

Preventing and Minimizing Crises

“Any sudden event which creates a great demand for actual cash may cause, and will tend to cause, a panic in a country where cash is much economized, and where debts payable on demand are large.”

Walter Bagehot (1873)

WHEN MAJOR FINANCIAL CRISES OCCUR, ALL who depend on financial services suffer. Depositors can lose their funds or have their accounts frozen and value eroded by inflation. Good borrowers get cut off from credit. Issuers of debt and equity finance find that markets have dried up. Pensioners may find their living standards diminished. Holders of insurance policies may find their counterparty bankrupt. And taxpayers often foot a bill that otherwise could have permitted much-needed expenditures on other items. Even those so poor that they do not use the financial services of the formal sector may find their incomes slashed in the resulting recession, and informal financial funds may dry up as well (box 2.1).

Recent decades have seen a record wave of crises: by millennium-end, there had been 112 episodes of systemic banking crises in 93 countries since the late 1970s—and 51 borderline crises were recorded in 46 countries. These crises both were more numerous and expensive, compared with those earlier in history, and their costs often devastating in developing countries.

This chapter first examines why finance is so fragile—especially in developing countries, and all the more so in banking—and it discusses the costs of financial and banking crises, and their causes. Banking crises

Recent financial crises have been more numerous and expensive than in the past

Box 2.1 Poverty and crises

WHEN CRISES OCCUR AND LENDERS BECOME MORE risk averse, small firms are the first to be rationed from access to credit, which is an important reason why small business failure rates soar during financial crises. Not surprisingly, then, poverty can rise sharply and remain high for some time following a crisis.

Number of people living in poverty

Year	Indonesia	Republic of Korea	Thailand
1990	80.9	14.7	18.4 ^a
1996	50.6	4.7	7.5
1998	—	9.1	7.6
1999	76.3	—	9.7
2000	70.3	6.0	8.7

— Not available.

Note: Figures for 2000 are estimates.

a. 1988 data.

Source: World Bank.

Even with the recovery and projected decline in poverty rates in 2001, the number of poor people is expected to return to precrisis levels only in Thailand, and remain high in Indonesia and the Republic of Korea. As serious as this impact is, the poor get hit again when the bill comes due, as loan losses sooner or later have to be covered (figure 2.1). Fiscal costs of bank insolvency, which represent injections of government funds, must be covered by tax increases, expenditure reductions, or inflation, all of which hit low-income households hard. Even if authorities attempt to put on controls to prevent capital flight, experience shows that wealthy households are best able to avoid them; middle- and low-income families' funds are then left to bear the burden of higher taxes, so income distributions usually deteriorate for at least several years after a crisis. Subsequent growth "...tends not to eliminate the higher level of inequality generated during a severe economic downturn" (Lustig 1999). Consequently, preventing financial crises is an important and potentially effective instrument to sustain growth and avoid poverty.

are the main focus, and although currency misalignment is a common element of a banking crisis, so-called twin (banking cum currency) crises are deferred until chapter 4.

How can society be provided with financial services without incurring the costs of these crashes? The incentive structure, the product of market forces interacting with the regulatory environment, is undoubtedly the key factor in the stability and functioning of the financial sector, so the second section of the chapter, Regulating Banks: Harnessing the Market, turns to reform in this area. Just as liberalization of private initiative in the financial sector and real and financial technological developments have been part of the story in the increased vulnerability of finance in recent decades, so creative initiatives to harness the private sector and technology are key to bringing the social risks of finance back under control.

A key facet of the incentive environment is the safety net provided for banks. The 20th century was marked by the rise of safety nets for the banking sector, the main components of which are the lender of last resort facility and deposit insurance. Although much has been written on the former, research on deposit insurance has been mostly theoretical and limited to the United States until recently. Given the recent expansion of explicit deposit insurance systems around the world, we then focus in the third section, Financial Sector Safety Nets, on when and how they can best be designed. An excessively generous safety net for banks—or state ownership, discussed in chapter 3—can be a key factor behind the bank dominance and the fragility in many emerging markets.

Finance is anything but static: once a set of rules is promulgated, the nature of finance makes it especially easy for participants to move their business into different forms or jurisdictions that can nullify the goals of reforms. This regulatory arbitrage will vary directly with the extent to which regulations neglect the optimizing behavior of participants. Financial systems in which incentives encourage prudent risk-taking will, other things equal, be more resilient, less a source of shocks, and therefore better able to assist in risk mitigation. And as incentive-compatible regulation is combined with an infrastructure that encourages efficient market functioning, economic growth will be stimulated by intermediaries with the incentives and wherewithal to engage in prudent risk-taking. This does not mean relying naïvely on markets to do the job, but rather shaping incentives of private agents and regularly revisiting the effects of various changes on them, what might be termed dynamic regulation. To understand better the consequences of the current regulatory environment, as well as the advantages and disadvantages of any reforms, authorities must focus on the underlying incentives.

It may be necessary to go further than setting out a program of regulatory reform and safety net issues in this area. We have to ask whether there are deeper reasons why such reform has not long since been put in place in most countries. Is it really a failure of regulatory design, or could it also reflect weakness in the political institutions? Is it in the interest of some interest groups and their political sponsors that a lax regulatory environment and a safety net with perverse incentive effects be maintained even though they increase the risk of socially costly bank failure? That issue goes beyond the scope of this chapter, and indeed beyond much research, though we return to related matters in chapter 3.

The incentive structure is key to the stability and functioning of the financial system

Why Finance Has Been So Fragile...and Remains That Way

All people are most credulous when they are most happy; and when much money has just been made, when some people are really making it, when most people think they are making it, there is a happy opportunity for ingenious mendacity. Almost everything will be believed for a little while, and long before discovery the worst and most adroit deceivers are geographically or legally beyond the reach of punishment. But the harm they have done diffuses harm, for it weakens credit still further.

Walter Bagehot (1873, p. 151)

IN PERFORMING ITS ESSENTIAL FUNCTIONS, FINANCE REGULARLY involves the exchange of money today for the promise of money in the future, usually with some form of return. This intertemporal nature, combined with well-known information problems that admit adverse selection and moral hazard behavior, is at the heart of the fragility of finance. Each party to this trade enters into the contract with expectations about a host of variables that will affect the likelihood of repayment. Expectations change, perhaps quickly, and lead to swings in asset prices, which in turn may be exacerbated by the possibility of crowd behavior.

To be sure, there is some truth in the idea that financial markets normally make a reasonably efficient use of information in the sense that it is hard for an investor consistently to earn excess returns—at least on a risk-adjusted basis—using publicly available information. Indeed, even information that is not widely available can quickly become embodied in market prices as long as there are enough well-financed, informed investors.

Although the “efficient markets” hypothesis is a useful benchmark for describing the evolution of market prices in normal times, it is hard-pressed to explain the scale of price movements in turbulent conditions. Although itself more than a fad, stock in the efficient markets hypothesis “...crashed along with the rest of the market on October 19, 1987. Its recovery has been less dramatic than that of the rest of the market” (Shleifer and Summers 1990, p. 19). Indeed, there are sound theoretical reasons why financial markets cannot be efficient and fully arbitrated if information is less than perfect and contracting is costly (Grossman and Stiglitz 1980). Substantial and even growing

The efficient market hypothesis can not explain speculative booms and busts

deviations from equilibrium prices are possible, manifesting themselves as bubbles, or speculative booms and busts. And bubbles are more likely when, as is found in experiments, individuals are not fully rational in assessing risk; excessively weight recent experience (display myopia); trade on noise rather than on fundamentals; or exhibit positive feedback (or momentum) by buying because prices are rising.¹

The “behavioral finance” view that asset markets are prone to bubbles finds confirming evidence in countless episodes of sudden asset price collapses, with greater or less involvement by the banking sector. An augmented and updated version of Kindleberger’s (1978) list (table 2.1) shows the regularity of major incidents since the 15th century, as well as the diversity of the objects of speculation. Real estate, a common stumbling block for banks in the latter half of the 20th century, has earlier antecedents in the list, but there are also many other targets from commodities—mineral, such as copper, silver, and gold, or even vegetable; to mines; all sorts of company shares, financial and nonfinancial, notably utilities such as canals and railroads; and latterly paper money and financial derivatives.

Ponzi, or pyramid, schemes, in which investors are gulled into giving funds to nefarious characters who promise impossibly high rates of return (typically rationalized through complex, apparently “fail safe” means) also illustrate the characteristic fragility of finance.² These schemes gain credibility by actually paying the promised returns to early investors out of the cash generated from later investors. Although it is doubtful that there is a country that has not seen these schemes, their occurrence in so many transition economies in the 1990s testifies to their link to opaque environments and times of structural change. In some cases, such as the Romanian pyramid of the mid-1990s, railroad traffic even in other countries was said to be affected by the rush to get to the town of Cluj, where investors could get into a scheme promising to repay 8-fold in 100 days—an annual rate of return of 250,000 percent. The scheme collapsed shortly before threatening to overtake Romanian GDP, notwithstanding the fact, relatively unique for these schemes, that there was not even a clear story of how the funds were to be invested.³ Shortly thereafter, Albania saw a series of schemes the aggregate size of whose liabilities rose to an estimated 50 percent of GDP and whose collapse led to widespread street violence and 2,000 casualties.

If finance is fragile, banking is its most fragile part, for it adds the complications, not only of maturity transformation, but of demandable

Table 2.1 Selected financial crashes (grouped by the object of speculation)

Year	Commodities	Companies	Real Estate	Banks	Financial Assets
1400				Bardi & Peruzzi (Florence), 1348	
1500	Gold (New World), 1550s			Medici (Florence), 1492	Bourse loans (Antwerp), 1557
1600	Coins in Spain, 1618	Dutch East India Co., 1636–40	Canals, elegant houses (Holland) 1636–40	Fugger (Augsburg), 1596	
1700	Tulips, 1640				
		South Seas (London), Companie d'Occident (Paris), 1720		Sword Blade (London), Banques Generale & Royale (Paris), 1720	
		British and Dutch East India Co., 1772		British country banks, 1750s	British gilts in Amsterdam 1763
		Dutch East India Co., 1783			
	Sugar, coffee, 1799	French canals, 1793		British country banks, 1793	Assignats (France), 1795
1800	Exports, 1810 and 1816		Biens Nationaux (France), 1825		
		British, French canals, 1820s	Chicago, 1830–42	British country banks, 1824	Foreign bonds, foreign mines, new companies, Britain, 1825
	Cotton in Britain, France; exports in Britain 1836	British railroads, 1836	Chicago, 1843–62		
	Sugar, coffee in Hamburg, wheat, 1857	British and French railroads, 1847	Chicago, U.S. public land, 1853–77	Germany, 1850	Foreign mines, Britain, France 1850
	Cotton, 1861	French and U.S. railroads, 1857		Overend Gurney (London), 1866; Credit Mobilier (Paris), 1867	
	Gold (New York), 1869			Germany 1870s	
	Petroleum (U.S.), 1871	U.S. railroads, 1873	Chicago, Berlin, Vienna, 1878–98		
	Copper (France), 1888; Petroleum (Russia), 1890s	Panama Canal Company, France, 1888	Argentine public lands; Chicago, 1890s	Union Generale (Paris), 1882	Foreign bonds, France; British discount houses, 1888
		U.S. railroads, 1893		Barings (London), 1890	

(table continues on following page)

Table 2.1 (*continued*)

Year	Commodities	Companies	Real Estate	Banks	Financial Assets
1900	Copper, U.S., 1907	International Mercantile Marine, 1914		Knickerbocker Trust (New York), 1907	<i>Bills of Exchange, London, 1914</i>
		General Motors, 1920	U.S. farmland, 1918–21	Creditanstalt (Austria), 1931	1920s: German reichsmark, French franc
			Florida, 1920s	500 U.S. banks, 1932–33	Mergers, U.K.; foreign bonds, new shares, N.Y.
		<i>Penn Central Railroad, 1970</i>			FDI, U.S. conglomerates, sterling, 1960s
	Oil tankers, 1974	Burmah Oil, 1974; Pertamina (Indonesia), 1975	U.S. farmland 1970s		U.S. dollar, 1973
	Gold, 1978–82	<i>Chrysler Auto, 1979</i>	U.S. Southwest, California 1970s–80s	Banco Ambrosiano (Italy), 1982	<i>LDC debt</i>
	Silver, 1980			<i>U.S. S & Ls, 1980s</i>	U.S. dollar (1985)
				Argentina, 1980–89	FDI in U.S., 1980s
				Chile 1981	Junk bonds (U.S.), 1989–90
	Coffee, cocoa etc., 1986		U.S. REITs, offices, malls, hotels; Japan, Sweden 1980s	<i>Japan, U.S. 1980s–92</i>	Japanese shares, 1980s; Vietnamese credit cooperatives
		PanAmerican Airways, 1991		Sweden 1990	Korean mergers, 1990s
		Guinness Peat Aviation, 1992		BCCI, 1991	Emerging market shares, 1990s
				Mexico 1994	Romanian, Albanian Ponzi Schemes
	Copper, Japan 1996			Barings (Singapore), 1995	Derivatives (Orange County; Metallgesellschaft, Ashanti Gold Mines), forex futures, options
		Korean Chaebols; Thailand 1997	Thailand, 1996–97	Indonesia, Republic of Korea, Malaysia, Thailand 1997–98	Russian bonds, long term capital management, 1998
					High tech stocks, U.S. dollar 1997–??

