial-system stability, current IMF policies are woefully inadequate and, indeed, are part of the problem. When a country suffers a banking-system-cum-exchange-rate collapse, its government protects politically influential domestic stakeholders by bailing out banks, their debtors, and their creditors, all at the expense of taxpayers. IMF loans to countries suffering financial collapse serve as bridge loans to permit the rescheduling of debt. The conditions imposed by the IMF along with its financial support help ensure that tax increases to finance the bailouts will be forthcoming, making the IMF an accomplice to the transfer of wealth from taxpayers to domestic oligarchs and global lenders. Banking reforms, promoted by the IMF as a condition for assistance, are inadequate and there is no credible mechanism for ensuring that mandated reforms will be carried out.<sup>7</sup>

Furthermore, IMF assistance is provided only after an agreement is

reached, and funds are released in limited amounts over several months. That way of providing assistance is not effective in solving liquidity problems, which require large amounts of funds to be available on very short notice. Thus, current IMF assistance is a non-starter, both from the standpoint of limiting moral hazard problems and from that of reducing the risks of liquidity crises.

We can do much better. Public policy cannot eliminate unavoidable shocks to the financial system. However, thoughtful policy can reduce the five avoidable risks listed above, which magnify the costs of exogenous shocks that buffet banking systems and government finances.

### Principles on Which to Build a Global Financial System

In light of the discussion in the previous section, the central twofold objective of policy is to avoid moral hazard problems that give rise to imprudent banking practices while also protecting against the four liquidity problems that can magnify fundamental shocks. A careless approach to providing liquidity assistance results in excessive and counterproductive assistance—a tendency to throw money at fundamental problems, which aggravates problems of imprudent banking and encourages unwise fiscal, monetary, and debt management policies.

Finding the right balance between liquidity assistance and market discipline is the crux of the policy problem. A financial-system safety net will not achieve that balance by making it impossible for banks to fail or for exchange rates to collapse. A system that would eliminate the possibility of collapse would also encourage poor management of private and public affairs. Banks should sometimes fail, exchange rates should sometimes depreciate, and governments should sometimes have trouble rolling over their debts.

Although finding the appropriate balance requires care, I will argue that constructing a balanced safety net does not pose an intractable economic dilemma. It is not the case that policymakers confront an inevitable, dismal trade-off between higher incentive costs from the safety net and greater benefits from safety-net protection against liquidity crises. It is possible to capture the benefits of legitimate liquidity insurance without suffering the costs of moral hazard.

How can financial-system safety nets provide systemic insurance against illiquidity without engendering moral hazard? To achieve that goal, credible *ex ante* rules must properly allocate *ex post* losses to private agents, local governments, and international agencies. A global financial safety

net, therefore, must define more than the IMF's lending policy; it must define the tranches of risk that are credibly assumed by parties other than the IMF as well as the risks the IMF assumes.

This goal is not new. In fact, it underlay Walter Bagehot's (1873) classic policy prescriptions for domestic central banking: to lend freely at a penalty rate on good collateral. Bagehot argued that an elastic and immediate supply of liquidity was essential to an effectively structured lender of last resort, and that appropriate loss-sharing rules in the form of collateral requirements and penalty interest rates would discourage abuse of the safety net.

Successful lenders of last resort historically have had in common an ability to set credible risk-sharing rules that minimize moral hazard while maximizing the ability of the system to provide liquidity during crises. In the United States prior to the Civil War, for example, three states (Indiana, Ohio, and Iowa) successfully operated mutual insurance systems for member banks that revolved around that principle (Calomiris 1989, 1990, 1993). These were imitated by the New York Clearing House and by other private clearinghouses (Cannon 1910; Gorton 1985). Member banks were constrained by rules and credible monitoring arrangements that limited the riskiness of their debts. Insolvent banks were ejected from coalitions that provided liquidity protection for solvent banks. Enforceable rules requiring the pooling of risks during crises to solve liquidity problems ensured sufficient collective protection. These systems provide examples worthy of imitation today. All successful historical safety-net systems revolved around credible arrangements for limiting moral hazard by clearly defining how losses incurred by members would be allocated.

The appropriate allocation of risk in global safety-net policy requires a credible segmentation of risk into three tranches: the private tranche (exposures to loss incurred by private claimants of individual financial institutions), the domestic government tranche (exposures to loss assumed by local-government bank safety nets, and hence by local taxpayers), and the IMF tranche (exposures to loss assumed by the IMF). The other key design feature of the global safety net is determining how the IMF's financial positions are financed (i.e., how risks taken by the IMF will be passed on to other parties).

The role of financial-system regulation, which includes the rules for IMF lending, is to clearly define when and how the IMF lends, and how losses are allocated within the financial system to maximize the effectiveness of protection against illiquidity while minimizing the moral hazard costs of protection. To be effective, those rules not only must make eco-

normic sense, but must be *transparent* and *credible* as well. In other words, the rules governing the global safety net must qualify not only as economically sensible, but also as politically robust.

