



# Overview and Summary

**A**S THE DUST SETTLES FROM THE GREAT FINANCIAL crises of 1997–98, the potentially disastrous consequences of weak financial markets are apparent. But even when there are no crises, having a financial system that does a good job of delivering essential services can make a huge difference to a country's economic development. Ensuring robust financial sector development with the minimum of crises is essential for growth and poverty reduction, as has been repeatedly shown by recent research findings. Globalization further challenges the whole design of the financial sector, potentially replacing domestic with international providers of some of these services, and limiting the role that government can play—while making their remaining tasks that much more difficult.

The importance of getting the big financial policy decisions right has thus emerged as one of the central development challenges of the new century. The controversy stirred up by the crises, however, has pointed to the weaknesses of doctrinaire policy views on how this is to be achieved. How then should financial policymakers position themselves? This book seeks to provide a coherent approach to financial policy design—one that will help officials make wise policy choices adapted to local circumstances and seize the opportunities offered by the international environment. With informed policy choices, finance can be a powerful force for growth.

This is not a book that relies on the application of some abstract principles; rather, our conclusions are based on an analysis of concrete evidence. Though much remains to be learned, a huge volume of empirical analysis, drawing on a growing body of statistical data, has been conducted on these issues over the past few years. The findings of this research greatly help to clarify the choices that are involved. Many

**Financial policymaking is one of the key development issues**

**This report presents an analysis of the evidence**

long-held beliefs have found detailed empirical confirmation for the first time; some new and perhaps surprising discoveries have been made.

In other words, we are asking policymakers to face some facts about finance. It is now possible to define with some confidence the need for a refocusing and deepening of the financial sector policy agenda. In this study, we identify and synthesize what we believe to be the key findings of recent financial sector research, both that conducted at the World Bank and elsewhere, highlighting the policy choices that will maximize growth and restore the financial sector as a key sector for helping to cope with—rather than magnifying—volatility. A few key messages have emerged from this research.

**Finance contributes to  
long-term prosperity**

It is obvious that advanced economies have sophisticated financial systems. What is not obvious, but is borne out by the evidence, is that the services delivered by these financial systems have contributed in an important way to the prosperity of those economies. They promote growth and reduce volatility, helping the poor. Getting the financial systems of developing countries to function more effectively in providing the full range of financial services—including monitoring of managers and reducing risk—is a task that will be well rewarded with economic growth.

**Governments are not good  
at providing financial  
services—**

Government ownership of banking continues to be remarkably widespread, despite clear evidence that the goals of such ownership are rarely achieved, and that it weakens the financial system rather than the contrary. The desirability of reducing, even if not necessarily eliminating, state ownership in low- and middle-income countries where it is most widespread, follows from this evidence. However, privatization has to be designed carefully if the benefits are to be gained and the risks of an early collapse minimized.

**—even when a crisis hits**

Even governments averse to an ownership role in banking may find it foisted on them in a crisis. The authorities' focus then must be on getting out as quickly as possible, using the market—rather than government agencies—to identify winners and losers. Drawing on public funds to recapitalize some banks may be unavoidable in truly systemic crises, but they must be used sparingly to leverage private funds and incentives. Procrastination and half-measures—as reflected in lax policies involving regulatory forbearance, repeated recapitalizations, and their ilk—bear a high price tag that will affect the financial system and the economy for years to come.

Achieving an efficient and secure financial market environment requires an infrastructure of legal rules and practice and timely and accurate

information, supported by regulatory and supervisory arrangements that help ensure constructive incentives for financial market participants. Success here will promote growth in a way that is tilted towards the poor and will stabilize the economy around the higher growth path; direct access to finance by many now excluded will also be expanded.

Incentives are key to limiting undue risk-taking and fraudulent behavior in the management and supervision of financial intermediaries—especially banks that are prone to costly failure. Instability and crashes are endemic to financial markets, but need not be as costly as they have been in recent years. They reflect the results of risk-taking going well beyond society's risk tolerance. These costs are very real: they represent a potentially persistent tax on growth. This can raise poverty in the near term, and can have longer-term affects on the poor, both through lower growth and through reduced spending on areas such as health and education.

Deposit insurance systems, an important part of the safety net supporting banks, are on the rise in developing countries. It is not hard to see why: not only will a credible system protect against depositor runs, but they are politically popular—not least with the local owners of small banks. However, recent evidence shows that they also lessen market monitoring of banks. Although this may not have weakened banking systems in developed markets, to the extent that these had already acquired reasonably effective regulation and supervision, it is found to heighten the risk of crisis and reduce financial market development where institutions are weak. Thus, authorities considering deposit insurance should make an audit of their institutional framework the first step in the decisionmaking process. Good safety net design needs to go beyond replication of mature systems, and the empirical evidence strongly argues for utilizing known market forces in order to limit the risks that may be associated with introducing deposit insurance.

Banks, securities markets, and a range of other types of intermediary and ancillary financial firms all contribute to balanced financial development. A radical preference in favor either of markets or of banks cannot be justified by the extensive evidence now available. Instead, development of different segments of the financial system challenges the other segments to innovate, to improve quality and efficiency, and to lower prices. They also evolve symbiotically, with expansion of one segment frequently calling for an upgrade in others. The future of some nonbank sectors, notably private pension provision, are heavily dependent on related government policies, whose design needs careful attention.

**But well functioning markets need legal and regulatory underpinning—**

**and a strategy based on harnessing incentives**

**Good safety nets require good institutions**

**Diversity is good for stability and development**

## Open markets can spur development—

Most developing countries are too small to be able to afford to do without the benefits of access to global finance, including accessing financial services from foreign or foreign-owned financial firms. Facilitating the entry of reputable foreign financial firms to the local market should be welcomed too: they bring competition, improve efficiency, and lift the quality of the financial infrastructure. As such, they are an important catalyst for the sort of financial development that promotes growth. Opening up is accompanied by some drawbacks, including a heightening of risk in some dimensions, and will need careful monitoring. It also results in a loss of business for local financial firms, but access to financial services is what matters for development, not who provides them.

## as can technology—

The financial sector has long been an early adopter of innovations in information and communications technology. Internationalization of finance (despite efforts to block it) has been one consequence. This has helped lower the cost of equity and loan capital on average even if it has also heightened vulnerability to capital flows. The precise future role of e-finance in accelerating the process of internationalization is not easy to predict, but it will surely be substantial. If volatility may have increased, so too have risk management technologies and their associated financial instruments.