Note: Items in italics indicate government support and items in bold indicate a major crash.

Source: Kindleberger (1998); Caprio and Klingebiel (1999); authors.

**Banking is the most fragile
part of a financial
system—**

**and a limited crisis may
affect the whole banking
network through contagion**

debt, that is, offering debt finance backed by par value liabilities in the form of bank deposits. This particularly fragile structure of its liabilities may be needed to keep the bankers on their toes and to give large depositors the comfort that they can withdraw as soon as they suspect problems. Banks arose precisely to finance relatively illiquid investments with mostly short-term liabilities (and the fragility of their liability structure has been seen by some scholars as an essential part of their make-up—without which paradoxically they might not be able to function at all. Cf. Diamond and Rajan 2000; Calomiris and Kahn 1991).⁴ It also, however, makes banks—and even the whole banking system—susceptible to a sudden withdrawal of deposits. Although all outsiders will have difficulty in monitoring banks, depositors—other than the largest—are likely to be weak at monitoring and also will have an incentive to “free ride” on the monitoring efforts of others. Even if insolvent banks are the first to see a withdrawal of deposits, the contraction of lending by some banks can produce legitimate solvency concerns about others to the extent that aggregate credit shrinks. Indeed, even when banks seem to behave prudently, the bursting of asset bubbles can impair the ability of debtors to repay and induce doubts about banks’ health.

Thus, banking may be characterized by the *possibility* of contagious runs, in which a run on one bank leads to runs on other, possibly healthy, banks. In contrast, equity mutual funds, which invest in stocks and pay a return that varies with the return on their portfolio, may suffer from sharp swings in prices, but not from the possibility of contagious runs. However, contagious runs, in the sense that healthy banks are brought down by failures at weak banks, in fact are difficult to find, at least in industrial economies. Even during the U.S. Depression, Calomiris and Mason (2000) find that individual fundamentals explain the runs of 1930 and 1931, but not the 1933 episode, which they link to a generalized run from dollars because of the expectation of a devaluation. The fear of contagious runs may be more marked in emerging markets, because of greater information problems, but emerging markets also may face a greater tendency toward generalized runs, since shocks sufficiently large to change macropolicies or affect the solvency of the banking system are more common (below). And as noted below, the cost of crisis also involves the ensuing credit crunch, all the more so in economies without alternative channels of finance.

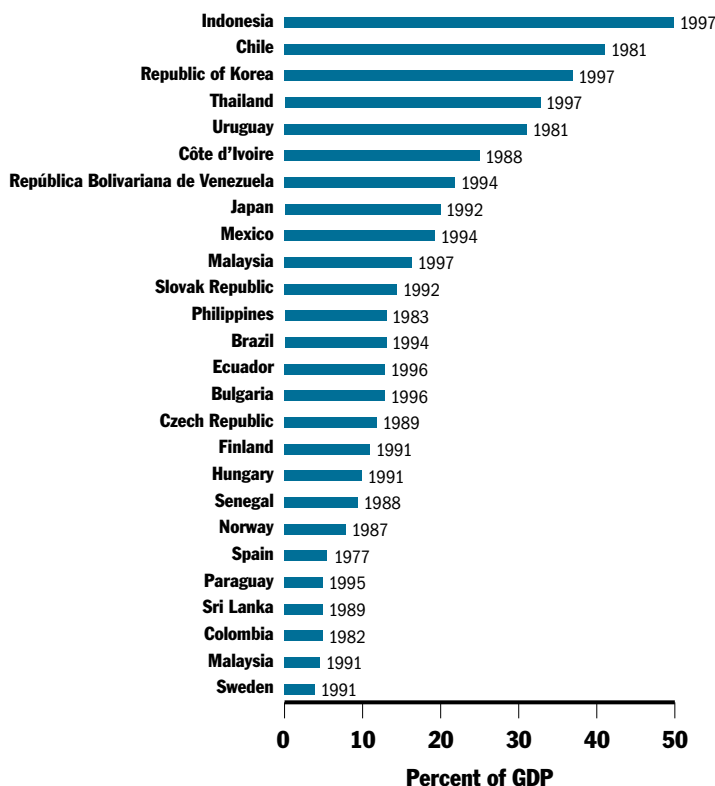
The particular fragility of finance, and within it of banking, is true for all countries regardless of their income level, as attested to by the

occurrence of banking crises in several industrial economies in the 1980s and 1990s. Banking outside the industrial world, however, is more dangerous still, where crises have been enormously costly (figure 2.1).

The cumulative losses of the failed banks are only one aspect of the cost of a banking crisis. In attempting to arrive at an estimate of the total true economic cost it is necessary to distinguish between three key components:

- The stock component is the accumulated waste of economic resources that is revealed by the insolvency. At least part of the capital deficiency of the failed banks represents depositors' funds that have been wasted in unrecoverable loans that were applied to unproductive purposes, such as empty offices and closed factories.

Figure 2.1 Total fiscal costs (increases in the stock of public debt) relative to GDP in the year of crisis



Banking crises have been costly.

Source: Honohan and Klingebiel (2000); Caprio and Klingebiel (1999).

Banking crises have real costs

- The public finance component of the true economic costs arises because of the way in which the fiscal authorities tend to assume a large part of the net capital deficiency of the banks, in order to bail out the depositors and others directly affected by the crash. From an economic cost calculation, this cash “fiscal cost” is merely a transfer to depositors, but it also entails a deadweight economic cost that could represent a sizable fraction of the amount transferred where the marginal cost of social funds is high. The point is that the expenditure cuts, additional tax revenue that will be required to finance them, and/or the inflation tax have distorting effects in themselves, especially in developing countries with weak revenue-raising systems. Thus, for example, “merely” servicing the debt incurred as a result of the Indonesian banking crisis means spending sums that could have doubled health *and* education spending. Moreover, in many emerging markets, the fiscal costs are sufficiently large to derail macroeconomic stabilization programs, with costly consequences.
- The flow component of the economic cost arises from the output slumps with which banking crises are almost always associated. This clearly represents an economic cost inasmuch as resources are underemployed until the economy picks up again. Channels through which this disruption can occur include a collapse of investment and other spending either because of a general loss of confidence, or through a restriction of access to credit (reflecting would-be borrowers being strapped for collateral; lenders’ reaction to the crisis by raising creditworthiness standards or attempts to remain liquid; or the loss of information capital, essential for making loans).⁵ Payments system failure, though rare, can be another channel for triggering recession. As well as a transitory dip in output below full employment levels, these channels can result in further loss of trend output if the lack of intermediated credit depresses long-term productivity growth.

The larger the initial capital deficiency of the failed banks, the larger the cash fiscal cost and the larger each of the components of the true economic cost is likely to be. Estimates, of varying reliability, of the cash fiscal cost have been made for many crises. Total fiscal costs in developing country crises during the 1980s and 1990s breached the \$1 trillion dollar level by 1999. These fiscal costs likely overstate the fiscal component of

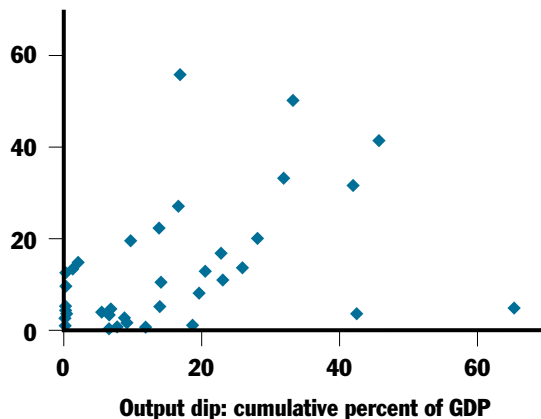
true economic costs, but may be used as a general indication of the relative and absolute magnitudes of total economic costs.

Alternatively, attempts have also been made to capture a rough estimate of the additional flow economic costs, typically by comparing actual output with some hypothetical “no crisis” output path. It is very hard, though, to guess what part of an output slump is caused by the banking crisis—often a latent banking crash only becomes evident when it is triggered by an exogenous economic shock that also directly contributed to recession. The measured output dip likely overstates the true flow economic costs, but it is correlated with measured fiscal costs, and intriguingly is of the same order of magnitude (figure 2.2).⁶ As Boyd and Smith (2000) observe, many crises, though serious at the time, have a small fiscal cost and a relatively low output cost. In figure 2.2, however, about one crisis in three has a cumulative GDP cost of 20 percent or more, and given the uncertainty in times of crises, authorities cannot know whether they will have a small or a large crisis. Given the depth of the recessions, the proverb that an ounce of prevention is worth a pound of cure seems applicable.

Developing countries suffer several additional sources of fragility. First, information problems in general are more pronounced, as noted in the

Figure 2.2 Estimates of fiscal cost of and output dip for 39 banking crises

Fiscal cost (percent of GDP)



**Fiscal and output costs
generally go hand in hand.**

Note: The chart shows that the fiscal cost of crises is correlated with the subsequent output dip (measured as the total output loss—relative to trend—over the period during which growth remained below precrisis rates).

Source: Honohan and Klingebiel (2000).

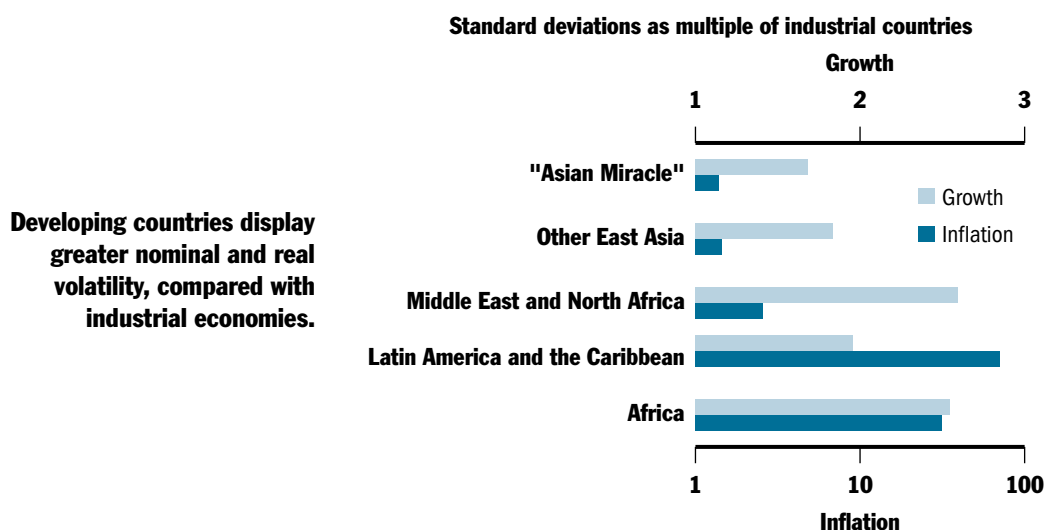
**Structural issues can
make emerging markets
more vulnerable to
financial crises—**

discussion in chapter 1 on the accounting and legal systems. This information problem has to be addressed in any recommendations on lessening vulnerability. Poor information makes it easier for banks not just to take risks unwisely, but also to engage in deliberate related lending, which according to both anecdotal evidence and now empirical research (La Porta, López-de-Silanes, and Zamarripa 2000) is characterized by much higher nonrepayment rates.

Second, developing economies are smaller and more concentrated in certain economic sectors or reliant on particular export products, and accordingly, they are less able to absorb or pool isolated shocks. This in part explains the greater macroeconomic volatility displayed by developing economies in different parts of the world in comparison with the industrial countries (figure 2.3).

Since the portfolios of most financial intermediaries in emerging markets are overwhelmingly concentrated in domestic assets, shocks to the local economy would be more destabilizing even with the best regulation and supervision (chapter 4 will delve into possibilities of importing financial services as a way to lessen this vulnerability). As suggested below, regulation and supervision, with some notable exceptions, are not the strongest there.

Figure 2.3 Volatility by region, 1970–99

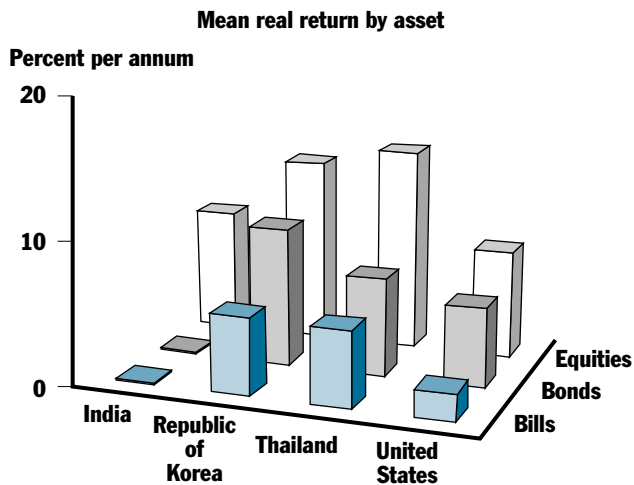


Note: The median of the historical standard deviations of GDP growth and inflation for each group of countries is expressed as a multiple of that for industrialized countries.