#### A New Institutional Structure for Credible Loss Sharing

Without a credible first tranche of private loss, moral hazard will plague any attempt to provide liquidity, from either domestic governments or the IMF. What is needed is a set of transparently credible rules that impose a margin of private loss on bank claimants, which limits the exposure of taxpayers to bailout costs *ex post* and, in so doing, limits banks' willingness to undertake risks *ex ante*. Putting those safeguards into place should be a requirement of access to IMF credit. Qualifying members would be eligible for IMF liquidity protection—loans from the IMF that are specifically designed to resolve liquidity problems, not to bail out insolvent banks.

By setting clear, credible criteria for IMF membership, and devising rules for IMF lending that guard against liquidity problems without providing bailouts (that is, without absorbing bank solvency risks), the IMF and its loan programs would help stabilize global financial markets. What sorts of rules would work to accomplish these objectives? The rules divide into three types: (a) domestic regulations required as a condition for IMF membership, (b) rules governing IMF lending to members, and (c) rules defining the way IMF loans are financed.

#### *Credible Bank Regulation. Subordinated Debt, Liquidity, Insurance, and Free Entry*

The bank regulatory requirements that should be mandatory for IMF borrowers include four components: (a) capital requirements (including, in particular, a subordinated-debt requirement as part of the capital requirement), (b) reserve requirements (minimum ratios of assets in cash), (c) the explicit insurance of some bank deposits, and (d) "free banking" (unlimited chartering of banks conforming to common regulatory standards, and unlimited investment by foreigners in banks, conforming to the same standards as domestic investors).

A key function of capital regulations is to provide a credible first tranche of private loss by ensuring that uninsured bank claimants (stockholders and subordinated debt holders) will lose wealth when banks suffer adverse shocks to the values of their risky assets. Minimum cash-reserve-ratio requirements serve a similar function (effectively ensuring a margin of pro-

tection for insured debt), and also enhance bank liquidity. A minimum amount of global securities—domestic and foreign marketable instruments—adds to the transparency of bank balance sheets and helps diversify bank risk. Thus restrictions on asset holdings and on the composition of bank liabilities provide crucial buffers that ensure the privatization of bank losses, and thus make it easier for local governments and the IMF to provide cost-effective liquidity protection. These regulatory requirements are a first line of defense that reduces the risk of bank failure, the potential for costly bank bailouts, and the liquidity risk that banks face.

Free entry into banking by foreign investors provides an important source of capital (to meet regulatory capital requirements). It also helps diversify both the ownership base of banks and their asset portfolios (since foreign banks naturally hold more globally diverse portfolios), which makes banks more resilient in the face of adverse domestic shocks. Finally, foreign banks provide important competitive pressure that improves the quality of domestic bank management (Demirgüç-Kunt, Levine, and Min 1998; Kane 1998).

Because of the importance of credibility and transparency, bank capital and portfolio regulations must be designed carefully. Credibility and transparency require a reliance on market discipline to enforce bank regulations (Keehn 1989; Wall 1989; Flannery 1998; Berger, Davies, and Flannery 2000). In capital standards, the devil is in the details. A key flaw in the Basel capital requirements to date has been their emphasis on government supervisory standards when measuring capital. Book value equity is measured by supervisors who often have little skill, and even less incentive, to report bank asset losses accurately. Second, the Basel standards imply an arbitrary link between their measure of asset risk and book value capital, while the true asset risk of the bank can differ from the Basel measure of "risk-weighted assets." The mandated 8 percent capital requirement is insufficient if banks assume very high asset risk, and the measurement of risk-weighted assets under the Basel standards leaves much room for bank manipulation of risk (see Shadow Financial Regulatory Committee 2000).

The Basel capital requirements can be substantially improved by incorporating into their framework a minimal (say, 2 percent) subordinated-debt requirement, as a means to ensure a credible relationship between capital and asset risk via market discipline. This approach was first proposed by the Chicago Federal Reserve Bank (Keehn 1989) and the Atlanta Federal Reserve Bank (Wall 1989) in response to the U.S. savings and loan (S&L) and banking crises of the 1980s. The approach outlined here is a modified version of the Chicago Fed plan, and includes elements



described in Calomiris (1997, 1999), Calomiris and Litan (2000), and Shadow Financial Regulatory Committee (2000).