## notably for access

Some related credit information techniques, including scoring mechanisms, promise to make an important contribution by expanding what is at present very limited access of small-scale borrowers to credit from the formal financial sector. This will be achieved by lowering the barrier of high information costs. At the same time, a degree of subsidization of overhead costs will still likely be appropriate to contribute to the viability of microcredit institutions targeted at the poor and very poor.

*In this overview, after summarizing the main arguments of the book's four main chapters, we analyze the main policy implications, presenting an illustrative stylized application to contrasting country conditions. The overview concludes with a prospect of future research.*

## Summary

THIS SECTION OF THE OVERVIEW SUMMARIZES THE REASONING of the remaining chapters of the report. We focus on the main findings drawn from the empirical research, and the primary implications of these findings. The detailed arguments and caveats are to be found in the succeeding chapters, along with references to the extensive body of research underlying the study.

## Chapter 1: Making Finance Effective

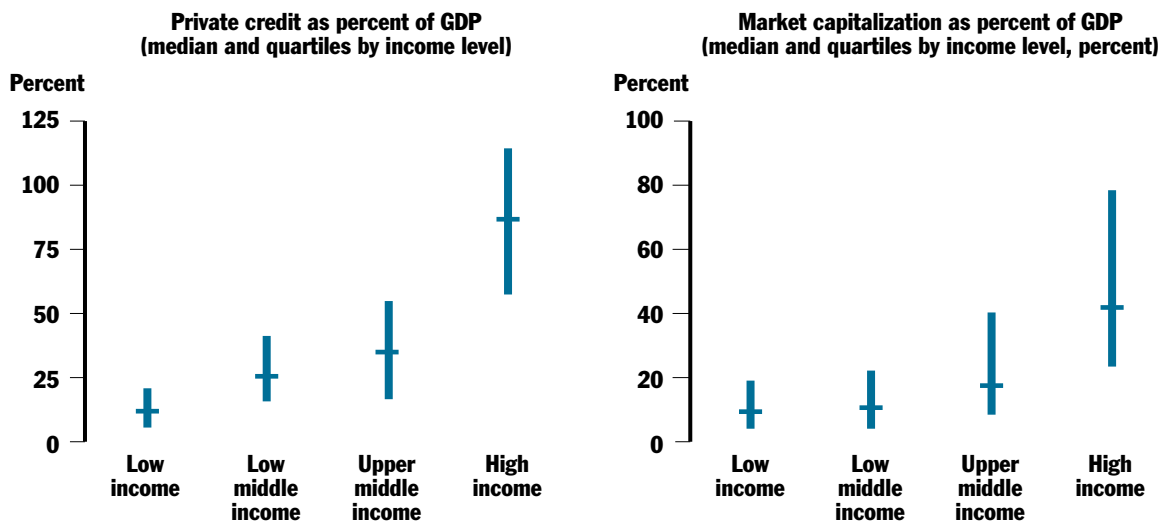
There is now a solid body of research strongly suggesting that improvements in financial arrangements precede and contribute to economic performance. In other words, the widespread desire to see an effectively functioning financial system is warranted by its clear causal link to growth, macroeconomic stability, and poverty reduction. Almost regardless of how we measure financial development, we can see a cross-country association between it and the level of income per capita (figure 1). Association does not prove causality, and many other factors are also involved, not least the stability of macroeconomic policy. Nevertheless, over the past few years, the hypothesis that the relation is a causal one (figure 2) has consistently survived a testing series of econometric probes.

The reason finance is important for growth lies in what are, despite being less obvious, the key underlying functions that financial institutions perform. At one level, finance obviously involves the transfer of funds in exchange for goods, services, or promises of future return, but at a deeper level the bundle of institutions that make up an economy's financial arrangements should be seen as performing several key economic functions:

### Financial depth generates growth

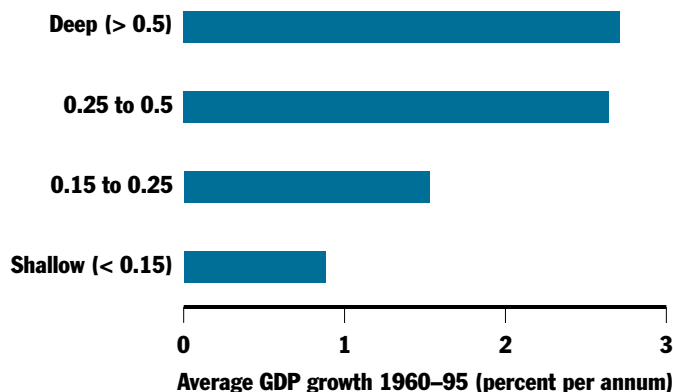
The vertical bar shows the interquartile range—the financial depth of 50 percent of the countries at each stage of development lie within this range. The median is shown as a horizontal bar.

**Figure 1 Financial depth and per capita income**



*Note:* This figure represents the average of available dates in the 1990s for each of 87 countries.

*Source:* Beck, Demirgüç-Kunt, and Levine (BDL) database.

**Figure 2 Financial depth and growth****Ratio of liquid liabilities to GDP in 1960***Source:* World Bank data.

- Mobilizing savings (for which the outlets would otherwise be much more limited).
- Allocating capital funds (notably to finance productive investment).
- Monitoring managers (so that the funds allocated will be spent as envisaged).
- Transforming risk (reducing it through aggregation and enabling it to be carried by those more willing to bear it).

Rigorous and diverse econometric evidence shows that the contribution of finance to long-term growth is achieved chiefly by improving the economy's total factor productivity, rather than on the rate of capital accumulation.

It is through its support of growth that financial development has its strongest impact on improving the living standards of the poor. Though some argue that the services of the formal financial system only benefit the rich, the data say otherwise. Furthermore, countries with a strong, deep financial system find that, on balance, it insulates them from macrofluctuations.

**Bank and equity financing  
are complements, not  
substitutes**

The evidence on the importance of each of the two major institutional components of finance—banks and organized securities markets—is also clear. There is no empirical support for policies that artificially constrain one in favor of the other. Indeed, the development of each sector seems to strengthen the performance of the other by maintaining the competitive

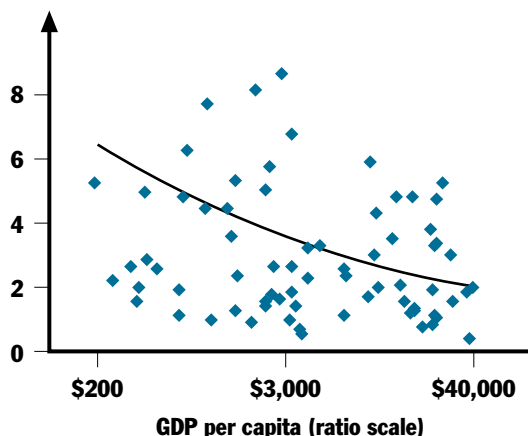
edge of individual financial firms. While banking is more deeply entrenched in developing economies than securities markets and other nonbank sectors (figure 3), distinct challenges face policymakers in trying to ensure that both banks and markets reach their full functional potential. Macroeconomic stability is, of course, one key, but other aspects relate more closely to the microeconomic underpinnings of finance.