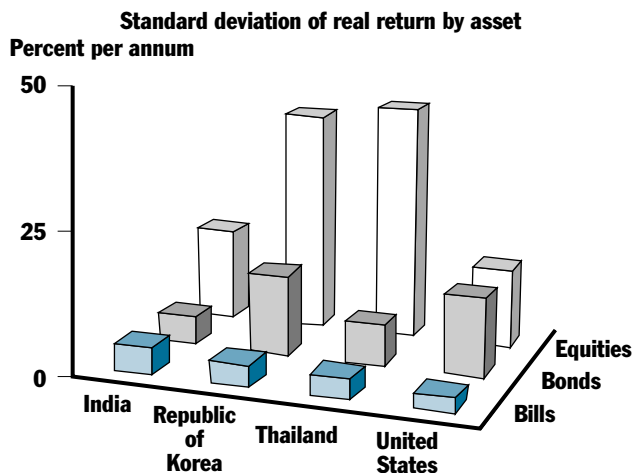
Source: Caprio and Honohan (1999); *International Financial Statistics*.

Not surprisingly, greater economic volatility translates into financial markets. Although based on just a few cases with a long availability of data, figure 2.4 shows not only that equities enjoy a far higher return than either bills or even bonds in emerging markets relative to that in high-income countries, but the differences in volatility are even more dramatic. Given their greater volatility, then, even if local banks diversified in emerging markets, or were equally well regulated, they would enjoy much less stability than banks in the safer haven of most high-income countries. Exchange rate volatility also has had marked consequences in developing economies

Figure 2.4 Volatility in asset markets



Stocks can pay better in emerging markets...



...but are riskier still.

Source: *International Financial Statistics*; IFC Emerging Markets database; available data, 1975–99.

**—including the domination
of banks in the financial
systems—**

because they largely have had to borrow in foreign exchange. Thus, increases in dollar interest rates often induce a larger increase in domestic lending rates, to the extent that the currency risk premium rises. This additional volatility affects firms and their financiers. Chapter 4 will return to this theme of volatility and small financial systems.

Third, emerging financial markets are dominated by banks (figure 3 in the overview), meaning more demandable debt, higher debt-to-equity ratios, possibly inducing greater fragility. If a firm is 100 percent financed by debt, then even a small shock that reduces its projected revenues or raises its interest cost can result in the firm's becoming insolvent. Equity acts like a buffer, providing the firm with greater flexibility in comparison with the need to service fixed debt repayments. High debt-to-equity ratios were found to be a factor in the East Asian crises; although these ratios did not in general increase in the immediate run-up to the crisis, their high level meant that the firms and the economy were highly fragile (Claessens, Djankov, and Xu 2000).

Similarly, if firms can only obtain financing that has to be renewed frequently—every 90 days or more often—they are in a less flexible position to deal with unanticipated shocks, compared to those with a higher mix of long-term debt. Thus, the relative underdevelopment of non-bank finance and capital markets means that when developing country banks get into difficulty, the impact on the entire financial sector and the economy is greater than in industrial countries, where nonbank intermediaries and markets are generally better developed. More financing through equity-type instruments transfers the risk to those more willing and able to accept it. Availability of equity finance thus represents an important potential buffer for the finance of firms, and indirectly for their bankers. The equity market can be seen as a spare tire for finance (Greenspan 1999). Collapses in equity prices are not innocuous, but are clearly less disruptive than bank failures—which is why this chapter focuses on the latter.

Unbalanced financial systems with bank dominance are in part a response to the greater information problems in developing markets—hence the importance of improving this part of the sector's infrastructure (chapter 1)—but also likely reflect excessive “subsidization” of banking through the safety net (described below) or state ownership, which provides an implicit safety net for all bank creditors. State ownership itself appears linked to fragility (chapter 3).

Fourth, in addition to short-term volatility, there have been a succession of regime shifts altering the risk profile of the operating environment in hard-to-evaluate ways, including most prominently financial deregulation. In line with prevailing intellectual trends and following the example of industrial countries, emerging market authorities removed or eased administrative controls on interest rates, bank-by-bank credit ceilings, rules for the allocation of credit to preferred sectors or borrowers, limits on new entry, and even opening the capital account. Dismantling many old controls would ultimately have become inevitable, but academics, advisers, and policy officials alike failed to realize the complexity of the task they had undertaken.

The enthusiasm with which liberalization was adopted in some countries in the absence of necessary institutional underpinnings left financial systems facing largely uncharted territory. New owners and inexperienced bank supervisors tried to feel their way to an assessment of what safe-and-sound banking would mean in practice. At a minimum, this situation suggests a fifth factor behind emerging market crises, namely a regulatory and incentive environment ill prepared for a market-based financial system, and in particular one that encouraged or condoned excessive risk-taking.

Poor sequencing of financial liberalization in a poorly prepared environment has undoubtedly contributed to bank insolvency. Countries abandoned controls on bank liabilities—notably interest rates—but the time to create and implement oversight of assets was greatly underestimated. Only if institutional underpinnings are strong is financial liberalization unlikely to add to the risk of systemic bank failures (Demirgüç-Kunt and Detragiache 1999). It would be misleading, however, to conclude that greater reliance on market forces was always the underlying source of bank failure. In many cases, financial liberalization has revealed a long-standing underlying insolvency of the banking system, which became unavoidably clear as the banks emerged from the sheltered environment that allowed or required them to cross-subsidize loss-making lines of business.

Authorities did not liberalize finance in a vacuum, but rather as part of a general move away from heavier government intervention. The structural economic transformation in many transitional and developing countries created a new economic and political landscape and placed bankers in a brave new world with a shortage of skills and experience for judging

—and the poor sequencing of financial liberalization

the level of risk. With all these changes, in addition to those entailed by the revolution in technology, communications, and financial engineering, plus the seemingly fickle behavior of international investors, it is hard for bankers, governments, and regulators to judge what sources of volatility are likely to be important, and thus what constitutes sound banking.

These factors behind emerging market crises suggest first that, while moving in the direction of the market-based regulatory framework may help, the special factors that characterize these economies necessitate even more robust measures.

Regulating Banks: Harnessing the Market

**Prudential regulation
promotes systemic stability**

FOR AS LONG AS THERE HAVE BEEN BANKS, THERE ALSO HAVE been governments setting a number of rules for them, such as maintaining the purity of coinage and regulating exchange at medieval fairs, holding high, even 100 percent reserves (in 16th century Europe and later in U.S. banks), maintaining interest rates below usurious levels, and providing credit to the ruler, especially in times of war. Modern financial regulation includes an array of instruments designed to improve the informational efficiency of financial markets, protect consumers against fraud and malfeasance, and preserve systemic stability.⁷ Prudential regulation promotes systemic stability. Whether or not there is a deposit insurance scheme, the official prudential supervisors in effect act as delegated monitors for depositors, exploiting economies of scale to overcome information problems that would be beyond the resources of small depositors.

**Narrow banking could
throw the baby
(intermediation) out with
the bathwater (crisis)**

Many proposed rules for reducing banking risk look promising at first sight, but prove to have serious drawbacks and can only be recommended, if at all, where all else has failed. One recurring example is the idea of narrow banking, a proposal with a lengthy history (box 2.2). It amounts to saying that, given the particular fragility of the liability structure of banking, why not make banks safe by forcing them to hold safe assets? As with many recommendations for finance, so-called narrow banking plans may fit some countries, such as those that, following a crisis, have banks with balance sheets dominated by government paper. Although these plans in general have merit, they do not address the need for intermediaries to intermediate risk, the act of which can create a problem when it goes wrong, but which can be an enormous benefit to growth when done well. If narrow banks hold

Box 2.2 Narrow banking

BANKS THAT TAKE DEPOSITS AND DO NOT MAKE loans are not new, (and) with the original goldsmiths—those who guarded depositors' gold—being the earliest example of “100 percent reserve” banks. As bankers learned that not all depositors wanted their funds returned simultaneously, they began to lend out part, embarking on fractional reserve banking, but a number of countries had or still have banks that mainly hold safe instruments. In 1864 the U.S. National Bank Act required note-issuing banks to hold \$111.11 in government bonds for every \$100 of notes issued, and this system remained in force until the 1930s. Similarly, postal savings banks in many now industrial economies and some ordinary saving institutions (such as in France and the United Kingdom) required that deposits be invested in government paper. In these cases, however, 100 percent reserve banks were only part of the banking sector, and other banks would take deposits and make loans.

The Depression in the United States and in particular the extreme panic in early 1933, culminating in the banking holiday of March 1933, led to proposals by Henry Simons and a number of other prestigious economists for a 100 percent reserve banking plan as the model for the country. Banking problems regularly unearth new interest in this proposal, as seen during the U.S. Savings and Loan crisis and in Argentina in the 1995 crisis.

The basic plan is simple: if all banks hold only deposits backed by high-grade instruments, such as short-term treasury bills, perhaps even quite high-grade commercial paper, the payments mechanism will be protected (except from a run on the currency, which

can be averted only if sufficient reserves are denominated in foreign currency). As is the case with U.S. money market mutual funds, failure can only occur because of fraud, which is relatively unlikely in this context. Other financial intermediaries, or the non-bank subsidiary of a financial conglomerate, according to these plans, would be allowed to lend, but they could not call themselves banks, and they would not be eligible for any deposit insurance. Thus, the goal is to attempt to convince depositors that if they want a guaranteed return, it will be a low one, and that funds placed in risky investments can be lost.

The history of finance suggests that plans would be evaded. Thus, the U.S. National Bank Act was made less effective as banks began to issue liabilities that were not reservable, and therefore yielded proceeds that could be lent out profitably. Also, plans to encourage excessively easy financing of government deficits could encourage excessive borrowing, in particular in countries with inadequate fiscal controls and established checks and balances in government. Transition to narrow banking could be tricky and, as noted in the text, the fundamental problem of intermediation would remain.

Still, narrow banking might be suitable for some countries as part of crisis response. For example, in countries where all or most of the banks have had large parts of their assets replaced with government funds, these banks already are virtually narrow banks, and a separate institution could be licensed to make loans. Some regulations would be needed to encourage transparency of the nonbanks, and an education campaign would be required to ensure that depositors were aware of their exposures.

Source: Phillips (1995).

safe assets, but other intermediaries finance risky investment, the latter will pay higher interest rates, and if the history of finance is any guide, almost certainly attract many depositors, eventually make losses, and eventually mount lobbies for government protection.

Thus, for most countries, it seems safe to assume that narrow banking will not solve the fragility problem. Moreover, there may well be a tradeoff between stability and efficiency. If the formation of narrow banks did not lead to a large migration of assets to nonbank intermediaries, the allocation of resources to efficient investments might be seriously impeded. Although banking has declined some in relative importance in advanced countries, it remains significant and in developing countries is the dominant portion of the financial sector.

Although small investors can suffer losses in nonbank finance, too, (and official safety nets are sometimes provided to consumers in segments of the insurance and pension fund industries), failures and losses in financial markets that do not extend to the banking system are much less likely to have catastrophic systemic effects on the payments and credit system.⁸ For this reason, nonbank financial intermediaries and markets are also objects of generally lighter government regulation—from the greater oversight in pensions and insurance to less oversight in stocks, futures, and derivatives markets.

The transition to modern prudential regulation is difficult

Financial sector regulation and supervision—the rules of the game in the financial sector and the way they are enforced—are essential to limit moral hazard, as well as to ensure that intermediaries have the incentive to allocate resources and perform their other functions prudently. In the 1980s and 1990s, many developing countries began making the transition away from supervisory systems aimed at ensuring compliance with government directives, such as directed credit guidelines and other portfolio requirements and toward what might be called the basic Basel standard, which is one of supervised capital adequacy. As noted earlier, this transition has not gone smoothly, and evidence suggests that liberalization, at least as conducted, even contributed to the recent spate of banking crises.⁹

Authorities should use incentives to harness market forces

In response to these crises, there has been a boom in the creation of detailed standards that are being promulgated in banking (and other areas of the financial sector). These standards may ultimately induce improvements in the regulatory environment, but the absence of a clear sense of their relative importance or how they function in the disparate institutional contexts found in emerging markets reduces their impact. The outcome of research on financial systems, on the other hand, suggests that, rather than a large number of standards, authorities in emerging markets should focus on using incentives to harness market forces that favor effective and efficient financial markets, and employ individual standards in so far as they contribute to this purpose. To some extent, this means imposing tough rules—not only requiring minimum

capital ratios, but perhaps more robust restraints, such as minimum diversification guidelines (or tailoring capital requirements to the concentration in banks' portfolios) or requiring a certain proportion of the bank's liabilities to be in the form of uninsured subordinated bonds. The degree to which the authorities can use such rules to exploit market information and market discipline depends to some extent on the level of overall financial market development.¹⁰ This section examines the extent of regulatory convergence between developed and emerging markets, including the problems of applying regulatory choices in the former to the latter, and then focuses on how the market can best be harnessed to help produce safe and sound finance.