As part of their capital requirement (e.g., the 8 percent Tier 1 and Tier 2 requirement under the Basel standards, which apply to internationally active banks), banks would be required to issue at least 2 percent of their assets in the form of a new class of subordinated debt. That debt would be subordinated to (that is, junior to) other bank debts. Unlike equity holders, subordinated debt holders do not benefit from asset substitution (increasing asset risk in order to exploit the implicit put option value of deposit insurance). Thus subordinated debt holders would be a conservative force for restricting bank risk taking, and protecting relatively senior bank deposits. Because subordinated debt is easy to measure (unlike the book value of equity), a minimal subordinated-debt requirement avoids the problems of relying on domestic bank supervisors to measure compliance with equity standards. Furthermore, the yields on the debt are observable, which provides a continuous and transparent market opinion about bank risk and constrains supervisors' ability to postpone enforcement of prudential standards (so-called *forbearance*).

Subordinated debt can be offered through various means to ensure institutional flexibility, and to prevent discrimination against banks that lack access to public debt markets. Banks could issue subordinated debt in the form of interbank deposits, private placements with nonbank creditors, or public offerings. To be successful, however, subordinated-debt issues should be restricted in several ways. To ensure that it serves its role as a source of market discipline, subordinated debt must be credibly subject to loss, and must be held at arm's length. The details of how to design an appropriate subordinated-debt standard are discussed in Calomiris (1999) and Shadow Financial Regulatory Committee (2000).

The subordinated-debt requirement is designed to encourage prudent behavior by banks ex ante (since, on the margin, they are always subject to market discipline), and to encourage appropriate adjustment of asset risk to adverse shocks ex post. Unlike many banks currently, banks subject to a subordinated-debt requirement would not deliberately increase risk in the wake of losses. Instead, banks would have strong incentives to reduce asset risk and cut dividends (or find alternative ways to raise capital) in the face of losses, much as banks did before safety nets changed their incentives to react appropriately to shocks.

Because subordinated debt holders bear risks that come from both on-balance-sheet and off-balance-sheet asset risks, they would also discourage attempts by banks to avoid regulatory capital standards by placing

transactions off banks' balance sheets. Subordinated debt holders also encourage banks to develop clear reporting procedures and effective tools for risk management.

A banking system governed by a credibly uninsured subordinated-debt requirement is self-equilibrating. Banks may have difficulty rolling over subordinated debt in response to severe shocks (given the proposed yield spread limit on subordinated debt). The failure to roll over subordinated debt mandates a contraction of risk-weighted assets (e.g., a contraction of loans). That contraction itself reduces asset risk, eventually allowing the market spread on subordinated debt to fall within the prescribed limits of the regulation.

Restrictions on bank asset composition are also desirable, both to promote liquidity for the system as a whole and to provide a transparent safeguard against bank default risk in addition to requiring subordinated debt. Argentina's high reserve requirements were extremely useful in helping Argentine banks weather the tequila crisis in early 1995. Argentina also showed creativity in the way it allowed banks to meet those reserve requirements. Banks were encouraged to hold up to 50 percent of their reserves offshore in private commercial banks, and to hold much of their reserves in the form of standby arrangements with foreign commercial banks (for which the Argentine banks paid a fee) rather than in the form of actual dollar deposits. Like a subordinated-debt requirement (also a feature of the Argentine system) this arrangement rewarded low-risk banks that were able to pay low fees for their standbys.

I propose a similar requirement as part of the mandatory minimum reserve requirement for banks—a 20 percent reserve requirement relative to bank debt, with half to be held offshore (partly to protect against government confiscation of bank resources). Banks can satisfy the 10 percent offshore reserve requirement by maintaining standbys in that amount with any AA-rated international bank.

Some bank debts other than subordinated debt (i.e., a class of senior deposits) should be insured by the government. Doing so would reduce the risk of banking panics due to asymmetric-information problems (problem 2, discussed earlier) or multiple equilibria (problem 3).

The argument in favor of government deposit insurance is primarily a political, rather than an economic, one. Arguably, private methods of protecting against banking panics may be superior to government deposit insurance. Because governments tend to be incapable of credibly committing not to provide insurance ex post, however, it is impossible to construct effective private systems.

Explicit government insurance is superior to implicit government insurance. Although there are some theoretical and empirical arguments in favor of "constructive ambiguity" in deposit insurance that might favor implicit over explicit insurance, those arguments are not convincing. Implicit insurance does not provide as much protection against runs. Also, making insurance explicit allows governments to charge insurance premiums for the protection, and helps government actions conform better to stated government policy (surely a desirable principle in a world where reputation building has value).

In the presence of the other prudential regulations (the subordinated-debt requirement and the reserve requirement), deposit insurance should not be very costly. In a world where market discipline constrains bank behavior, there are likely to be few bank failures, and small losses from insuring some deposits.<sup>8</sup>

These four regulations—subordinated-debt requirements, minimum reserve ratios, free banking, and deposit insurance—constitute a *minimal standard* which should be required as a condition for establishing lines of credit at the IMF. I would recommend that countries go beyond that minimal standard when devising their bank regulations. A detailed set of recommendations is provided in Calomiris and Powell (2000). Although it is desirable to improve bank regulation by including regulations in addition to the four minimal standards, some regulatory standards should vary across countries. Furthermore, a subordinated-debt requirement and the market discipline it brings arguably subsume other regulatory standards and make additional measures less important. If banks have to satisfy market discipline, markets will informally impose safeguards against market risks, insider lending, and other potential problems, because banks will have to satisfy market perceptions about their overall risk profiles.