With so much of the borrowings by firms coming from banks, the borrowing cost depends on the operational efficiency and competitiveness of the banking market. In this respect, too, the performance of developing economies falls behind. Liberalization has been associated not only with higher wholesale interest rates, but also with a widening of intermediation spreads—at least partly reflecting increased exercise of market power by banks.

One path to lower financing costs through increased competition in financial markets is through the development of equity financing. Here the challenge is to alleviate the problems of information asymmetry. The complexity of much of modern economic and business activity has greatly increased the variety of ways in which insiders can try to conceal firm performance. Although progress in technology, accounting, and legal practice has also helped improve the tools of detection, on balance the asymmetry of information between users and providers of funds has not been reduced as much in developing countries as it has in advanced economies—and indeed may have deteriorated.

**Figure 3 Bank-to-market ratio and per capita GDP**

**Ratio of banks' domestic assets to stock market capitalization**



**At lower levels of per capita income, the value of bank assets tends to be a much larger multiple of stock market capitalization than in higher income countries.**

Source: World Bank data.

**Finance needs an  
infrastructure: law and  
information**

The current wave of policy research thus points to the desirability of policy measures that could promote the production and communication of information; limit the exercise of market power, whether in banking or by insiders against shareholders; and ensure an efficient functioning of the organized securities markets. These policies are likely to be more effective if directed to infrastructure rather than directly to the financial structures themselves. It is in the legal area that recent research on effective infrastructure has made most progress—and in areas going beyond the obvious and crucial need to ensure that the creditor's rights can, in the event of default, be expeditiously and inexpensively exercised. Naturally, the government has a comparative advantage in the design and implementation of law, and it needs to address itself to updating and refining laws and legal practice as they relate to financial contracts. Yet, to supplement—or make up for the absence of—government action, there is a clear and practical scope for market participants to amplify regulatory structures where this is needed. Practice in some of the more successful organized stock markets provides good examples of such private initiatives. This presents a promising way forward, especially where the development of public law is difficult.

There has been a major scholarly debate on whether the precise design of laws matter, with recent research focusing on the contrasting performance of financial systems with legal structures of differing origins. The evidence indicates that the main families of legal origin do differ in important respects relevant to financial development—notably in the differential protection they tend to provide to different stakeholders. These differences have been shown to have had an influence on the relative development of debt and equity markets, on the degree to which firms are widely held, or more generally the degree to which they are financed externally, and thus on overall financial sector development. And the policy message from the econometric results systematically points in one direction: far from impeding growth, better protection of the property rights of outside financiers favors financial market development and investment.

**Collective savings media  
help strengthen and  
upgrade the system**

The growth of collective savings—including through investment companies and mutual funds, as well as pension funds and life insurance companies—can greatly strengthen the demand side of the equity market, as well as widen the range of savings media available to persons of moderate wealth, and provide competition for bank deposits. The impact is not limited to the stock market: in mature and emerging markets, contractual savings institutions have been central in supporting numerous market-based



financial innovations such as asset-backed securities, the use of structured finance and derivative products, including index-tracking funds and synthetic products that protect investors from market declines. The associated learning and human capital formation, as fund managers tool up to employ such techniques, helps to enhance the quality of risk management throughout the economy. Growth in these funds can also ensure enhanced and stable funding for key niche segments of the financial market, such as factoring, leasing, and venture capital companies. They can also generate a demand for long-term investments, thereby providing a market-based solution to a perceived gap that many governments have tried to fill over the years with costly and distorting administered solutions. Regulation of this sector is something that needs attention in many countries.

Measures that succeed in deepening financial markets and limiting the distorting exercise of market power result in more firms and individuals securing access to credit at acceptable cost. However, what of the poor and of the small or microenterprise borrower? What aspects need special attention to ensure that these do not get passed by despite overall improvement in the performance of financial systems? There is no point in pretending that the problem of access is easily solved. Experience shows that formal financial institutions are slow to incur the set-up costs involved in reaching a dispersed, poor clientele (even with minimal deposit-type services). In looking to improvements, however, two aspects appear crucial, namely information and the relatively high fixed costs of small-scale lending. Recent research focusing on technological and policy advances points to how these barriers can be lowered.

A range of innovative, specialized microfinance institutions, mostly subsidized, has become established with remarkable success. Loan delinquency has been low—far lower than in the previous generation of subsidized lending programs operated in many developing countries—and the reach of the institutions in terms of sheer numbers, as well as to previously grossly neglected groups, such as women and the very poor, has been remarkable. This success has been attributed to reliance on innovation in, for example, the use of group lending contracts exploiting the potentialities of social capital and peer pressure to reduce willful delinquency, dynamic incentives using regular repayment schedules and follow-up loans or “progressive lending,” and lighter distributed management structures that reduce costs and enable lenders to keep loan rates down to reasonable levels.

Even without subsidy, some of these techniques can be applied to microlending to the nonpoor. Furthermore, efficient use of credit

**Policy choices and new technology may expand access to finance—**

**—notably in the area of  
microfinance**

information can reduce the threshold size for cost-effective lending by the formal, unsubsidized financial sector. Computer technology has greatly reduced the unit costs of collecting information on borrowing history and other relevant characteristics, and has improved the sophistication with which these data can be employed to give an assessment of creditworthiness. While the impact of having this information available alters incentives and market power in subtle—and not always favorable—ways, growth in access to credit information improves loan availability and lowers intermediation costs.