Although there has been a remarkable convergence on paper in recent years, stark differences remain in the regulatory environments around the world. Thus, at the time of the 1988 Basel Accord, which recommended a minimum risk weighted capital adequacy ratio of 8 percent, some developing countries did not even have capital requirements, and many that did had low ratios (2–5 percent not being uncommon) and did not engage in prudential supervision to verify them. By 1998–99, of 103 countries reporting, only 7 had minimum capital ratios under 8 percent, and 29 had minimum capital ratios of 10 percent or more, only one of which was from the OECD region. And more than 93 percent of all countries (88 percent in emerging markets) claim to adjust capital ratios for risk in line with Basel guidelines.

It is easier, however, to adopt “headline” regulations, such as capital adequacy ratios, but more difficult to implement the underlying procedures and to acquire the necessary supervisory skills to give teeth to these rules. Unfortunately, capital by itself is an inadequate indicator of the health of a bank. The true net worth of a bank depends on the quality of its portfolio which, for many banks, is dominated by illiquid loans that cannot easily be valued or “marked to market.” This problem is all the more real in developing countries, where volatile prices and thin or non-existent markets render such estimates hazardous. All too often a bank is truly insolvent long before its accounts tell us so. If capital is actually negative, risk adjustment is irrelevant.

What matters for true net worth is capital net of provisions for loan losses, but accounting rules in many countries permit bankers to be optimistic and underprovision. If the bank has reached a reasonable *measured* capital adequacy ratio only because it made no provisions against loan loss ($P = 0$ in Table 2.2), we can safely say that its true capital is below standard. Even an insolvent bank (with a true P of 10

A convergence of headline regulations—

but wide disparities in their effective enforcement—

notably the accounting for loan loss provisions

Table 2.2 Typical balance sheet

Assets		Liabilities	
Cash	10	Demand deposits	100
Liquid investments	20	Other debt	30
Loans at historical value	100		
Less provision for loan losses	$-P$		
Property	10	Capital	$10-P$

or more) can remain in business for months or even years, provided it does not run out of cash. As long as the net inflow of deposits and the interest received on performing loans are sufficient to pay operating expenses and interest on deposits, closure can be deferred. Depositors and supervisors may be lulled into a false sense of security if accounting rules are flouted. Accounting rules in some countries still have some way to catch up.

Rather than rely on historic values, bank supervisors classify loans into forward-looking categories, such as “normal,” “specially mentioned,” “substandard,” “doubtful,” and “loss,” and regulations implicitly attach loss probabilities to each of the last three categories by requiring a certain percentage (typically 20, 50, and 100, respectively) of the value of loans to be provisioned in the bank’s accounts (usually in addition to some general loan-loss provision of 1 or 2 percent of the entire portfolio). Indeed, here too our survey shows that requirements are on average slightly tougher on paper in low-income countries. What is important here, though, is that the provisioning requirements should actually correspond to subsequent loan-loss experience.¹¹

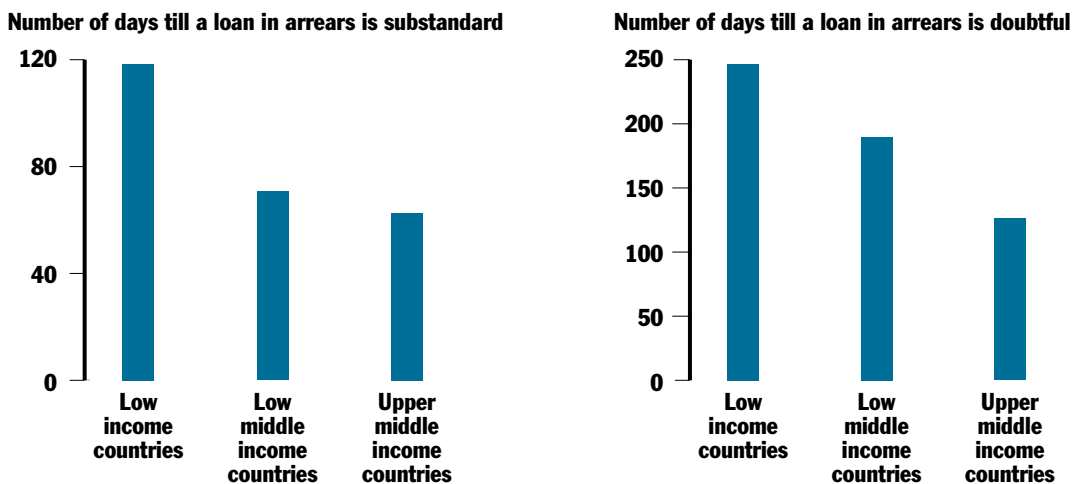
Unfortunately, ensuring adequate, forward-looking classification of loans is not straightforward. Especially when economic conditions move out of the normal, or for the large or unusual loans that are often the weak point of a reckless bank, experience may be a poor guide, even to the banker. The high-risk environment and rapidly evolving economic structure of most developing countries obviously exacerbate the severity of this problem. Realistically, in the face of resistant bank management, given the inherent difficulty in understanding the true risks, supervisors often can do little more than rely on a backward-looking measure: insisting on provisions being made when the loan goes into arrears. In this

respect, the accounting rules or standards vary widely. In particular, low-income countries typically are more lenient than the upper-middle-income group (figure 2.5). Also telling is that one in three low-income countries allow banks to treat interest that is in arrears as earned income, at least for a time. In Thailand interest accrual on nonperforming loans was allowed for up to 360 days in 1997 and for 180 days in many African countries. In most countries it is still more difficult to prevent a bank from concealing a nonperforming loan simply by “evergreening,” that is, by making a new loan to cover the repayment. Most tellingly, Cavallo and Majnoni (2001) show that whereas industrial countries build up provisions in good times and draw them down as the business cycle weakens, there was no such variation in the developing countries in their sample, again suggestive that convergence to industrial country norms is more superficial than real.

In sum, measuring the size of the buffer is a challenge that is far from being under control. Although not published, the Basel Core Principle assessments are understood to be revealing that developing countries are considerably further from full compliance than their industrial country counterparts. Headline regulations are promulgated without having the information needed for verification or without putting in place the incentives that might help reveal it.

Less rigorous loan classification standards apply in lower income countries.

Figure 2.5 Classification of substandard loans, 1997



Source: Barth, Caprio, and Levine database.

**Good supervision can
improve the health of the
financial system—**

One should not be dismissive of the ability of official supervisors to uncover problems. Empirical evidence exists that they can and do provide independent information. For example, Jordan, Peek, and Rosengren (1999) found for the United States that the release of adverse supervisory information resulted on average in a 5 percent decrease in the bank's stock price, suggesting that the release did contain news. Not surprisingly, there was some variation. Banks that had already disclosed bad news saw little effect, and there was little evidence of contagion, in the sense of other banks' stock prices reacting when another bank disclosed information, except in the case of a common, regional shock for banks in the same region.

This evidence shows not only that good supervision can have an effect in that it does reveal additional information and can lead to the issuance of supervisory actions designed to stop imprudent behavior. It also points to the advantages of greater disclosure in that markets can pressure banks to adjust as soon as possible and before a crisis results.

How does one get good supervision? The Basel Committee guidelines provide supervisors' views on this, and there is little doubt that factors such as the independence of the supervisory agency are key to good supervision.¹² Here we note the issues related to the incentives that supervisors face.

It must be recognized that the environment in which prudential regulation and supervision is being conducted differs markedly between industrial and developing countries. In addition to the greater volatility of emerging markets, income and wealth tend to be much more highly concentrated than in industrial countries, and recent evidence shows that this holds for the ownership of corporations as well (figure 1.10). It is not hard to see that this adds to the challenges faced by supervisors, by increasing the likelihood that the financial firms under their supervision are controlled by extremely powerful individuals.

**but incentive structures
often make this difficult**

The result can be a skewing of the "balance of terror"—the risks and rewards faced by official supervisors in many countries. First, supervisors generally are paid less well relative to salaries in private banks, and in many developing countries turnover is becoming even more of a problem than in industrial countries. Second, deferred income—a potential bonus, in effect—can result from lax supervision, since only a few countries, regardless of income level, have prohibitions on supervisors moving to work for banks. Third, there is no deferred penalty—neither through a loss of bonuses, which generally are not offered—nor by a forfeiting of pensions. And last, in several countries

well into the middle-income range, such as Argentina and the Philippines, supervisors can be sued for their actions and be held personally liable, so they face a very real penalty now for vigorous action.

This is precisely the opposite of the optimal compensation structure for those charged with enforcing laws and regulations that has long been recommended for eliminating malfeasance even when it is difficult to detect bad conduct.¹³ So, a priority for securing better supervision is to pay bank supervisors well, even by reference to other public servants: the probability of detection of malfeasance is low and, as seen in figure 2.1 above, the cost of laxity on their part is high. Given that it may take some time for supervisory laxity to be evinced, deferred compensation would be the best way to motivate supervisors. Thus, providing them with a generous pension as a deferred bonus, and then removing or reducing that pension for violations of good supervisory practice will help improve incentives. In addition to the common view that supervisory agencies require a high degree of independence to reduce political interference, if supervisors were simultaneously protected against private actions taken against them personally (as in many industrial countries), more countries would be able to benefit from more vigorous enforcement.

Transparency and accountability alone are not sufficient for better supervision. This approach may be sufficient, for example, to ensure that central bank governors behave responsibly in setting monetary policy, because exchange rate and/or bond markets provide a ready assessment of their actions. Also, most central bank governors do not face lawsuits for tightening policy, nor are they rewarded in the future for lax policy. Although the reaction to the U.S. savings and loan problems was to reduce supervisory discretion—through mandatory, prompt, corrective actions—the growing difficulty because of the plethora of financial instruments in observing the risk position of banks is leading to more discretion for supervisors, for example, by having them agree with banks on how they model risk and then penalizing them for violating the model. This is not an easy area to monitor. To the extent that developing country supervisors move in the same direction, it will be particularly important that greater discretion is accompanied by greater oversight *and* a corrected balance of terror.

Although it is necessary in many countries to improve supervisory compensation, it is both unlikely and costly to pay supervisors salaries that are equivalent to senior bank officers. Forcing greater revelation of information is the standard way to limit the required increase in the

Correct the “balance of terror” —

**—and supplement official
supervision with market-
based monitors**

efficiency wage, so something like the above subordinated debt proposal is especially important to force greater disclosure of market information and sentiment.

Although the financial conditions of banks are difficult to assess even in industrial countries, the above suggests that it is especially risky in emerging markets to put excessive reliance on official supervision. The recurrence of fraud, defalcations, and crises demonstrates that the information and incentive problems that dominate finance are not easily eliminated. Moreover, differences in institutional development and economic volatility, combined with the ability of financial market participants to adjust to regulation, mean that rather than precise forms or rules, authorities need a strategy for approaching financial sector regulation, and the strategy has to go considerably beyond convergence to industrial country norms.

With greater income and ownership concentration, it is more difficult to maintain adequate independence of supervisory agencies. Also, the information environment, the degree of public oversight of supervisors (not just disclosure, but the degree of sophistication of the press on financial matters), and the basic incentives that supervisors confront all will operate to yield less effective supervision. Political interference in bank supervision has happened even with good checks and balances, such as in the United States as savings and loans had members of Congress lobby for lighter regulation and reduce regulatory capital requirements. These potential problems are likely to be more pronounced where ownership concentration is greater (for example, the República Bolivariana de Venezuela in the early 1990s, in which a senior central bank official owned shares in a bank).

Besides, just as authorities in developing countries were making the transition to supervised capital adequacy, the goal posts were moving. First, the complexity of modern finance has amplified the difficulty of supervising on a transaction-by-transaction basis. In part, with the growth of derivative instruments, banks can now shift their exposure within minutes, so that reviews of their current exposures convey less information as to their health than they would have previously. As already mentioned, this has led middle- and upper-income countries, where such instruments are more prevalent, to shift the focus of supervision to the bank's risk management systems, though experience with this approach is still limited.

Second, as noted above, banks are adept at adjusting to a set of rules. The arbitrary risk weights of the 1988 Basel Accord were easy to evade,

and indeed sparked a decade of financial innovation at least in part with this purpose in mind.

The answer from recent and historical research on financial systems is remarkably clear, though as just seen, not always as simple as it appears: use incentives and information to maximize the number of well-informed, well-motivated monitors of financial intermediaries.

Understandably, diversity in the set of monitors for banks is desirable not only because of possible differences in the information they may possess, but also reflecting the varying and possibly opaque incentives they face. Who else, though, apart from official supervisors, can monitor banks? Three classes of monitors should be considered:

- Insiders, including the owners, the board, and senior management of a bank, whose net worth should, in an ideal world, depend on the prudent performance of the institution.
- Rating agencies.
- Markets, meaning all nonofficial outside creditors and counterparties.

Owners earn returns on the capital they have invested. These rewards will be based on current and expected future profits, or the so-called franchise value. Profits in turn will derive from the regulatory framework that constrains banks to various activities and ways of doing business. If the profits from prudent banking are high, and if the threat that banks could lose their bank license (and thus their equity and the related rewards) is real, owners will be motivated to preserve their franchise value. Majority owners and senior managers may be in the best position to surmount information problems, but as numerous bank failures show, such as the famous 1995 Barings episode, owners of large, complicated intermediaries still face these problems. Minority owners do not necessarily have any better information than the general public.