By keeping the list of required regulations short and simple it will be easier for the IMF to credibly enforce the rules it sets (see the section on "The Political Economy of Financial Reform"). By vigorously enforcing these rules the IMF will return reason and balance to international banking, and prevent its own protection from being a source of financial instability.

A reformed global banking system will also reduce the riskiness of emerging market securities. Banking systems as a rule have been run inefficiently in emerging market countries, and banks often pursue opportunities more on the basis of insiders' interests than a proper valuation of loans. For that reason there are many viable projects that should be financed by banks rather than via securities issues (i.e., projects that require ongoing monitoring and discipline by banks through concentrated local

holdings of claims on borrowing firms), but are pushed into securities markets for lack of a local means of bank finance. In a properly functioning global banking system, those projects would be financed by banks, and banks would be more internationally diversified to permit them to deal with the risks that arise from those risky projects.

These four core banking regulations would ensure a properly functioning global banking system. Free entry, competition, and credible market discipline would encourage proper diversification, prudent management of risk, and an efficient allocation of bank capital. They would also make it possible for the IMF to do the job it was chartered to do—that is, to provide liquidity insurance—without the destabilizing side effects of moral hazard.

#### *Other IMF Membership Requirements*

Thus far I have focused on the structure of banking systems, and on proposed mandatory bank regulatory requirements for IMF membership. That emphasis is appropriate given the important role that banking system losses and moral hazard have played in exchange rate collapses and IMF-sponsored bailouts. Of course, it may also be desirable to place additional limits on prequalification to discourage further abuse of liquidity assistance.

In addition to the mandatory bank regulations, the IMF could require that countries meet minimal standards in their fiscal policies (e.g., some sort of modified Maastricht criterion). It might also be desirable to encourage countries to adopt minimal standards for government debt maturity structure (to limit liquidity risk from excessive reliance on short-term debt by governments), and monetary or exchange rate policies that limit the risk of exchange rate collapse. One can argue that it is appropriate for the IMF to set such standards for debt-management, fiscal, and monetary policies, as well as banking practices, since the IMF will provide liquidity assistance to overcome short-term balance-of-payments disequilibria or to facilitate debt rollover.

Nevertheless, despite the potential desirability of encouraging prudent policies, to prevent abuse of IMF lending, it is also possible to argue against too many prequalification criteria, particularly when those criteria do not lend themselves to being codified in clear rules. The difficulty in constructing meaningful rules can lead to excessive intrusion (micromanagement) by the IMF into countries' fiscal affairs. Furthermore, the greater the discretionary latitude, the more room for politically motivated forbearance by the IMF in enforcing rules.

Finally, in addition to prequalification, to prevent abuse of IMF liquidity assistance, the IMF should lend funds on a senior basis at a bona fide penalty rate (a large markup over its lagged sovereign yield in the market). Countries seeking bailouts from the IMF to benefit their domestic taxpayers (as distinct from liquidity assistance) will not borrow at a penalty rate from the IMF because doing so would not transfer any subsidies to them.<sup>2</sup> Of course, setting penalty rates as markups on lagged interest rates can be a problem if sovereign risk is prone to sudden (daily) jumps. However, the main source of a dramatic, rapid deterioration in a country's sovereign default risk (i.e., a severe deterioration over a matter of days, which could undermine the effectiveness of penalty-rate lending as an incentive device, as described below) comes from the government's contingent liabilities for protecting the banking sector. Thus, so long as the banking sector is solvent, and the IMF lends as a senior creditor at a penalty rate set as a markup over the immediate precrisis borrowing cost on sovereign debt, moral hazard from access to IMF credit should be minimal.

I propose a few simple rules, in addition to the four governing the banking sector, that are easily defined and enforced and minimally intrusive. As in the case of mandatory banking regulations, rules should be as few and as simple as possible, and should be designed to make compliance with them easily observable to the IMF and to third parties.

To limit liquidity risk in sovereign debt, countries could face a ceiling on the proportion of short-term sovereign debt they issue. For example, members could be required to maintain ratios of short-term debt that were no more than 25 percent of the previous year's export earnings, and no more than 25 percent of total sovereign debt.