## **Chapter 2: Preventing and Minimizing Crises**

**Finance always involves  
risk**

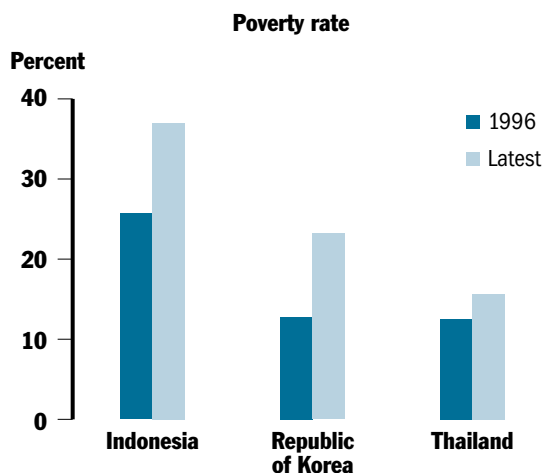
Finance is inherently fragile, largely because of the intertemporal leap in the dark that many financial transactions involve. Not only is money handed over now for the promise or expectation of money in the future, but this is done despite the problems of limited and unequal information both as to the characteristics of one's counterparty (adverse selection) and as to their subsequent behavior (moral hazard). Finance cannot be effective without credit, but credit means leverage, and leverage means the risk of failure, sometimes triggering a chain reaction. In these conditions, expectations can change quickly, leading to swings in asset prices, which in turn may be exacerbated by the possibility of crowd behavior.

Financial markets are in the business of making efficient use of information, but substantial and even growing deviations from equilibrium prices are possible, manifesting themselves as bubbles, or speculative booms and busts. If the countless historical examples of asset price crashes are not sufficient evidence of this, theory, too, explains why, when acquiring information and contracting are both costly, financial markets will never be fully efficient and fully arbitrated. Carefully controlled experiments confirm that individuals are not fully rational in assessing risk: they attach too much weight to recent experience (display myopia), they trade on noise rather than on fundamentals, and they exhibit positive feedback (or momentum) by buying because prices are rising. As well as exacerbating asset-price fluctuations and contributing to euphoric surges of bank lending—followed by revulsion and damaging credit crunches—such behavioral characteristics also provide fertile ground for fraudulent Ponzi schemes.

If finance is fragile, banking is its most fragile part. Bankers have to place a reliable value on the assets they acquire (including the credit-worthiness of borrowers), but banking also adds the complications not only of maturity transformation, but of demandable debt, that is, offering debt finance backed by par value liabilities in the form of bank deposits. 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 many industrial economies in the 1980s and 1990s. But banking outside the industrial world is more dangerous still, where crises have been enormously costly—in terms of direct fiscal costs, slower growth, and a derailing of stabilization programs and increasing poverty (figure 4).

Developing countries face several additional sources of fragility. Not only are information problems in general more pronounced, but developing economies are also smaller and more concentrated in certain economic sectors or reliant on particular export products, and accordingly are less able to absorb shocks or pool isolated risks. In addition, emerging markets have seen a succession of regime shifts altering the risk profile of the operating environment in hard-to-evaluate ways, including most prominently

**Figure 4 East Asia poverty before and after the financial crises**



**Poverty rises and remains elevated for some time following crises.**

*Note:* The “Latest” column refers to 1999 for Indonesia and Thailand, and 1998 for the Republic of Korea, based on household surveys. Poverty lines are set at \$1.50 per day (at 1993 PPP), except for the Republic of Korea, where the national definition of poverty is about \$8 per day.

*Source:* World Bank.

financial deregulation. Moreover, as banking tends to be the dominant force in emerging financial markets, there is more demandable debt, less access to outside equity for firms, and therefore greater fragility. Collapses in equity prices are not innocuous, but are clearly less disruptive than bank failures, which explains the need to focus on the latter.

Financial sector regulation and supervision—the rules of the game in the financial sector, and the way they are enforced—are essential to limiting moral hazard, as well as to ensuring that intermediaries have the incentive to allocate resources and perform their other functions prudently. Although there has been a remarkable convergence on paper in recent years, stark differences remain in regulatory environments around the world, and weaknesses in this area serve as a potential source of added vulnerability in some emerging markets.

**Use market-based  
incentives to supplement  
regulations**

Necessary though headline regulations may be, a clear lesson from recent and historical research is that they need to be supplemented by the use of incentives and information to maximize the number of well-informed, well-motivated monitors of financial intermediaries. Diversity in the set of monitors for banks is desirable not only because of possible differences in information that they may possess, but also because of the varying and possible opaque incentives that they face. But who can monitor banks? There are three main categories:

- Owners, including the board and senior management of a bank, whose net worth should depend on the prudent performance of the institution.
- Markets, meaning all nonofficial outside creditors and counterparties, who should not be under the presumption that they will be “bailed out.”
- Official supervisors, who should operate within a well-constructed incentive structure.

The aforementioned factors accounting for enhanced fragility in emerging markets means that they need to ensure that all three monitors are performing this function vigorously. Greater information and incentive problems certainly suggest that it is unwise to concentrate on any one of these groups. And the higher volatility of these markets implies that even adopting “best practice” from industrial economies may fall far short of the mark.

This report urges that authorities go well beyond the existing Basel guidelines. Ensuring that banks are well diversified, which in many small

economies means regional or foreign banking, is important. Motivating creditors, such as mandating that banks issue uninsured subordinated debt, is a promising part of the solution, but requires that authorities should focus on improving the information available to these monitors and on the difficult task of ensuring that they are at arm's length from the issuing banks. Also, attention to supervisors' incentives is warranted. Higher present and especially future compensation (through bonuses or loss of generous pensions) need to be coupled with protection from legal prosecution today for effective performance of their job.

In the face of financial fragility, governments provide a safety net of sorts, virtually always through lender-of-last-resort facilities and increasingly through explicit deposit insurance. Deposit insurance is increasingly popular in emerging markets because it appears to be an effective way to stem bank runs, at least in high-income countries, and helps foster indigenous banks. The existence of these schemes, however, may actually worsen the information and incentive environment, increasing the scale and frequency of crises. To some extent, establishment of a formal deposit insurance scheme can be expected to result in greater risk-taking—the age-old moral hazard that tends to be associated with most forms of insurance. That would be an argument against establishing a formal scheme, but it has to be recognized that absence of a formal scheme can be equivalent to implicit deposit insurance—perhaps unlimited in its coverage and potentially also entailing moral hazard. Thus, whether to adopt an explicit system, and what kind of system to adopt, are empirical issues.

The weight of evidence from recent research suggests that, in practice, rather than lowering the likelihood of a crisis, the adoption of explicit deposit insurance *on average* is associated 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 has no significant effect in countries with strong institutions, but in weak institutional environments has the potential to destabilize. This result is reinforced by the finding that banks, exploiting the availability of insured deposits, take greater risks.