Bank directors have the responsibility of representing all owners, and of disclosing accurate and timely information on their institution. Better and more timely information will improve the ability of all outsiders to monitor them. Most countries in theory make bank directors responsible for accurate disclosure, but only a third (most of which are in high-income economies) have enforced penalties. Enforcement is critical. Stiff penalties for inadequate disclosure, and more generally for excessive risk-taking, is a way of increasing the liability of owners beyond just the capital they have invested for the performance of the bank.

Use the private sector to extend the reach of the regulator

Banks often reward risk-taking

If bank directors and majority owners were highly motivated to engage only in safe and sound banking, they would likely endeavor to effect a compensation system for senior bank management that would reward prudence. However, the fallout from the Long Term Capital Management (LTCM) fiasco revealed that senior executives of a few large international banks were forced out—the good news—for making similar bets as LTCM, but—the bad news—they were able to take multimillion-dollar bonuses with them. In all likelihood, this reflects the predominance of banks that are willing to gamble and hence offer compensation packages that attract risk takers.¹⁴ Authorities could try to correct for this market failure by making capital ratios or deposit insurance premia a function of the compensation structure for senior management. Supervisors in many advanced economies do look at risk management systems that banks have and grade them on this effort. The suggestion here is that the source of the risk management system, executive compensation, rather than its advertised manifestation, be factored in to regulation. The compensation structure also should be disclosed—not just the raw salary, but how bonuses and other forms of compensation are determined (John, Saunders, and Senbet 2000).

One recent proposal for bringing the views of private market participants on bank risk to bear was advanced in 1999 and 2001 Basel Committee discussion papers seeking to reduce the arbitrariness of the risk weights attached to bank capital requirements by proposing that the weights instead be derived from ratings publicized by approved external credit assessors (for example, rating agencies). Although this proposal would appear to be an attempt to “harness the market,” it is instructive to consider several problems facing implementation of this proposal, especially in developing countries. Among the better known difficulties are the following:

- It is unclear how reliable rating agencies would be where information costs are high, the ratings industry is at best nascent, and where banks often pay for their own ratings.
- Ratings are based on expected default rates, but capital is intended for unexpected losses.

The problems with rating agencies

In addition, however, are a number of less-recognized points that are highlighted by a focus on incentives (Honohan 2001b). First, the usual moral hazard problem will be exacerbated. If it is announced that banks will have to hold capital in accordance with the riskiness of their portfolio, each borrower will have the incentive to secure a favorable rating, even though it continues to place the bank—and the deposit insurance

fund, if one exists—at risk. Bankers, assuming that they have decided to make the loan, will be motivated to collude or go along with a favorable depiction of their borrowers, because it will give them greater freedom in making capital decisions.

Second, raters may release less information about borrowers so as not to lose business. And most serious of all, rating agencies are not paid to anticipate the risk of correlated, systemic shocks, so even if the average rating of a borrower is accurate for normal times, it will not be for a crisis. This problem is especially serious as *developing country authorities may believe that by using (“market based”) ratings, they are protected against crises, when in fact they are not.* Even though rating agencies in the United States do a fair job on individual firm ratings, their ratings perform less well on emerging market paper precisely because it is difficult to estimate systemic shocks in small, volatile economies.

Thus, it is important for authorities to use market forces, but this discussion illustrates that it is equally important to understand what the incentives are and how they operate. Also, rather than worry about how to motivate rating agencies to take proper account of correlated factors, authorities should focus on banks, which can and should be looking at their entire portfolio and how it varies or is exposed to different risks. Compelling banks to disclose certain information can be part of this process so that agents external to the bank *who have the right incentives* will put this information to good use. Relying on rating agencies puts excessive burden on entities that may not have as much to lose as bank creditors do.

Given the incentive that equity holders and other insiders may have to increase risk, and the uncertainties of relying on rating agencies, it is all the more important to consider how the incentives of other bank creditors can be aligned with the social goal of limiting bank risk. Although small depositors may choose to “free ride” on other claimants, large creditors, *if they have no expectation that they will be compensated for their losses*, have clear incentives to monitor banks. Recent proposals attempt to capitalize on this incentive by forcing banks to issue subordinated debt, that is, a fixed claim that is only senior to equity. Not enjoying the upside gains of equity holders, but holding almost as much of the downside risk, subordinated debt holders would be highly motivated to police banks for excessive risk-taking. Also, they would not bother with a “loan-by-loan” analysis that is part of the current Basel Committee process, but rather be concerned with the overall risk that banks face. Other large creditors—such as other banks in interbank markets—would also be motivated to monitor banks as well, as long as

Outside creditors can act as monitors—

—and a subordinated debt requirement is a promising, but not fool-proof, way to improve market monitoring

they were not under the presumption that they might be “bailed out” if the bank got into difficulties.

Subordinated debt is not new—as of 2000, 92 of 106 countries responding note that they allow subordinated debt to fulfill some part of their capital requirement. However, those countries in compliance with the Basel Committee guidelines in effect regard it as cheap equity, and to that extent only make eligible long-term debt, and then limit the use of such debt. This, however, ensures that rollovers of the debt will be relatively rare. Also, the fact that it is not required to be issued and is not policed then leads to its issuance to firms that are not at arm’s length. Yet regular issuance, tradability, and arm’s-length issuance all are needed to ensure better monitoring. To prevent this debt from becoming a kind of “junk bond,” it will be necessary to put some cap on the interest rate that can be paid. If these features are present, subordinated debt holders will be even more concerned to avoid a bank that is taking imprudent risks than at present. Far from being cheap equity, this kind of subordinated debt can be a valuable discipline. There is much to be said for requiring its issuance, especially for larger banks in each country. To provide reliable monitoring, subordinated debt holders would become an important lobby group to press for a number of the improvements to infrastructure and information noted earlier, particularly related to the disclosure of information.

To be sure, subordinated debt proposals (box 2.3) can be quite difficult to implement. Capital markets in developing countries are thin, though a requirement that banks issue this debt would deepen them somewhat. Most importantly, a key to its success is to ensure that the issuers are truly at arm’s length from the holders of the debt, meaning that they neither should be related parties, nor should the issuer be allowed to provide comfort or guarantees to the holders. Ensuring this is not a trivial concern, and is an excellent reason for not relying exclusively on subordinated debt holders to ensure safety and soundness. Greater reliance on subordinated debt and on other uninsured creditors’ monitoring, however, seems to be a worthwhile initiative in middle-income countries.

Notwithstanding the difficulty of ensuring arm’s length between banks and the holders of subordinated debt, early results from Argentina are promising. Even though subordinated debt only began to be required there in 1998, and though its implementation was delayed by the East Asian crisis, banks that were largely compliant saw lower deposit rates,

Box 2.3 Subordinated debt proposals

SUBORDINATED DEBT CAN SERVE AS A BUFFER TO absorb losses, but probably its most valuable contribution is by the signal it can provide as to bank riskiness. This signal both will serve as a discipline in the market, as banks find it harder to renew their subordinated debt or find the interest rate thereon rising as risk increases, but also by the indirect signal it provides to others, including bank supervisors. The latter benefit could be great. One problem with so-called prompt, corrective action proposals is that the criteria for intervention still leave significant responsibility to supervisors, which may be particularly difficult in countries in which the institutional independence of the supervisory agency is in doubt. A recent study of the Board of Governors of the Federal Reserve System (1999) noted that one difficulty for official supervisors—the burden to prove that banks may be taking excessive risks—does not hold for subordinated debt holders, who instead get to place the burden of proof on bank managers who need funding. Supervisors could use either the interest rates or ability to issue subordinated debt as a signal to increase monitoring of risky banks or to take mandated actions, or both.

How should it be issued? A requirement that banks issue this debt regularly in ‘lumpy’ and relatively homogeneous forms would produce a well-informed monitoring system for banks; the regular issuance would continually “refresh” market information, in that banks would presumably find it advantageous, and markets likely require, current information at the time of issuance. If the subordinated debt instrument is relatively homogeneous, then the rate at which it trades could be more easily compared across banks, thereby facilitating monitoring.

In addition to tradability, maturity matters, and the balance of opinion appears to be weighted to the medium term of 2–5 years. While Federal Reserve System interviews with U.S. market participants suggested that market depth would be greater with 3–5 year maturity, Calomiris has proposed for emerging markets as well that banks be required to issue 2 percent of their nonreserve assets (or 2 percent of risk-weighted assets) on a monthly basis with 2-year maturity, so that every month they would have to refinance 1/24th of this debt. Calomiris (1999) also notes that banks in trouble could pay higher interest rates, but he would limit this by imposing an interest rate cap. That would mean that highly risky banks would be forced to shrink the asset side of their balance sheet and eventually close or otherwise restructure their operations when they could not comply with the subordinated debt requirement.

Whereas regular issuance would impose discipline on issuers, there is a tradeoff between this gain and the cost to banks—and their customers—from more frequent and smaller issues, because of transaction costs. Indeed, very small banks in emerging markets likely could not pay these costs, so Calomiris has recommended that small banks be allowed to satisfy a subordinated debt requirement by “issuing” large deposits to a qualified institution. Because it is the larger banks whose stability is essential for the health of the overall system, and for which early intervention is important, this limitation is not likely to be severe. Last, to increase the likelihood that subordinate debt holders will be at arm’s length from the issuing banks, it may be necessary to put restrictions in place that could limit the attractiveness of this paper.

Source: Board of Governors of the Federal Reserve System (1999); Calomiris (1999); Evanoff and Wall (2000).

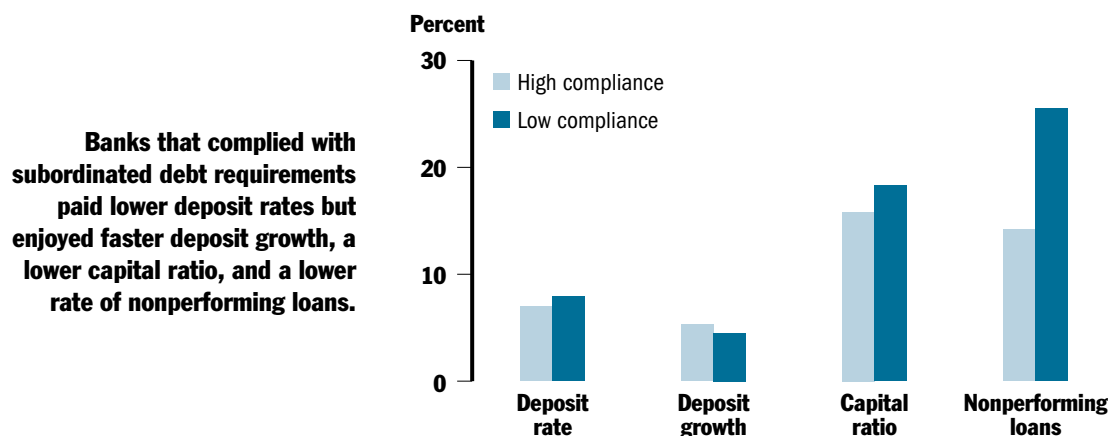
faster growth in deposits, a lower capital ratio, and a substantially lower ratio of nonperforming loans compared with noncompliant banks (figure 2.6). More formal econometric analysis confirms that the subordinated debt requirement there has encouraged better monitoring and greater prudence in risk management (Calomiris and Powell 2000). Even if only good banks were able to issue subordinated debt there, this fact of itself conveys important information to supervisors. The above evidence that credibly uninsured creditors are more likely to provide monitoring of banks strengthens the promise of subordinated debt in improving the market monitoring of banks (Evanoff and Wall 2000). Again, however, it is important to stress that subordinated debt should not be thought of as a single cure for unsafe banking, but rather as a potential tool in the regulatory arsenal.

Financial Sector Safety Nets

Deposit insurance schemes are increasingly spreading to emerging markets—

IN THE FACE OF BANKING FRAGILITY, IT IS NATURAL FOR depositors to hope for redress from government when things go wrong, but this expectation in itself can contribute to the fragility. Although governments have a variety of mechanisms, such as the central bank discount window and other lender-of-last-resort (LOLR) facilities, which can be employed as part of a safety net for banks, explicit deposit insurance schemes are increasingly becoming a key

Figure 2.6 Subordinated debt in Argentina, 1996–99



Source: Calomiris and Powell (2000).

component, have an important impact on overall incentives, and therefore are the focus of this section. Governments typically remain more ambiguous about their LOLR function, which has been the subject of an enormous literature.