Countries should not be required (or even encouraged) to maintain fixed exchange rates, but if a country does peg its exchange rate, then it would be desirable to require it to meet two additional standards. First, it should maintain a minimum ratio of reserves to high-powered money. Economic theory has little to say about the right reserve ratio for a central bank to maintain, except that the right minimal proportion of reserves depends on the confidence the market places in fiscal and monetary policy. Countries operating currency boards maintain ratios of nearly 100 percent, but there are many examples of countries (the United States prior to 1933, for one) that have been able to maintain exchange rates for long periods of time with much smaller reserve ratios. Rather than requiring everyone to hold 100 percent reserves, or trying to set standards for reserves that depend on hard-to-observe fiscal and monetary fundamentals,

I propose requiring a low minimal reserve ratio (25 percent) and encouraging countries to manage their reserve policies properly by making it clear (by enacting the aforementioned reforms to IMF lending policy) that the IMF will help resolve *only bona fide* liquidity problems.

Second, member countries with fixed exchange rates should be required to permit banks to offer deposits denominated in both domestic and foreign currencies. Doing so (as Argentina did when it adopted its currency board) helps insulate banks from the risk of devaluation; funds can flow out of the domestic currency without flowing out of the banks. Bank deposit accounts in both currencies also provide continuous market information about the risk of devaluation. Domingo Cavallo, the Argentine finance minister, has argued that observing interest rates in both currencies gives domestic policymakers a valuable signal of market perceptions of government policies that bear on the maintenance of the exchange rate (Cavallo 1999).

Observing interest rate differentials prior to a speculative attack also would give the policymakers valuable information, which may be useful in judging the causes behind a speculative attack or preventing one. Government accountability is also enhanced. If the perceived risk of devaluation (reflected in the interest rate differential) rises gradually over a matter of months, while the government makes little effort to diffuse market concerns through increases in reserves or fiscal reforms, then it is difficult to blame the speculative attack on multiple equilibria or irrationality.

I do not include any membership requirements with respect to capital controls, fiscal or monetary policy, or devaluation policy. Although I recognize that such criteria might be desirable, I cannot think of simple, general rules to cover these areas; moreover, the appropriate policies with respect to capital controls and the appropriate circumstances for a devaluation should be left to governments to decide for themselves.

Many economists have rightly argued that the proper alternative to bailouts is a functioning bankruptcy code that can distribute loss according to clearly specified rules. I agree with that point of view, but do not attach it here as a condition for IMF lending for two reasons. First, it would be difficult to specify the terms of that bankruptcy code in an uncontroversial way (the Swedish code is my personal favorite). Second, it is probably not necessary to add bankruptcy reform as an additional requirement of IMF lending. A banking system that is responsive to market discipline will be a powerful force for creating bankruptcy reform endogenously. The same can be said for the endogenous reform of commercial law, collateral registration procedures, and accounting standards.

*IMF Lending Policy*

Thus far, I have outlined the criteria for borrowing from the newly constituted IMF. Access to IMF assistance depends on satisfying four bank regulatory requirements (free banking, market-based capital standards, reserve requirements, and credible deposit insurance) and three additional policy requirements (limits on short-term government debt, and two additional rules for fixed-exchange-rate economies: a minimal central bank reserve requirement, and the requirement that banks be permitted to offer accounts denominated in both domestic and foreign currency). Countries that do not satisfy these requirements would be ineligible for lending from the IMF.

Of course, it would be necessary to allow a phase-in period for establishing these standards. Five years would be a reasonable time frame for countries to adopt the necessary reforms.

What function would IMF lending serve, and what rules would apply to that lending? The goal of the IMF would be to mitigate problems of illiquidity, as described above. Note that many of the problems listed in the earlier section on "The Weak Foundations" are addressed by IMF prequalification requirements. Problems associated with bailouts, and banking panics resulting either from asymmetric information about bank loan portfolios or multiple equilibria, are mitigated by the requirements that mandate market discipline in banking, and that ensure against asymmetric information panics (i.e., the credible insurance of bank deposits). Problem 5 (government debt rollover risk) is addressed by limiting short-term sovereign debt issues, which also prevents governments from free-riding on IMF insurance against liquidity risk.

To provide liquidity protection while avoiding abuse of IMF loans, I propose that the IMF provide lines of credit to sovereign borrowers on a senior basis at a penalty rate. The proposed lending policy is based on Bagehot's (1873) rule: lend freely during crises on bona fide collateral at a penalty rate. Bagehot's rule was designed to create appropriate incentives for banks borrowing from the central bank. Banks facing an illiquidity crisis benefit by borrowing at a penalty rate, but insolvent banks do not. If an insolvent bank were to borrow from a senior creditor at a penalty rate, it would weaken its fundamental portfolio value slightly (because of the penalty rate) and would also aggravate the losses to its junior depositors and stockholders because of the pledging of collateral to the senior creditor. By *penalty rate* I mean a rate higher than the pre-crisis market rate for the borrower.