Insurance reduces depositor monitoring, which is not sufficiently compensated by official monitoring where institutions are weak. Moreover, in institutionally weak environments, having explicit deposit insurance is associated with lower financial sector development, in addition to a greater likelihood of crises. Although it may be paradoxical that

**There is a need to go beyond the Basel guidelines**

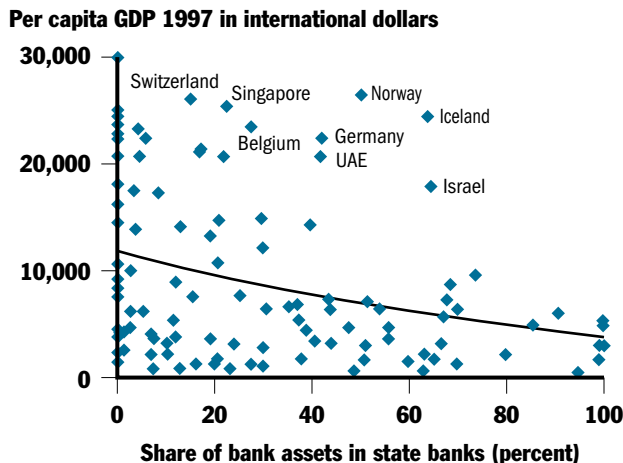
the provision of insurance could lead to less of an activity, it may be that when taxpayers in institutionally weak countries see their authorities providing explicit guarantees, they understand that the environment is not conducive to restraining the cost of these guarantees. The result, then, might 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. This finding runs sharply counter to the popular doctrine that deposit insurance would promote financial deepening—and hence growth—in poor countries.

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. Good design of deposit insurance may help lead to better outcomes, but given the delays in improving regulation, supervision, the rule of law, and other basic institutions, authorities considering the introduction of deposit insurance should first focus on addressing these related institutions to reduce the likelihood of excessive risk-taking. And for those who already have explicit deposit insurance, it is by no means suggested that they should suddenly end these schemes—doing so would likely induce a crisis—but instead should reconsider the design of their systems in light of the evidence presented herein. In deciding on design features, this report argues that authorities should draw on empirical evidence and in particular utilize market forces to ensure prudence, rather than simply attempting to copy existing practice—itsself quite diverse—of high-income countries. It is overwhelmingly important that governments do not provide banks with an excessively generous safety net, as this will hamper the development of other parts of the sector, as well as potentially underwrite excessive risk-taking.

### **Chapter 3: Government Failure in Finance**

#### **Government ownership of banks is greater in poor countries**

More than 40 percent of the world's population still live in countries in which the majority of bank assets are in majority-owned state banks. Government ownership tends to be greater in poorer countries (figure 5). State ownership in banking continues to be popular in many countries for several reasons. First, proponents of state control argue that the government can do a better job in allocating capital to highly productive investments.

**Figure 5 Government ownership of bank assets and per capita income**

**State banks are more common  
in low income countries**

Source: World Bank Survey of Prudential Regulation and Supervision; La Porta, López-de-Silanes, and Schleifer (2000).

Second, there is the concern that, with private ownership, excessive concentration in banking may lead to limited access to credit by many parts of society. Third, a related popular sentiment—reinforced by abuses at, and governance problems of, private banks in many countries—is that private banking is more crisis prone.

Despite the worthy goals often espoused by advocates of state ownership—and though there are isolated pockets of success—achievement of these goals has generally been elusive, to say the least.

Government failure as owner is attributed to the incentives imposed on it by the political process, and the few cases of more successful state banks appear to be linked to a stronger institutional environment and dispersed political powers. And important new statistical evidence summarized in chapter 3 confirms that state ownership generally is bad for financial sector development and growth. Greater state ownership of banks tends to be associated with higher interest rate spreads, less private credit, less activity on the stock exchange, and less nonbank credit, even after controlling for many other factors. It is not just financial development that is affected: one study reveals that countries that had greater state ownership of banks in 1970 tended to grow more slowly since then with lower productivity, especially in poor countries and

**Political incentives make  
governments poor bankers**

where the protection of property rights was weak. Credit allocation is also more concentrated, with the largest 20 firms—often including inefficient state enterprises—getting more credit where the state ownership is greater. In addition, there is some evidence that greater state ownership is associated with financial instability.

To be sure, there are exceptions: Germany, for example, has had little state ownership of the enterprise sector (outside transport and finance), which has reduced the temptation of allocating credit to government industries. Moreover, the tough penalties there for default and bankruptcy would make life easy for most banks, even those that are state run. However, although it remains possible for developing countries to find ways to reduce the damage done by state ownership, limiting state ownership likely will be easier to implement than the many institutional and political reforms needed to avoid the abuses and inefficiencies of state banking.

**Privatization can lead to a  
more efficient banking  
sector—**

The potential scale of gains from bank privatization are borne out from detailed investigation in World Bank research of one country with comprehensive data and a major privatization experience, namely Argentina. This research suggests that in an incentive-compatible environment, the conduct of privatized banks—as reflected in their balance sheets and income statements—over time begins to resemble that of the other private banks. This is especially true in terms of the ratio of their administrative costs to revenues, and most importantly in terms of credit extended to public enterprises, consistent with the evidence above on improved allocation of resources. As part of the privatization process, the shedding or more efficient employment of staff, though less significant for the overall economy, works in the same direction.

As compelling as the case is for private sector ownership in banking, shifting to private ownership in a weak regulatory environment can lead to crisis—witness the examples of Mexico in the early 1990s, Chile in the late 1970s, and numerous transition economies. While abrupt and premature privatization can be dangerous, so too can be a strategy of hanging on to state ownership. Not only is there the evidence that this lowers growth, but also as the Czech experience points out, continued public sector control of the banking system appears to have facilitated looting—the practice of firms continuing to borrow without the intention of repayment.

**but the process should be  
handled with care**

For most countries, abrupt and total privatization is not called for. For one thing, many countries reached an advanced stage of development with modest state ownership. Also, though, a sudden move to private ownership from a lengthy period of state ownership seems particularly



dangerous. The authorities would have to be either quite confident in their level of institutional development, or be selling to foreign banks of impeccable repute—and must be willing to gamble on this bet. Accordingly, moving deliberately but carefully with bank privatization—while preparing state banks for sale and addressing weaknesses in the overall incentive environment—would appear to be a preferred strategy. Preparation, in addition to improvements in infrastructure, could include some linkage of compensation for senior managers of state banks to the future postprivatization value of the bank—such as through stock options, an approach that appears to have helped in Poland. To be sure, this approach can only succeed if the process is credible, otherwise the deferred compensation will be too heavily discounted to have any value. As also noted below, sale of state banks to strong foreign banks can be a way of bringing good skills, products, and the capacity to train local bankers, and may even facilitate a strengthening of the regulatory environment. As long as the foreign banks are motivated to protect their reputation to behave in line with the highest fiduciary standards, this approach will increase the speed with which allocation decisions are made on market principles while minimizing the odds of a crisis.