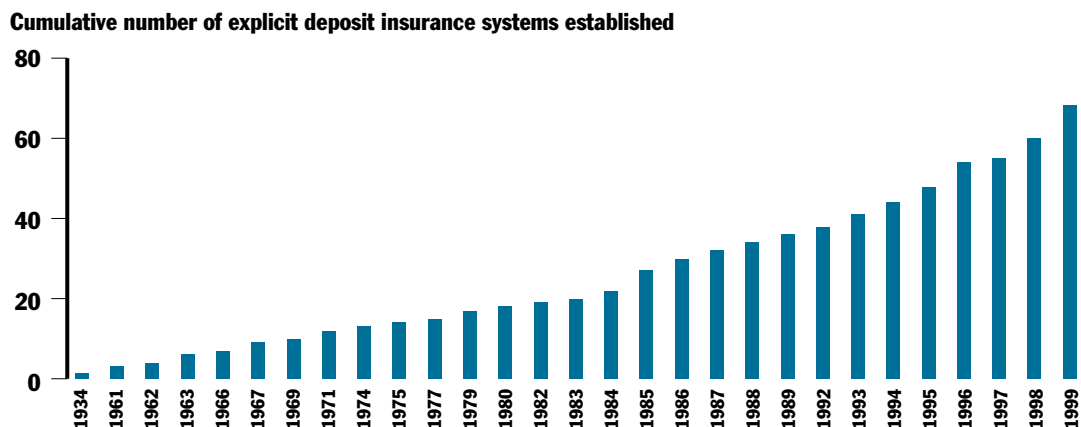
Not surprisingly, deposit insurance arose where banking was most fragile—U.S. states in which banking was conducted in unit banks (banks that were not permitted to branch) beginning with the N.Y. Safety Fund in 1829. Some 14 states (all with unit banks) adopted deposit insurance; some failed shortly after their establishment, while others lasted until being done in during the agricultural collapse of the 1920s. Only three systems—those that harnessed market forces—were judged successful.

Still, by the late 1920s, the much better survival rate of branching banks appeared to have “won the day” for branching vs. unit banks (with or without deposit insurance) until the political realignment on this issue during the Depression. After the adoption of a national deposit insurance system in the United States in 1934, the number of explicit systems in other countries grew slowly for the first 30 years, with only 6 being established, and then took off (figure 2.7).

Most deposit insurance systems are set up with either or both of the stated objectives of protecting the overall stability of the banking system, and protecting individual, especially small, depositors. In the pioneering U.S. case, although political debate may cloud the true underlying purpose, scholars accept that it was systemic stability rather than small depositor protection that was the key factor (Golembe 1960; see box 2.4).

—with the goals of protecting the stability of the banking system, and the savings of small depositors

Figure 2.7 Explicit deposit insurance systems: the rise of deposit insurance around the world, 1934–99



Source: Kane (2000).

Box 2.4 The rise of deposit insurance?

Deposit insurance was not a novel idea; it was not untried; protection of the small depositor, while important, was not its primary purpose; and, finally, it was the only important piece of legislation during the New Deal's famous "one hundred days" which was neither requested nor supported by the new administration. (Golembe 1960, pp. 181–82)

FOLLOWING THE ESTABLISHMENT OF THE N.Y. Safety Fund (1829–66), Vermont (1831–58) and Michigan (1836–42) established similar schemes. All experienced severe losses in the panic of 1837, New York then allowed free banking, and its safety fund was done in as better banks switched to become free banks and thereby avoid the losses associated with poor (public sector) supervision and limited premia. Vermont and Michigan also saw failures in the panics of 1857 and 1837, respectively, also because of adverse selection and poor supervision. Indiana (1834–65), Ohio (1845–55) and Iowa (1858–66) established more incentive-compatible systems: restricted membership, unlimited mutual liability, all privately administered, and with powers to restrict dividends and impose other restrictions and penalties on member banks.

These cases could not have differed more from the first three systems, in that there were few failures and, like the states with branching (but without deposit insurance), they weathered common shocks quite well. Interestingly, coverage was broad, but with unlimited mutual liability, the greater the coverage,

the greater the liability and thus the stronger the incentives to police one another. The systems ended with the taxation imposed by the National Banking System, and not because of crisis.

The post-Civil War period saw eight other states adopt deposit insurance, and all perished with the agricultural crisis the 1920s, with the exception of Mississippi and South Dakota, whose schemes made it until 1930 and 1931, respectively. So those schemes with mutual liability and private administration saw few failures, little or no evidence of fraud, did not perish in crisis, and avoided suspension during panics.

Rather than continuing to pay for the failures by themselves, unit banking states regularly sought the protection of the federal government, as 150 bills for a federal deposit insurance system were introduced unsuccessfully between 1886 and 1933. Representatives from branching states continually opposed the attempt to make their voters pay for the fragility of unit banking. The successful legislation was passed in 1933 *after* the bank run was ended by a bank holiday and reopening of far fewer banks, but without including any ex post compensation for depositors and with a low initial ceiling. Political compromise appears to have been key: Carter Glass, chairman of the Senate Banking Committee and a long-time foe of deposit insurance, acceded to it as part of a deal with Representative Henry Steagall to win passage of Glass' plan for the eponymous banking act that separated commercial and investment banks. Glass later said that the compromise was a mistake.

Sources: Calomiris (1992), White (1997), and Golembe (1960).

Other means of protecting small depositors were recognized, such as the savings banks in Europe, which largely invested in safe instruments. The U.S. deposit insurance legislation was passed by Congress in the midst of the banking crisis, though the run on banks—which was linked to fears of

devaluation and other measures that might be adopted by the new administration—had stopped before it went into effect.

More recently, some countries have adopted or expanded deposit insurance during crises. For example, after two crises in the 1980s, Argentina abandoned deposit insurance in 1992, only to adopt a system of limited coverage in 1995 in response to the Tequila crisis. Thailand moved to blanket insurance in 1997, including coverage of deposits at finance companies. Mexico is the first developing country recently to have put in place plans to reduce blanket coverage, following its experience with the 1994 crisis, so experience with this transition is necessarily limited among emerging markets. The sharp increase in the 1990s resulted in part from the spread of deposit insurance to transitional countries, and to some African states, perhaps reflecting the prevailing wisdom that deposit insurance would lead to a safer financial system.¹⁵

The systems that countries adopted differed dramatically. As mentioned, some countries cover all deposits—including interbank and foreign currency deposits—and are even generous in extending the coverage to a broad array of institutions. However, most deny—at least in principle—coverage for interbank funds, so as to induce banks, which are large and supposed to be sophisticated relative to many others, to monitor one another.¹⁶

Figure 2.8 shows the dramatic dispersion in the stated coverage of deposit insurance relative to per capita GDP, for those countries with limits on coverage.¹⁷ Compared to the relatively modest protection in high-income countries, some of the poorest countries offer the most generous protection, going well beyond the scale of the deposits of the poor—though the extremely low level of average income in countries like Chad needs to be kept in mind to put their coverage in perspective.¹⁸

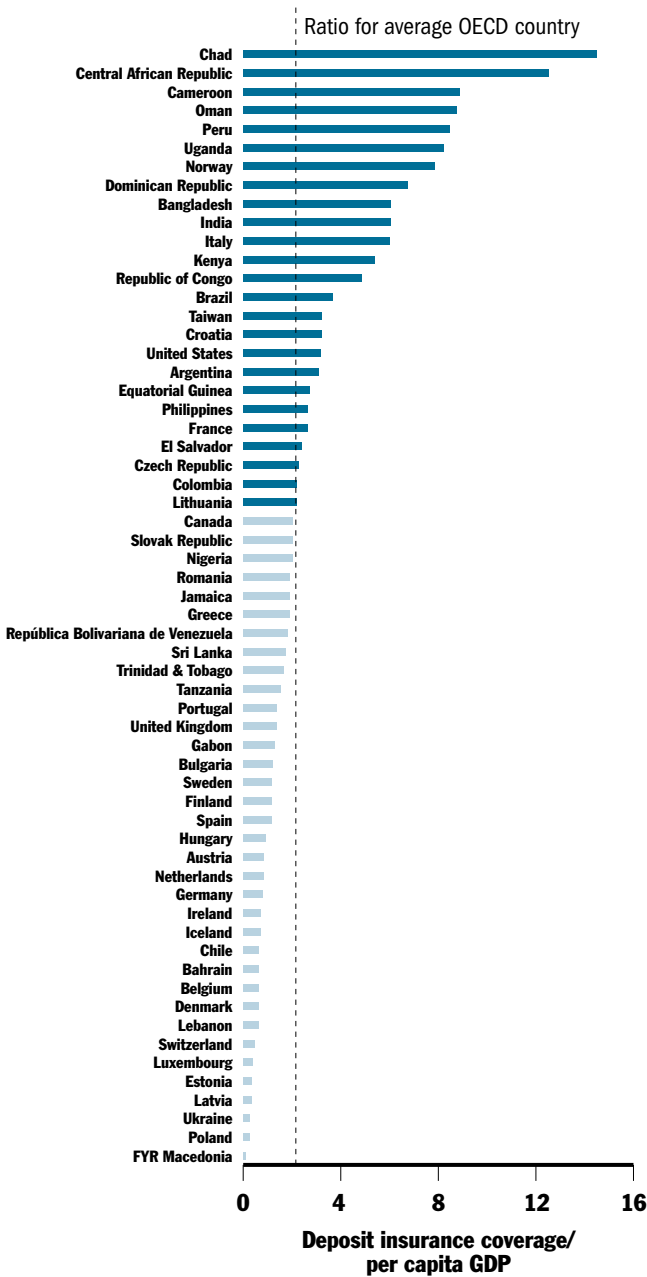
Some deposit insurance schemes are funded or administered by the private sector, or both. And whereas many deposit insurance systems are prefunded, some 10 systems—mostly in Europe—as of 1999 were unfunded, with the power to make assessments on individual banks when needed. Most deposit insurance systems feature a flat premium, but about a quarter feature some differential pricing, in effect an attempt to vary the premium with the riskiness of the individual bank, though the differential itself is small and not always collected.¹⁹

It is not hard to see why explicit deposit insurance systems have become increasingly popular. The political calculus is in their favor. For one thing, they can appear to be a direct and seemingly costless solution

Deposit insurance schemes are politically popular—

Figure 2.8 Deposit insurance coverage

Deposit insurance coverage is relatively generous in low-income countries.



Note: For Germany only compulsory coverage is shown; the private voluntary systems have higher limits, with each depositor protected up to about 30 percent of bank capital.
Source: Demirgüç-Kunt and Detragiache (2000).

to the problem of bank panics and runs. Protection of small depositors is also politically attractive. There are other political forces favoring the introduction of deposit insurance, too. For example, a deposit insurance scheme can help small local banks in emerging markets acquire or retain their market share of deposits that might, in the absence of insurance, migrate to large and especially to foreign-owned banks.

Last, by providing a deposit insurance scheme, the government may feel that, in political terms, it is also buying the right to step in with regulatory intervention, as necessary, including the right to close unsound or insolvent banks. This argument, however—that deposit insurance is a necessary *quid pro quo* for the authority to close banks—goes too far. Almost everywhere in the past century, banking has not been a right, but a privilege, regulated by the state—and for good reason. Banking law properly requires licenses to be granted only to “fit and proper” individuals, and with the possibility that the license can be revoked for improper actions, which should be defined as any that violate banking regulations.

The logic underlying the more persuasive political considerations is not without merit. Credible deposit guarantees undoubtedly do forestall runs. Prompt repayment of their deposits is clearly a valuable protection for small depositors at failed banks, especially protecting them from inflationary erosion (though, as noted, there are other ways of offering safe savings media to low-income households, including postal savings banks—or even mutual funds restricted to secure money market assets). And explicit deposit insurance does favor small banks, although if it comes at a high cost, governments would need to consider the tradeoffs carefully.

Less evident in the political arena, but long recognized by specialists, is the fact that deposit insurance has the potential to induce greater risk-taking, or so-called moral hazard behavior. Limited liability allows bank owners to walk away from their losses—giving them the option to put the losses to depositors or other parties. However, by reducing the incentive of insured depositors to monitor banks, deposit insurance can greatly accommodate risk-taking if accompanied by lax regulation and supervision.

Perhaps the most persuasive argument in favor of an explicit deposit insurance scheme is the thought that it can represent a limit to the government’s commitment to depositors. Absence of an explicit system may really represent unlimited implicit coverage. By placing a modest limit on the amount of deposit coverage, can the government effectively signal that it is not likely to indemnify depositors beyond this limit?

Clearly, the net impact of adopting an explicit system and (if so) of implementing various design features are empirical issues, and turn chiefly on the tradeoff between the gains from protecting depositors and the losses from reduced market monitoring. Until recently, virtually no systematic empirical research used data on emerging markets to address these questions. A recent World Bank research project (led by Demirgüç-Kunt), however, furnished both a database for researchers worldwide and the answers to several key questions on the impact of adopting explicit deposit insurance on financial sector stability, the ability for markets to exert discipline on banks, and the development of the overall financial system. In the process, conclusions on key design issues for authorities are emerging.