In the case of sovereign borrowing from the IMF, physical collateral is an impractical means for ensuring seniority. Not all sovereign borrowers possess state-owned enterprises that export primary commodities for which collateralization would be feasible. Indeed, requiring collateral might even create an undesirable incentive for governments to retain control over export industries rather than privatize them. Thus, despite the desirability of lending against physical collateral (as described in Calomiris and Meltzer 1999), this approach suffers from major practical problems. Instead of relying on physical collateral, establishing the clear legal seniority of IMF lending, and limiting the amount of IMF loans in order to make seniority meaningful would serve the same function—providing the incentive for the country to access the credit line only during bona fide liquidity crises. For additional discussion of this point, see International Financial Institutions Advisory Commission (2000).

To be concrete, a government that is a member in good standing would be able to borrow up to a maximum amount of dollars or other hard currencies from the IMF for a short period of time (say, for one year, with one rollover permitted). The interest rate would be 2 percentage points above the sovereign yield in the market one week before the request for an IMF loan.

The new IMF discount window would provide significant protection against short-term liquidity problems. Governments would be able to convert large amounts of their bonds into cash on short notice, provided that they satisfied prequalification standards and IMF lending rules. Assistance would be available on short notice, without the delay (and intrusiveness) from setting *ex post* conditions.

Of course, this discount window would not protect a country against persistent balance-of-payments outflows, and it should not attempt to do so. Persistent outflows, which would lower central bank holdings of hard currency and hard-currency-denominated securities, would be a sure sign of fundamental weakness. IMF lending should not try to prop up unsustainable currency pegs. It should lend freely, however, to ensure that sudden, self-fulfilling speculation does not undermine an otherwise sustainable peg.

It is worth emphasizing that a Bagehotian lender of last resort cannot provide much protection against banking panics that are caused by asymmetric information about bank loan quality. That is why it is necessary to combine a Bagehotian lender of last resort (like the reformed IMF lending facility envisioned here) with credible protection against asymmetric information problems in the banking sector. Deposit insurance reduces depositors'

incentives to run banks when they become concerned about the value of loan portfolios. Credible market discipline (through a subordinated-debt requirement and a reserve requirement) reduces the incidence of such asymmetric-information problems and provides strong incentives for banks to control loan risk, which eases the funding burden of providing deposit insurance protection, and fosters deposit insurance credibility.

How would the IMF finance its lending to central banks? IMF senior lending at a penalty rate would be self-financing. Funds for loans could either be made available through credit lines with hard-currency-issuing countries, or through private market debt issues, as suggested by Lerrick (1999).

### *Transition Problems*

Some of the world is very far from meeting the conditions specified above for IMF membership. Over the five years allowed for transition to the new arrangements, how difficult would it be for countries to satisfy the eight membership requirements, and what transitional policies could facilitate that process?

The central bank reserve requirement, the limits on government debt maturity, and the requirement that banks be permitted to offer accounts in domestic and foreign currency would be relatively easy to satisfy. The main difficulty is transforming the banking systems of many countries (including those in some Western European countries, as well as the vast majority of those in developing economies) into competitive, market-oriented systems. The problem is not mainly an economic one; if governments opened their banking systems to foreign entry and imposed the regulations suggested above, efficient banking systems would develop quickly. The problem, however, is the politics of banking—the resistance of entrenched special interests to reforms that would erode the rents they currently enjoy. The challenge reformers face is to find a way to placate that political opposition.

The resistance to market discipline can be found even in relatively efficient banking systems (like that of the United States). U.S. banks consistently opposed a subordinated debt requirement in recent years, predictably preferring to maintain the implicit subsidy from the taxpayers. But for a brief moment before the passage of the 1999 Gramm-Leach-Bliley Act, some of them (notably members of the Bankers Roundtable, which represented the largest 150 U.S. banks) were calling for safety net reform because they saw credible market discipline, and a subordinated-debt

requirement in particular, as means of permitting an expansion of bank powers (Bankers Roundtable 1998).

Deregulation is one way of buying support for market discipline, but in many developing economies (where banks already enjoy broad powers, and where bank owners would have great difficulty meeting market-enforced capital standards), it may be necessary to buy support more overtly through a government-financed recapitalization of existing banks. That recapitalization would make it easier to swallow the pill of market discipline, and if a one-time subsidy would set the stage for credible regulatory reform (on the lines described above), it would be well worth the cost.

Such a recapitalization must be carefully designed, however, so that it is cost effective and does not undermine market discipline in the future. One approach to providing government subsidization of bank recapitalization without undermining the effectiveness of market discipline is proposed in Calomiris (1998a, 1999). Assistance would take the form of subsidized government purchases of bank preferred stock for a short period (say, five years). Those purchases would occur on a matching basis with arm's-length public offerings of new common stock. To qualify, banks would have to agree to other provisions, including the suspension of dividend payments on common stock during the period in which the government holds preferred shares. The one-time recapitalization subsidy is designed automatically to target assistance toward the relatively strong, and to help make subordinated debt requirements feasible.