When a banking crisis occurs, authorities need to decide when and how to intervene. When the problem is not systemic, bank creditors and supervisors should be left to proceed as usual on a case-by-case basis through standing channels. However, widespread bank insolvency may force even a government not disposed to take a significant ownership position in the banking sector to become involved in restructuring banks and even their assets (for example, nonfinancial firms) in the process. In many cases, systemic crisis has led to a substantial increase in government ownership or “care-taking.” Yet the evidence on governments’ limited efficacy as owners of banks suggests that they will not excel at restructuring failed or failing banks either.

How then can one decide when the crisis has reached systemic proportions and when the government should intervene with other assistance? It is not really feasible to speak in terms of mechanical triggers for this kind of judgment. For one thing, the relevant data either come with a lag, or are very imperfect measures of crisis. Besides, as the economy approaches known thresholds, moral hazard increases and bankers and other market participants may take excessive risks. The authorities would then have little option but to bring forward their intervention even though the trigger has not been reached. Because of such problems, most financial authorities have decided on constructive ambiguity as the main solution.

**Governments should  
intervene only when the  
crisis is systemic—**

## —and prepare a clear exit strategy

Once the decision to intervene has been taken, the government has several goals. The first is to maintain or restore a functioning financial system. This goal is difficult to debate, though the best means of doing so are not always clear. Second, the government must contain the fiscal costs of its intervention. Care must be taken in designing restructuring plans, such that a preoccupation with minimizing short-term cash costs does not translate into larger long-term fiscal liabilities. On a related third point, governments must also ensure that their restructuring helps minimize the prospects for subsequent crises—notably in terms of the implicit incentive structures.

Unfortunately, as implemented in many countries, government-funded bank recapitalization programs—injecting capital usually in the form of bonds into banks—all too often miss the opportunity to create strong incentives for future prudent behavior. This then suppresses the message that poor performance is costly. Recapitalization without establishing some corresponding financial claim on the bank—and then exercising that claim—is no more or less than a transfer from taxpayers to shareholders, which is the group that keeps the residual value of the bank.

So if government funds are to be injected, there has to be some government involvement. Governments that inject equity will want to make sure that it is used only where needed to fill an insolvency gap, and certainly that it is not looted. Yet they must recognize that they are not likely to function well as bank owners; accordingly their equity stakes in banks should be for a limited period only. One way of achieving both of these goals is for the authorities to make some amount of funding available for recapitalization of banks, but only to those that

## Use the market to identify banks to be “rescued”

- Secure matching of private sector funds in some ratio.
- Agree to restrict dividends and other withdrawals by insiders for some time (likewise, contracts for senior managers should be structured to emphasize deferred performance-linked compensation).
- Adhere to stringent transparency requirements.

The virtue of such an approach is that it removes from government or government-sponsored agencies the selection of winners, a process that is ripe for abuse. By openly stating the terms on which it will assist banks and their new shareholders, and ensuring that those terms provide good incentives for the restructured bank going forward, the government is making the best use of market forces while minimizing its direct ownership involvement.

## Chapter 4: Finance without Frontiers?

Along with the rapid—albeit uneven—expansion of international debt and equity flows, including foreign direct investment (FDI), there has also been a sharp recent increase in the provision of financial services in many developing countries by foreign-owned financial firms. Financial globalization increases the potential for obtaining growth and other benefits from finance, but it also increases the risks.

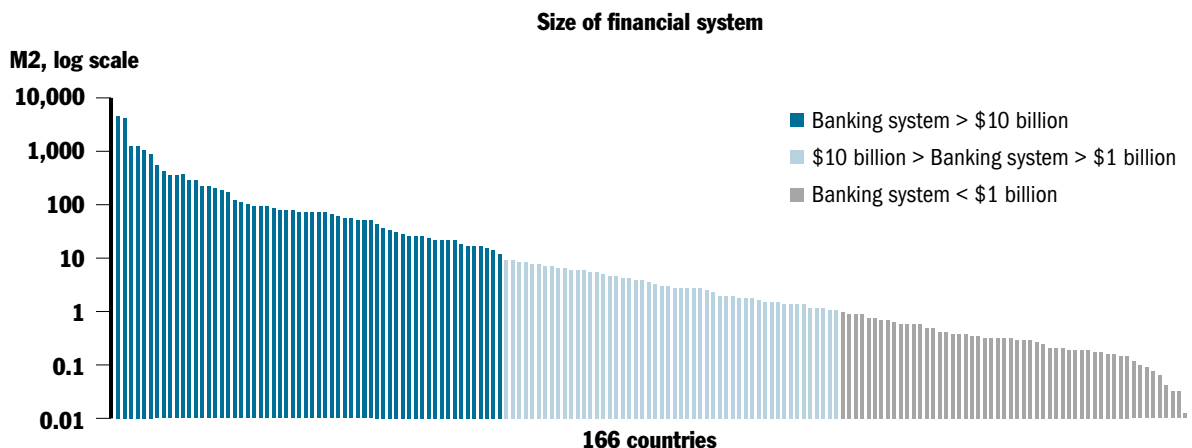
In a world where even the largest developing countries have financial systems whose size is dwarfed by the scale and mobility of global finance, policy thinking needs to be refocused on the limited but important scope for domestic policy actions to maximize each country's capacity to secure the best provision of financial services, from whatever source, and to contain the risks of importing volatility.

Apart from China, Brazil is the only developing country with as much as 1 percent of the world's financial system. The financial systems of developing countries are small, and should be managed with that in mind (figure 6). Small financial systems underperform. They suffer from a concentration of risks: the smaller the financial system, the more vulnerable it is to external shocks and the less able its financial system is to insulate or hedge those shocks—unless the financial system is itself securely integrated in the world financial system through

### Consequences of being small

**Total assets of the banking system in about one third of all countries is smaller than \$1 billion; another third have banking systems smaller than \$10 billion.**

**Figure 6 National financial systems ranked by size**



Source: *International Financial Statistics*.

ownership and portfolio links. Small financial systems also provide fewer services at higher unit costs, partly because they cannot exploit economies of scale and partly because of a lack of competition. Regulation and supervision of small systems is disproportionately costly, and even a well-funded effort would be hard pressed to ensure stability if finance is restricted to domestic institutions operating locally. Many financial systems fall short of minimum efficient scale and thus have much to gain from outsourcing financial services from abroad.

It sometimes seems that a boom-and-bust roller coaster has been imported when the capital account has been liberalized. Undoubtedly, with the wrong incentives, this has been a threat. There have also been tangible gains from external liberalization, and above all there is an inevitability about further opening-up to foreign capital markets and financial institutions. However, despite a huge research literature, there is nothing near a professional consensus on whether the net impact of full capital account liberalization on growth, poverty, or volatility should be regarded as favorable or not.