—but may cause economic damage—

The weight of evidence from this research is surprisingly clear cut, suggesting that in practice, rather than lowering the likelihood of a crisis, the adoption of explicit deposit insurance has been associated *on average* with less banking sector stability, and this result does not appear to be driven by reverse causation. Here the qualification “on average” is key: deposit insurance shows no significant destabilizing effect in countries with strong institutions; only where the institutional environment is weak do problems arise. The natural interpretation of this result is that banks, exploiting the availability of insured deposits, take greater risks. The presence of explicit insurance reduces depositor monitoring, and this matters if official supervision is insufficient, as where institutions are weak. The role of good institutions—as measured in this research by indicators of the rule of law, good governance (a proxy for effective regulation and supervision), and low corruption—thus seems crucial in reducing the opportunities for risk-taking (Demirgüç-Kunt and Detragiache 2000).

by encouraging risk-taking in institutionally weak settings

That explicit deposit insurance could be positively correlated with banking crises should not be considered too surprising, because *when it is credible*, it facilitates deposit gathering by banks regardless of the risks they undertake.²⁰

Even without explicit insurance, depositors could infer an implicit government protection. At lower levels of institutional development, however, confidence in such implicit insurance may be low. There is no certainty at all that the government will, in the event of a failure, be able or willing to pay out even to small depositors, let alone large depositors and shareholders. This uncertainty keeps depositors motivated to monitor banks (to the extent that they can), especially given that they cannot rely on strong official supervision of the banks in an environment of

poor skills, a weak information and regulatory base, and often political interference. In contrast, the announcement of an explicit scheme acts like a signal that bailout funds will be easier to get, even from a government operating in a weak institutional setting.^{21,22}

Although these remarkable econometric findings have not, of course, gone unchallenged, it has so far proved impossible to dismiss them. True, in a recent working paper Eichengreen and Arteta (2000, pp. 44–45) contend that there is “at least as much evidence that deposit insurance... provides protection from depositor panics... as that it destabilizes banking systems.” In arriving at this conclusion, however, they focus on a more limited sample of countries and crises. In particular, omitting countries with better institutions makes it hard for them to detect the importance of institutional quality in determining the overall effectiveness of deposit insurance, as well as of different design features.

Confirmation of the adverse impact of explicit deposit insurance on market discipline can be seen in the price that banks have to pay for their deposits. Examination of individual bank accounts shows that illiquid banks tend to pay more for their funds, partly reflecting depositors’ concern to ensure their own liquidity, but the premium on interest expense for illiquid banks is less if a generous deposit protection system is in place. Interestingly, these findings come from a different cross-country database than that used in assessing the link with crises and, as such, provide important additional evidence. Inasmuch as they draw on individual balance sheet and income statement data from some 2,500 banks in up to 43 countries, this may be more telling direct evidence of the way in which deposit insurance can affect incentives (Demirgüç-Kunt and Huizinga 2000b). Although deposit insurance weakens market discipline even in advanced countries, the effects seem to be offset by better official oversight and still more effective market monitoring.

Martinez-Peria and Schmukler (2001) also found similar evidence in Argentina (in the early days after adopting explicit insurance), Chile, and Mexico of the market disciplining risky banks by demanding higher interest rates. Interestingly, though, in this case even insured depositors displayed some disciplining effect, which may represent a lack of credibility toward the insurer’s commitment to or speed in paying out.²³ Still, where deposit insurance appeared most credible (in Chile), uninsured depositors appeared to be more effective monitors of bank risk.

The lower interest rates point to the advantages gained by bank shareholders from the existence of deposit insurance, a gain that, in

aggregate, is rarely paid for through insurance premia. “Correct” pricing would remove this subsidy, but it appears that it is easier to adopt deposit insurance than to price it correctly—and correct pricing is difficult in many emerging markets. If the value of bank equities as quoted on an efficient stock market truly reflects the risks and returns facing the bank’s shareholders, it is possible to infer the ex ante value of the deposit insurance scheme to each bank by examining the leverage of the bank and the variance of its stock price (box 2.5). The calculated values can be substantial, and this tool could be used by supervisors to predict bank failure, as Kaplan (1999) showed for Thailand.

Box 2.5 Implicit value of deposit insurance to the bank’s shareholders

A BANK WHOSE DEPOSITS ARE INSURED CAN ACCESS such deposits at close to the market price for risk-free deposits regardless of the risk it is taking on the asset side of its portfolio. Some of the risk, however, is passed through to shareholders, and in an efficient equity market, the price of a risky bank’s equity will be lower on average and more volatile. Employing standard arguments from the theory of option pricing, it is possible to infer from the volatility and level of the equity price, the market’s beliefs about the probability of the bank failing and of the insurer having to pay out.

Using these probabilities, we can calculate the annual implicit subsidy—or expected insurance payout—for each bank. Although the formula is complex, only three variables are needed for this calculation, the equity volatility, the ratio of equity to deposits, and the dividend yield. The following table presents a ready-reckoner allowing the implicit annual subsidy value to the shareholders of deposit insurance for any bank given only the equity volatility and the ratio of equity to deposits. (The table assumes zero dividend yield.) Risky banks—those with relatively little equity and volatile earnings—enjoy a large subsidy.

Annual implicit safety net subsidies as a percentage of the market value of equity

σ_E E/D	50	60	70	80	90	100
1	0.5	1.6	4.1	8.5	16.6	29.1
2	0.5	1.6	4.0	8.4	15.6	27.9
5	0.4	1.4	3.4	7.4	13.3	24.7
10	0.4	1.3	3.0	6.5	12.2	20.6
20	0.3	1.0	2.4	5.0	9.5	15.7
50	0.1	0.5	1.2	2.7	5.0	8.5

Note: σ_E is percentage annual volatility (standard deviation) of equity returns, E/D is the market value of the bank’s equity as a percentage of the value of the bank’s deposits. The dividend yield is assumed to be zero.

Source: Laeven (2000).

Contrary to a popular view that deposit insurance might be needed in poor countries to give the confidence to allow the financial deepening that is needed (cf. chapter 1) to support growth, the data suggest that, in institutionally weak environments, having explicit deposit insurance leads to *less* financial sector development (Cull, Senbet, and Sorge 2000). Although it may be paradoxical that the provision of insurance could lead to less of an activity, it may be that when taxpayers in institutionally weak countries see their authorities providing explicit guarantees, they understand that the environment is not conducive to restraining the cost of these guarantees. The result, then, might be that the real insurers, the taxpayers themselves, choose to hide their assets outside the banking system, and perhaps outside the country, to avoid being taxed for coverage.

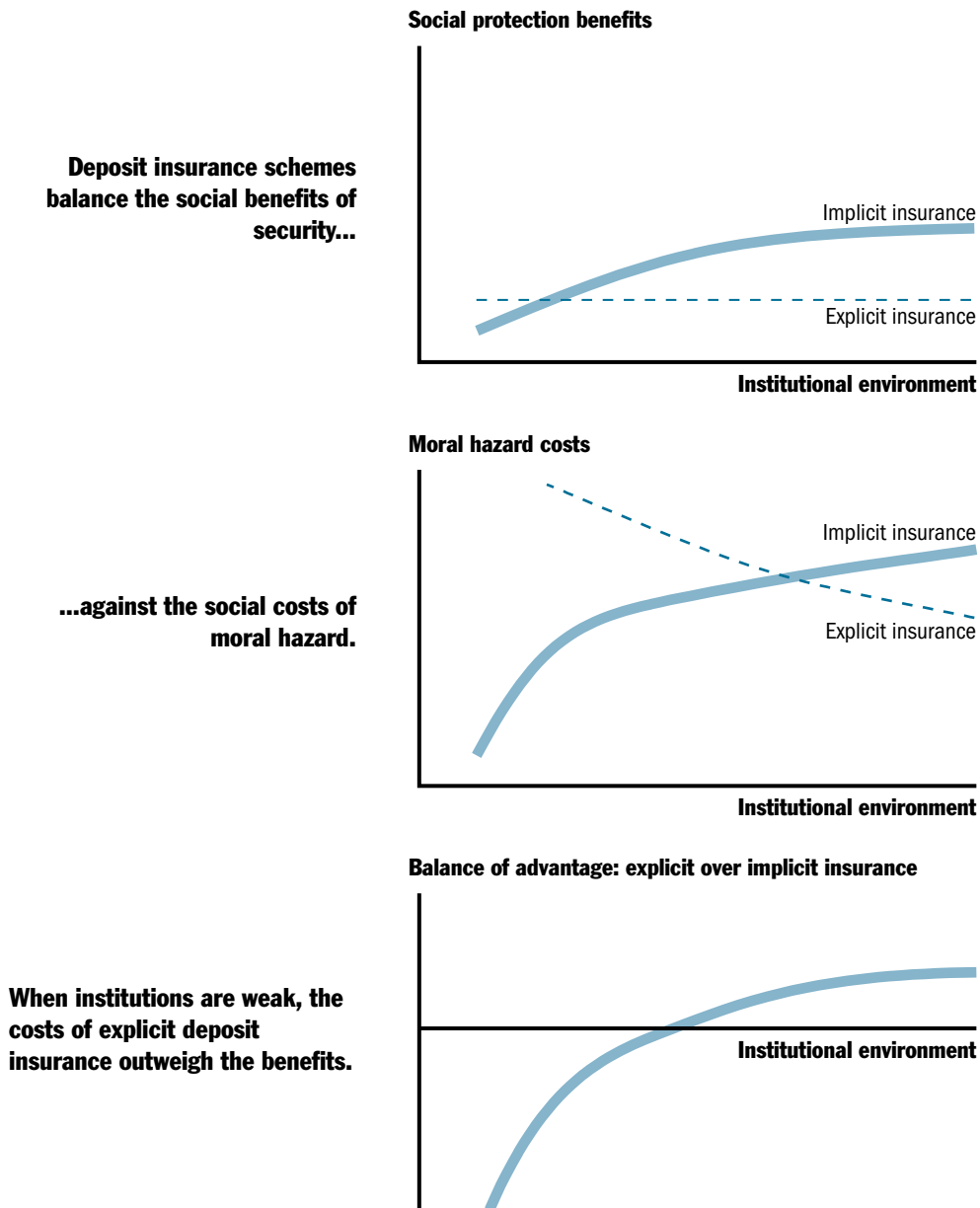
When an explicit insurance system is adopted, the government takes over some of the monitoring function of banks. This requires both transparency—the ability to detect as well as possible the risks that bankers are taking—and deterrence—the ability to convince bankers that rules will be enforced. Deterrence in turn depends on the accountability of government officials, in particular those in the deposit insurance and related regulatory agencies (Kane 2000). Better levels of institutional development—in the legal systems, accounting and auditing standards, and the political environment or quality of government—will make it more difficult for bankers to gamble with insured deposits, or for government officials to refrain from disciplining them.

So if we combine these three features—transparency, accountability, and deterrence—into the overall “institutional environment,” the argument can be summarized in figure 2.9. Deposit insurance—whether explicit or implicit—provides the social benefit of protecting insured depositors, but at the expense of socially costly moral hazard behavior. We can picture the level of depositor protection provided by a functioning explicit system (the top panel) as being a given, independent of the remainder of the institutional environment. With an implicit one, some level of social protection usually will be provided, depending on what the government wants and is able to provide *ex post*. This may, however, as pictured in figure 2.9, be somewhat larger in countries that have achieved a higher overall institutional quality, if only because the better-developed tax systems there will permit greater coverage.

At low levels of institutional development, moral hazard behavior (the middle panel) can run rampant with an explicit system—bankers will

Deposit insurance schemes may inhibit financial sector development where institutions are weak

Figure 2.9 Deposit insurance: net benefits



Source: See text.

have access to deposits, thanks to the insurance, but with weaker oversight. This opportunistic behavior, however, will tend to be reduced with a better institutional environment. In contrast, when the environment is weak, there likely is little moral hazard with an implicit system, as depositors will expect little protection—indeed, they may keep their wealth outside the banking system and even outside the country.

The bottom panel sums up the net benefits, with the key message that adequate infrastructure for enforcing contracts is of paramount importance for ensuring net gains from explicit deposit insurance. Although it is not evident at what cutoff point explicit deposit insurance might yield a net gain to a country, the need to do an “audit” of the state of transparency, deterrence, and accountability prior to its adoption is clear. Governments at the low end of this spectrum that want to institute an explicit system should first focus on improving the related institutions—including the regulatory environment (discussed below) in order to reduce the likelihood of excessive risk-taking. Importantly, no evidence exists that there is any cost to waiting to adopt deposit insurance. In addition to the evidence noted here, that deposit insurance in weak environments tends to lower financial development (and thus growth), *all high-income countries reached that stage without explicit deposit insurance.*

When authorities determine that their system is appropriate for explicit deposit insurance, certain design features should be kept in mind. One way to determine design is to look just at industrial countries and follow what they do, or otherwise try to infer best practice from first principles (Garcia 1999). Moreover, the Financial Stability Forum’s Working Group on Deposit Insurance has been asked to develop guidance on deposit insurance to assist countries that are adopting or significantly reforming a deposit insurance system, and a report is expected in the fall of 2001. Wide differences, however, exist in the design of industrial country systems. More important, success may depend on replicating other institutional features of advanced countries as well.

Another method to complement this approach would be to look at lessons derived from cross-country experience. The econometric findings of Demirgüç-Kunt and Detragiache (2000) and Demirgüç-Kunt and Huizinga (2000b), already discussed above, and based on data from a wide range of countries, also point to several features of explicit schemes that can influence the degree to which they weaken market discipline or increase the risk of crisis, in particular, coverage, governance, and funding.

Don’t just copy a deposit insurance scheme from another country

Limit coverage—

**—involve the private
sector in sharing the
risk—**

Coverage: The results suggest keeping coverage as low as is consistent with the perceived need to protect small depositors.

There is room for disagreement on what the ceiling should be, but a rule of thumb suggests a figure of one to two times annual per capita GDP as sufficiently generous to protect small depositors while still maintaining significant market discipline. Interbank deposits should be excluded.

Governance: Involving the private sector in the management and administration of the fund can help limit the reduction in market discipline and the impact on systemic risk, but is no cure-all.