The World Bank and other development banks could help during the transition process in two ways: by providing financial assistance to encourage countries to implement credible market discipline (and thereby qualify for IMF membership), and by offering advice on how to structure complementary institutions and laws (including commercial laws, accounting codes, and bankruptcy laws). Too often, World Bank loans have crowded out private lending and removed incentives for countries to adopt the fundamental reforms of property rights on which private lending depends. World Bank loans to China are the clearest example of such misdirected lending. However, in some cases the World Bank has successfully targeted its assistance to encourage privatization of financial institutions and the creation of credible market discipline. Its loan subsidies to Argentina to help pay for the privatization of provincial banks are an example. The World Bank and other development banks could help ensure broad-based membership in the new IMF by redirecting loan subsidies toward government programs that restructure banking systems to encourage adherence to market discipline.

### *Large Macroeconomic Shocks*

No matter what the stated commitment to market discipline, time-inconsistency problems will tempt governments to provide assistance to banks during severe macroeconomic downturns. Banking systems that respond properly to market discipline will necessarily magnify recessions by curtailing the supply of loanable funds when they experience losses on their loan portfolios. Governments will be tempted to relax market discipline to prevent the aggravation of cyclical downturns.

A better approach is to maintain market discipline through the subordinated-debt requirement but subsidize private bank recapitalization (using the preferred-stock-matching subsidy described above) to counteract especially severe economic downturns. I am not arguing that bank recapitalization is desirable economically; rather, I am arguing that if government intervention into the banking system is politically inevitable, it is better to intervene to help banks meet the standards of market discipline, rather than simply repealing those standards.

### *Waiving the Prequalification Requirement*

What would happen if a liquidity crisis in one country that had not prequalified for IMF lending threatened the stability of many neighboring countries, and of global capital markets more generally? It is probably beneficial, and in any case, probably unavoidable, to allow the IMF to waive prequalification requirements for lending if a sufficiently severe liquidity crisis erupts. Granting waivers too freely would weaken the incentives for reform in banking systems and other government policies; but that need not imply significant moral hazard from IMF lending. The IMF would still lend on senior terms at a penalty rate, implying that accessing IMF funds would not provide subsidies for bailouts of governments or banks. Indeed, it would be desirable to make the penalty rate even larger to nonqualified borrowers (say, 3 percent above the precrisis yield) to further ensure that IMF loans do not channel fiscal subsidies to borrowing countries.

### *The Political Economy of Financial Reform*

Politics poses challenges for any attempt to bring economic reason and market discipline to bear on the regulation of the global financial system. Politicians and regulators are jealous of their power, tend to prefer sys-

tems that rely on discretion rather than rules, and are more comfortable managing cryptic decision-making processes (the proverbial smoke-filled rooms in which IMF policies are determined today) than engaging opponents openly in public fora.

Thus, the reforms I advocate—the abolition of the ESF and a sweeping reform of the IMF—will likely not be very welcome in Washington or in the treasury departments or finance ministries of many nations. That does not mean that reform is impossible, but it certainly will be an uphill battle.

Consider, for example, the problem this proposal poses for the U.S. treasury department. It has frequently used the ESF (Schwartz 1997, 1998) and the IMF as means to provide foreign aid under the guise of liquidity assistance. These mechanisms have the advantage that they avoid the unpleasant and inconvenient requirement of seeking congressional approval for such aid. Also, the costs of aid are shared with other countries. Another convenient aspect to multilateral lending is the inability to trace the political deal underlying the flow of aid.

The political obstacles to rationalizing the current system are formidable but the distortions in decision making created by those obstacles also are motivating a redoubling of effort in some quarters to reform the system. Simplifying the IMF's role and decision-making process by setting simple, meaningful, and publicly observable membership criteria, and placing strict bounds on how and when the IMF provides assistance, would be a welcome means of reducing politically motivated distortions from the process of providing necessary liquidity assistance. These reforms would also remove the IMF from the uncomfortable position of dictating the details of macroeconomic and microeconomic policy to its member nations (see Feldstein 1998). Aside from IMF membership criteria (see table 7.1 for a summary), according to my proposal, no conditions would be attached to IMF liquidity assistance.

The prospect of a world where the power to allocate risk would be less abused, and where political puppeteers would find the strings of the financial system beyond their reach, fires the imagination and invites the effort to see such a project through. The recent failings of IMF–U.S. treasury policies in Mexico, Asia, Russia, and Argentina, and the chorus of criticism facing the IMF and the treasury, provide a window of opportunity for reform. Congress is now poised—for the first time in U.S. history—to thoroughly evaluate the process of decision making within the IMF.