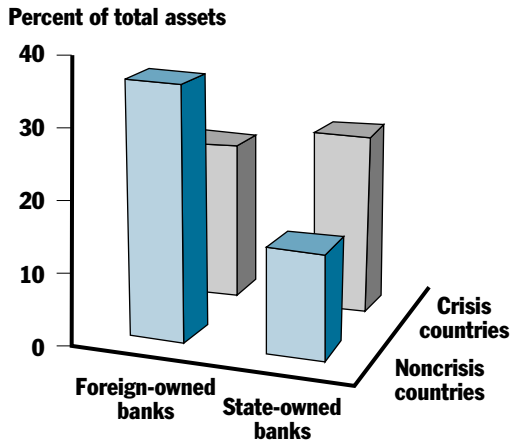
Governments can no longer hope to maintain a permanent and wide gap between actual and market-clearing exchange rates and real wholesale interest rates without a panoply of administrative controls on international trade, as well as on payments, to an extent that is demonstrably damaging to growth and living standards. That premise does not in itself rule out milder forms of control, including taxes and restrictions on the admission of foreign-owned financial service companies (such as banks), on the purchase by foreigners of local equities, and on international capital movements. The evidence, however, suggests that such restrictions should be used very sparingly.

The internationalization of the provision of financial services, including the entry of reputable foreign banks and other financial firms, can be a powerful generator of operational efficiency and competition, and should also prove ultimately to be a stabilizing force (figure 7).

Some countries have remained slow to admit foreign-owned financial firms to the local market, fearing that they will destabilize the local financial system and put local financial firms out of business, with the ultimate result that particular sectors and particular national needs will be poorly served. There is no hard evidence, however, that the local presence of foreign banks has destabilized the flow of credit or restricted access to small firms. Instead, the entry of these banks has been associated with significant improvements in the quality of regulation and disclosure. The very threat of entry has often been enough to galvanize the domestic banks into

**Foreign bank entry can strengthen the system**

**Figure 7 Comparing the share of foreign and state ownership in crisis and noncrisis countries**



Source: Barth, Caprio, and Levine (2001c).

**Ownership structures matter for crisis avoidance**

overhauling their cost structure and the range and quality of their services, with the result that foreign entry has often proved not to be as profitable for the entrants as they may have anticipated.

There may be some downside: pressure on domestic banks from foreign competition could present prudential risks if it erodes franchise value of high-cost operators to the point where they begin to gamble for resurrection. Also, there is the risk that some less reputable foreign bank entrants might prove to be unsound. Evidently these considerations reinforce the urgency of strengthening prudential regulation. Actually, the arrival of reputable foreign banks is usually associated with a systemwide upgrading of transparency (especially if the banks bring improved accounting practices with them).

The most dramatic structural developments in international finance for developing countries over the past decade or so have been the growth in cross-border equity investment, whether in the form of direct foreign investment (where the investor takes a controlling stake) or in the form of portfolio investment in listed or unlisted equities. The dramatic stock market collapses in East Asia during 1997 and 1998 took much of the shine off what had seemed an almost trouble-free liberalization of several dozen equity markets in the previous two decades, highlighting questions about the consequences, benefits, and costs of equity market liberalization.

**Despite some setbacks—**

**—equity market  
liberalization has lowered  
the cost of capital without  
much increase in volatility**

For a country that has an active equity market, opening that market to foreign investors is a decisive step that can be expected to influence the level and dynamics of asset pricing. More than thirty sizable stock exchanges in emerging market economies undertook significant liberalization mostly concentrated in a ten-year period from the mid-1980s to the mid-1990s. So it is natural to ask: did the expected effects occur in practice? Were stock prices higher on average than they would otherwise have been? Was there an increase or a fall in the volatility of stock prices?

In practice, these questions are tougher to answer than might appear at first sight. Overall, though, it appears from research findings that equity prices have increased, thereby lowering the cost of capital, without an undue increase in volatility. Opening up has also accelerated improvements in disclosure and the efficiency of the local stock markets, even though these have lost some of their share of the increased business in the listing and trading of local equities.

Before the explosion in international equity investment, the classic form of international finance involved debt flows: international borrowing and lending. Though carefully designed tax-like measures can be somewhat effective in damping short-term debt flows, openness to international flows inevitably impacts domestic interest rates and the exchange rate. Here is where the risks arise, and where macroeconomic, fiscal, and monetary policy has long been directed to containing those risks. Exposure of financial intermediaries and others to exchange rate risks, both direct and indirect, can be a particularly severe source of problems.

Domestic financial liberalization would be possible even without opening up the economy to international capital movements; with the opening-up, it becomes unavoidable. Capital account liberalization weakens and distorts a repressed domestic financial sector, eventually forcing domestic liberalization. If the process is long drawn out, partial liberalization of external and domestic finance can result in a very risky and unsound situation emerging.

Liberalization both of domestic and international finance has resulted in a convergence of interest rate movements, though developing countries are now experiencing some increased interest rate volatility and a structural risk premium, partly reflecting exchange rate and other policy risks.

Continuing developments in computing and communications technology seem sure to reshape the way in which financial services are delivered worldwide. To some extent the impact on developing economies

will be an acceleration of the trends of recent years, but there will be qualitative changes too. Economies of scale for some financial services are declining, but increasing for others, while the synergies between financial and other economic services are also changing and often increasing. This will alter the organization of the industry, with consolidation in some areas and fragmentation in others.

This process may present some opportunities for financial service providers in small developing countries, especially where the unbundling of financial products leaves subproducts that can be efficiently produced with low sunk costs, and exploits advantages of location rather than scale. However, the greater potential benefit in prospect for developing countries will be for users of financial services, including services that have often not yet been well developed—such as pensions and other forms of collective savings—and international payments. Technology should allow those countries to access these services on terms comparable to consumers in advanced countries, especially insofar as physical distance from the provider begins to lose much of its importance. Undoubtedly, the accelerating presence of the Internet will begin to make direct international financial transactions available even to small firms and individuals.

The likely speed of these developments, and the extent to which they will displace the need for a local presence of financial service companies, remain unclear. The question that will be increasingly asked is whether smaller developing countries need to have local securities and debt markets in the traditional sense, and even how much of banking needs to be domestic. For policymakers in developing countries the questions will shift to considering the stability of domestic financial institutions in the face of the increased competition. Increased access to foreign financial services will entail more use of foreign currency, and this will accentuate the risks of exchange rate and interest rate volatility for countries that choose to retain their own currency. Once again, heightened prudential alertness will be needed.