This issue of governance has received less attention recently, but the key role of private involvement in mutual bank guarantees was at the heart of successful deposit protection systems in the early days. Mutual guarantees are to be found, for example, in such successful mid-19th century U.S. state-based systems as in Indiana, Iowa, and Ohio (all of which featured unlimited mutual liability and were relatively successful—White 1997), and in the clearinghouse associations in the 19th and early 20th century. It is also a feature of several current deposit insurance systems, most notably that of Germany. Private sector involvement and even responsibility for deposit insurance illustrates the principle of the government harnessing the private sector to achieve its ends. Purely public schemes are more prone to crisis, and they reduce market discipline, but private sector deposit schemes at times have failed, and they can run out of funds in a systemic crisis.²⁴

Importantly, it is easier to achieve private sector involvement in name, but without the exceptional oversight that characterizes some cases, such as the German system. Thus, private systems appear to work best in the presence of mutual liability and are best conceived of as a first round of defense against all but systemic crises, at which point the government can step in—much as the risk against catastrophic loss against earthquakes or hurricanes is handled.

The second potential drawback is that private schemes are based on peer monitoring, which (as observed by Calomiris 1992) is more likely to work when the coalition is relatively limited in numbers. Beyond some point, members may be tempted to “free ride” on the monitoring of others. In the German system this problem is addressed by the existence of several deposit insurance systems for different groups of banks. Smaller numbers of banks may also promote safety by boosting their franchise value and accordingly providing bankers with greater incentives to behave prudently. Still, private coalitions could be used to stifle competition, and

governments may have to make a decision on where to draw the line between competition and stability. The high costs of banking crises in developing countries suggests giving greater weight to stability. Moreover, many developing countries, in particular the smaller ones, already have a relatively small number of banks, compared with those in their industrial counterparts. Also, as is suggested in chapter 4, firms and households are rapidly gaining access to financial services from abroad, so that finance is becoming more competitive even in small countries.

Finally, deposit protection systems like those in Germany may be successful because of the institutional and regulatory environment in which they reside. The strong antibankruptcy bias of German law and the effective regulatory and supervisory system likely are important as well.²⁵ Interestingly, applying the methodology of box 2.2 to a sample of 12 countries, Laeven (2000) concludes that German banks take the very low risks, and have the lowest gross subsidy from deposit insurance. Private management, mutual liability, and the antibankruptcy bias likely explain this result.

Funding: The regression results introduce the possibility that keeping the scheme unfunded, though with access to funds, may help protect market discipline. Funding likely increases confidence that payout will be prompt. The case against funding, though, is controversial and not conclusive. The U.S. savings and loan crisis showed that unfunded (or underfunded) schemes could result in greater forbearance and higher-cost resolutions as the insurer struggled to protect depositors of weak banks. In addition, it is sometimes argued that the decision to fund deposit insurance may be accompanied by better oversight. Nevertheless, the cross-country econometrics points to the fact that funds can be abused more easily in weak institutional environments, and it seems far easier to set up a fund than to protect it from looting. These findings should be borne in mind by authorities considering whether or not to fund. Leaving the scheme unfunded, but with the ability to access funds from the government, should allow a quick response while permitting oversight to minimize abuse. Ex ante funding should only be considered when legal and regulatory institutions are developed sufficiently to prevent looting.

In sum, authorities considering the adoption of deposit insurance can benefit from these lessons. Some may interpret the evidence to mean that if countries adopt a “good” deposit insurance system, they will be better insulated against crisis. The difficulty, however, is that the adoption of deposit insurance per se is a “stroke-of-the-pen reform,” and the

—and keep schemes unfunded, or with much oversight, in a weak institutional environment

institutional building to ensure that the system is “good” takes considerable time. Without adequate institutional development, the risk that deposit insurance could lead to crises, less financial sector development, more poorly functioning financial markets, and ultimately slower growth and higher poverty levels is real. Thus, authorities considering deposit insurance should make an audit of their institutional framework the first step in the decisionmaking process. Countries that do decide to establish an explicit deposit insurance system should draw on these results of experience, which utilize known market forces to ensure prudence.

Conclusions

THE CONSISTENT MESSAGE OF THIS CHAPTER IS THUS THAT bank owners and other market participants should be viewed as necessary complements to official supervisors in monitoring banks. Whatever the prudential regulations that are put in place—and it may be that more is needed than simply focusing on capital adequacy (cf. Honohan and Stiglitz 2001)—ensuring compliance is the major stumbling block. Given information problems and the difficulty in understanding well how incentives are functioning, excessive weight on one group as the principle monitor is akin to excessive concentration in a bank’s portfolio. It may appear to pay off nicely until failing miserably. The strategic approach for authorities is to use incentives wherever they can be applied to maximize the number of motivated, watchful eyes.

Easy access to an implicit or explicit safety net confers a subsidy on banks, which encourages excessively bank-dependent—and debt-intensive—economies. Putting in place the recommendations of this chapter and effectively eliminating or greatly reducing this subsidy will remove this distortion and encourage the nonbank financial sector to develop. To be sure, there are some risks here, to the extent that it is near-bank activity just outside the scope of the regulations that occurs, and regulatory design needs to be adaptive to avoid such arbitrage opportunities. To the extent, however, that it allows the emergence of nonbank types of finance, including market-traded equity and bonds, and the associated collective savings institutions and other financial services activities, this will help the allocation of risks and lower the cost of risk capital. Risk and fraud are present in

nonbank finance, too, but the existence of risk is known to all participants and is rewarded by higher expected returns. Fraud needs to be dealt with through responsible disclosure standards and stiff penalties, as well as some consumer-oriented regulations. With a safer banking system in place, authorities will be better able to avoid going down the dangerous road of extending the safety net beyond banking.

There is no doubt that concentration of ownership and control, noted in chapter 1, can limit the efficacy of nonbank financial institutions and markets in providing independent sources of finance and independent checks on the powers of powerful interests. Along with increasing access to foreign financial services (chapter 4), however, broadening capital markets over time promises to provide greater diversity and stability to the financial sector. Improvements to basic financial infrastructure—enhancing disclosure and improving the protection of shareholders and creditors, as noted in chapter 1—will be instrumental in this task. To be sure, these recommendations may be difficult to implement, because politicians will need all their skills in combating powerful interests. Developing an awareness in society of the costs that many, including the poor, must pay for a weak incentive environment should help bolster support for improvements in the framework. The forces of globalization (chapter 4) may help in this effort.

Notes

1. Kahneman and Tversky's (1979) Prospect Theory holds that individuals' assessments of gains and losses can vary depending on their initial situation and specifically may be averse to losses or loss realization, such as not selling stock whose prices fall.

2. As Kindleberger (1996, p. 66) notes, "...the propensities to swindle and be swindled run parallel to the propensity to speculate during a boom...And the signal for panic is often the revelation of some swindle, theft, embezzlement, or fraud."

3. Bagehot (1873, p. 131) reminds that during the South Sea Bubble, one of the companies whose shares were quoted was a bit peculiar. "But the most strange of all, perhaps, was 'For an Undertaking which shall in due time be revealed.' Each subscriber was to pay down two guineas, and hereafter to receive a share of one hundred, with a

disclosure of the object; and so tempting was the offer, that 1,000 of these subscriptions were paid the same morning, with which the projector went off in the afternoon."

4. As Levine (1997) notes, Hicks (1969) concluded that although the products in the early stages of the industrial revolution were invented several decades earlier, their large-scale manufacture had to await the financial revolution that permitted the financing of illiquid investments.

5. Bernanke (1983) documented the credit channel for the Great Depression of the 1930s. The role of a supply-driven "credit crunch" in exacerbating the East Asia crisis has been extensively debated (a representative collection of the research literature is in Domac, Ferri, and Kawai forthcoming). To the extent that a summary conclusion can be drawn, it appears that, while an acute credit squeeze affected firms, especially SMEs in the early stage of the

crisis, the economic downturn soon meant that demand for credit also declined, and relaunching credit supply no longer seemed to be the most pressing issue—though scholars will remain divided on the degree to which it did remain a problem. For the future, the priority will be to ensure that both macropolicy stability and the regulatory environment will be sufficiently secure to make discussion of forbearance and subsidies unnecessary.

6. If three outliers are discarded, the correlation is 0.7 and a regression line implies an approximate one-to-one relationship between flow output costs and fiscal costs. This finding could be interpreted as suggesting that the different elements of cost are all correlated, and as supporting the use of fiscal cost as a general-purpose approximation to the unobserved total economic cost.

7. Other goals, such as antidiscrimination and promotion of home ownership and of exports, continue to be pursued through detailed measures of financial policy in some countries, but these will not be discussed here. There has been a decline in the perceived effectiveness of policy measures that seek to direct the flow of finance to specific economic goals (Caprio, Hanson, and Honohan 2001).

8. Official action to help prevent the outright failure of the highly leveraged hedge fund LTCM in 1998 was substantially driven by knowledge of the potential impact of such a failure on the stability of the banking system.

9. The ending of liquidity requirements in developing countries came about in emulation of the new, best practice in the OECD area, and lower liquidity requirements did alleviate somewhat the taxation of the financial sector. Although liquidity ratios—holdings of central bank reserves, cash, and government paper—were not needed for prudential purposes in high-income countries, developing countries have not been able to upgrade bank supervision and regulation sufficiently to offset the loss of this buffer, cf. Caprio and Honohan (2001).

10. Overly simple or inflexible rules can have unfortunate side effects. In a downturn, for instance, rigid bank capital requirements can accentuate the recession by constraining credit growth, especially if banks have to provision more against loan losses (Chiuri, Ferri, and Majnoni

2000). However, the theoretical solution of making the capital requirements explicitly cycle-dependent (Dewatripont and Tirole 1993) may, in practice be hard to implement credibly or without risking a degree of forbearance that could altogether undermine the incentive effect of having capital requirements.

11. It is not only emerging economies that underprovision. A recent Bank of Japan study (1998) found that 75.3 percent of loans classified in 1993–94 as doubtful at a sample of 18 banks became write-offs over the following three years—but required provisioning for such loans is only 52 percent; and that 16.7 percent of “category 2” loans, for which only a 2 percent provision is required, were written off.

12. The integration of financial sector supervision has received much attention, but is beyond the scope of this study. As integrated agencies are relatively recent, no formal quantitative research of their relative merits has been performed, and only anecdotal information (such as the continued difficulty in getting effective cooperation between separate departments in a single agency) is available. Still, as Goodhart (2000) argues, for emerging markets this issue is premature and likely of second order relative to fixing the overall incentive environment.

13. As Becker and Stigler (1974) note, “The appropriate pay structure has three components: an ‘entrance fee,’ equal to the temptation of malfeasance, a salary premium in each year of employment approximately equal to the income yielded by the ‘entrance fee,’ and a pension with a capital value approximately equal also to the temptation of malfeasance. As it were, enforcers post a bond equal to the temptation of malfeasance, receive the income on the bond as long as they are employed, and have the bond returned if they behave themselves until retirement. Put differently, they forfeit their bond if they are fired for malfeasance.”

14. On the other hand, it is recently reported that senior executives of Daiwa Bank have been held personally liable for losses caused by an inadequately supervised trader (*Economist*, November 16, 2000).

15. In some transitional cases, authorities may have been partly motivated by the possibility of European

Union (EU) accession and the agreed model for deposit insurance there.

16. Of course, since “big money” also is “smart money,” it may run first, and to the extent that authorities are concerned about a potential “systemic” crisis, they may elect to cover uninsured and large depositors, even including interbank claims, either through the deposit insurance fund or some other facility. Thus during the Continental Illinois difficulties in the United States, deposit insurance was extended to all creditors.

17. At times, governments have exceeded their own coverage limits, but the empirical findings recounted below show that having lower ceilings does seem to matter.

18. The requirement in EU law for member states to cover a common euro amount of deposits has placed upward pressure on coverage levels in countries aspiring to EU membership.

19. In the United States, as in some countries, there is a limit on the total amount of funds in the deposit insurance fund. Once that limit is reached, banks are no longer assessed until funds drop below the ceiling. In this situation, banks face a zero premium, and clearly no risk differentiation.

20. Demirgüç-Kunt and Detragiache (1999) found—although in a small sample of 24 countries—that the cost

of crises also was higher with deposit insurance and weak institutional environments.

21. Similar arguments have been made in regard to foreign exchange reserves.

22. Any message that the coverage will be limited seems to be discounted in such institutional settings.

23. The latter can be significant in emerging markets, where it has taken from months to as long as eight years for depositors to be paid in accordance with deposit insurance statutes.

24. Neither private nor public systems, however, were designed for systemic crises, but rather to prevent episodes of individual bank failure from mushrooming into a systemic problem.

25. According to the La Porta and others (1997) database, Germany ranks among the highest in the protection of creditors’ rights. Also, as Beck (2000) reports, although only fraudulent bankruptcy is subject to prosecution, in Germany fraud can include violating “orderly business practice,” which can be broadly interpreted. Hans Gerling, a principal of Herstatt Bank, contributed about 150 million DM to creditors to avoid legal entanglements after that bank failed. Moreover, the German Banking Act prohibits any manager involved in fraudulent bankruptcy from ever holding a managerial post in banking—as determined by regulatory officials rather than criminal prosecution.