Table 7.1 Elements of the Reform Plan

Regulation	Details
Membership criteria for the IMF	Capital standards (but without restrictions on subordinated-debt/Tier 2 capital)
Bank regulations	2% subordinated debt requirement (with rules on maturities, holders, and yields) Credible, funded deposit insurance policy 20% cash reserve requirement Free entry by domestic and foreign investors into banking Bank recapitalizations permitted, but strict guidelines must be met (and must follow preestablished rules, as in preferred-stock-matching program)
Other criteria	Limits on short-term government securities issues If fixed exchange rate, 25% minimum central bank reserve requirement If fixed exchange rate, banks offer accounts in domestic and foreign currencies
IMF lending rules	Loans are provided only to members that qualify for lines of credit (those following the above rules). Loans are senior and short-term (say, for one year, with one possible rollover). The interest rate on the loan is set at 2% above the yield on sovereign debt observed one week prior to the loan request.
Other emergency lending	IMF, World Bank, Inter-American Development Bank, and others would make no additional emergency lending available. The ESP would be abolished.

## Conclusion

A global financial architecture can be defined as the set of institutions, contracts, and incentives that determine how financial risks are taken and how losses and gains from taking those risks are allocated. This paper offers an ecumenical proposal for reforming that architecture. I have followed the working assumption that there is some truth in virtually every argument that is made about the problems facing the global financial system, and have argued that it is possible to design a global safety net that properly allocates risk, eliminates (or at least substantially reduces) problems of moral hazard, and still provides protection against illiquidity problems. I have argued that the imagined system would be simple to operate, and would be more credible politically (more time consistent) than

many alternatives. It would also permit the IMF to provide elastic liquidity assistance to help members defend their exchange rates from unwarranted attacks.

The proposed changes would also avoid IMF micromanagement in the midst of crises, which has been criticized as an abuse of power (Feldstein 1998), an ineffectual means of financial-system reform, and counterproductive to the provision of rapid liquidity assistance. Focusing the IMF's mission on true liquidity assistance would transform it from an agency that balances political interests to one that solves well-defined economic problems, which would do much to rebuild the shattered reputation of the fund. Others, no doubt, will find ways to improve this proposal. By being concrete—drafting blueprints rather than only outlining broad principles—I do not mean to suggest that mine is the only imaginable way to proceed, but rather I hope to stimulate specific discussions.

These reform proposals assume that the defining objective of the IMF is to provide the global public good of liquidity at least cost. Others may wish the IMF to perform additional functions—both political and economic—including the handling of all manner of emergencies, assisting in the restructuring of sovereign debt, and managing the reform processes of emerging financial markets. Still others will think that the IMF should be a force limiting sovereign debt contracts and forcing countries to limit short-term capital flows. However, the IMF's record in debt management, and in managing reform, has been quite poor (International Financial Institutions Advisory Commission 2000; Calomiris 2000). The first step to effective IMF reform is to rein in its ambitions, and narrowly define a set of economic objectives that it can address effectively.

## Notes

1. For more details, see Calomiris (1998a) and Meltzer (1998a, b).
2. For a discussion of the responses to loss by New York banks during the Great Depression, see Calomiris and Wilson (1998).
3. For details on the moral-hazard costs of safety nets over the past two decades, see Caprio and Klingebiel (1996a, b); Lindgren, Garcia, and Seal (1996); Demirgüç-Kunt and Detragiache (1998); Calomiris (1997, 1998a); Meltzer (1998, 1999); and Kane (1998) for summary analyses; De la Caudra and Valdes (1992) on the Chilean crisis of 1982–83; De Krivoy (1995) on the Venezuelan crisis of 1991–93; and Wilson, Saunders, and Caprio (1997) on the Mexican crisis of 1994–95.
4. For details, see Calomiris (1998a) and Meltzer (1998, 1999).
5. Calomiris and Gorton (1991) review models of banking panics and provide empirical evidence on their causes. See Mishkin (1991) and Wicker (2000) for

complementary evidence. Bordo (1985), Calomiris and Schweikart (1991), Calomiris (1993, 1994), and Calomiris and Mason (1997) provide similar perspectives on the Panic of 1857, the Penn Central Crisis of 1970, historical banking panics outside the United States, and the Chicago Banking Panic of June 1932.

6. For a review of the use of short-term debt finance by the United States historically, see Calomiris (1991).

7. IMF conditionality is not always ineffectual. Banking reform is a protracted process, however, and cannot be accomplished easily through IMF pressure (see Calomiris 1998a).

8. For historical evidence supporting this view, see Calomiris (1989, 1990, 1993).

9. It is possible, of course, that government officials would use access to IMF resources for selfish purposes, and leave taxpayers to foot the bill, and it is hard to imagine IMF lending rules that could prevent this. The alleged "disappearance" of large sums of IMF assistance in Indonesia is a case in point. No seniority or penalty rule could prevent such abuse. This possibility reinforces the desirability of prequalification criteria, which constrain the potential for fraudulent abuse of borrowing by limiting prospective bailout costs.

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