**Increasingly, countries can choose which financial services to buy and which to build**

## Policy Implications and Stylized Applications

**T**HE GENERAL APPROACH EMERGING FROM THIS STUDY should be clear. Evidence on the importance of sound financial infrastructure is more important than anyone thought. Unregulated financial systems will fail, often catastrophically, but the wrong type of regulation is counterproductive. The *right* type of regulation is “incentive

compatible”—that is to say, it is designed with a view to ensuring that the incentives it creates for market participants help achieve its goals rather than hinder them. More specifically, the right type of regulation

### **Financial policies should be market-aware**

- Works with the market, but does not leave it to the market.
- Keeps authorities at arm’s length from transactions, lessening the opportunities for conflicts of interest and corruption.
- Promotes prudent risk-taking, meaning risks borne by those most capable of bearing it, for example, removing distortions that lead to too little direct investment, too little equity finance, too little long-term finance, and too little lending to small firms and the poor.

In short, this is financial policy that is *market-aware*.

The *wrong* type of regulation includes financial repression—the maintenance of below-market and often negative real interest rates, and forced credit allocation. Repressive policies, in many cases the wrong response to an earlier round of crises, created some of the problems we see today, including the underinvestment in skills and in the infrastructure that are needed to support a market-based financial system. The design of the financial safety net also requires careful attention if it is not to become another type of misplaced regulation.

Another wrong solution is excessive reliance on one type of monitor to oversee intermediation. Prudential supervision is by now a universal feature of financial policy, but supervisors are hard-pressed to keep up with financial technology and the speed with which the risk profile of banks can change. Enlisting the help of private sector participants by arranging for well-funded investors to have something at stake in the continued viability of banks, and hence the incentive to monitor them, will be an increasingly important support to direct official supervision. Establishing appropriate incentives for supervisors themselves—recognized in some cases during the 19th century—will help as well and is an idea whose return is long overdue. Political structures that increase the risk that reforms such as these will be delayed need to be addressed, too; in the opinion of some scholars, it is here that the deepest causes of the wave of crisis of the past two decades should be sought.

The recommendations of this report are mutually supportive in some obvious ways. For example, financial systems that are not supported by effective infrastructure and incentives systems will not be entrusted with much of society’s savings. A less obvious link is that countries that



provide heavily subsidized deposit insurance or a lax regulatory framework will miss out on the benefits of a diversified financial system, because nonbank and capital market development will suffer. Similarly, excessive state ownership is demonstrably bad for competition and usually features active or passive discouragement of foreign banks.

The present condition of the financial system in many countries is far from ideal, and achieving the goals set out here may seem impossibly distant. Yet there are practical implications for all types of countries and all types of initial conditions. Without attempting to provide a detailed tactical design for reform in each case, and without pretending to do justice to the true diversity of country conditions, it is worth briefly sketching the policy implications that can be drawn for policymakers in four contrasting stylized scenarios. Although the initial conditions facing policymakers differ widely, the principles of good policy that emerge from these research findings have an equally wide application.

*(a) A small low-income country dominated by state-owned financial institutions.*

Here we picture a low-income country, such as many in Africa—but also elsewhere—where the legacy of financial repression and state ownership has hampered the development of a vigorous private financial system. The lessons of chapter 3 are the most immediately relevant for this country. Government ownership has resulted in credit being directed to underperforming state entities; incentives and professional capacity are weak in the banking system, and there may still be a hidden inheritance of doubtful loans. The priority for the state must be to divest itself of its bank holdings and to create a credible policy stance sufficient to attract reputable international bank owners.

Legal infrastructure may need upgrading here, too, as discussed in chapter 1, although it is likely that judicial enforcement is the more relevant weak spot. In financial regulation, the political independence of the supervisors is an issue (chapter 2). Clear legal protection for them is crucial. The temptation to bolster the emerging private banks with a formal deposit insurance system should be resisted in view of the demonstrated moral hazard effects.

Although this country needs nonbanking financial services, such as those of securities markets, it is likely too poor and too small to sustain a liquid securities market on its own (chapter 4). The authorities need to be aiming to remove barriers that prevent borrowers and lenders from accessing international capital markets. Evidently this will need to be

supported by stable and sustainable macroeconomic policies, as policy-induced macroinstability may be amplified by this opening-up of capital markets. Achieving minimum efficient scale—both in market infrastructure and in such aspects as payments systems—is going to be a challenge. Exploring the possibilities of regional cooperation on these fronts should bear fruit. If democracy is weak and ethnic conflict high, a significant level of uncertainty will likely prevail, which will deter physical entry by good foreign banks, as will low population density. E-finance or joining a regional financial system may be the best hope of getting access to higher-quality financial services.

*(b) A transition economy with weak rule of law.*

Where the rule of law is weak, the financial sector cannot be expected to function well. Tackling this situation will be the primary challenge. The message from chapter 1 is that market participants may have to supplement formal law with private contracts that establish bright-line rules that can easily be verified and enforced, possibly using enforcement through external jurisdictions.

Because the credibility of domestic institutions is so weak, it is hard to align private incentives with social goals. Certainly it will be undesirable to institute deposit insurance, as observed in chapter 2, although it may be hard to withdraw insurance from existing state-controlled banks, which retain an important quantity of household savings in several transition economies. Leveraging credibility by allowing foreign institutions to enter and to compete in the retail market is a preferable solution, which is all the more reason to privatize many such banks as expeditiously as possible (as proposed in chapter 3), although with care to ensure that the new owners have significant capital at stake.

This economy is likely to have a de facto open capital account, with market participants already obtaining financial services from foreign systems (chapter 4). It would be better to recognize this through a formal liberalization so that such access is not an underground or illegal activity.

*(c) A lower middle-income bank-dominated country emerging from a crisis.*

Most bank-dominated, middle-income countries have recently experienced banking crises associated with an undue burden of debt. As they seek to

recover from these crises, the policy messages are clear. Getting the state out of a direct role in restructuring as fast as possible is important, including using the private sector to identify the banks and nonfinancial firms that are fit to survive. In the medium term, authorities need to find ways to lessen reliance on short-term debt finance. Improved protection of minority shareholders, as noted in chapter 1, is needed to help boost the possibility of issuing outside equity. And no doubt, improvements to the availability and reliability of information will spur nonbank finance.

Also important is better monitoring of the banking system. Even to the extent that the crisis was brought on by external factors, virtually every crisis uncovers banks that have ventured far out on the risk frontier, and that may account for a large fraction of the fiscal cost. In addition to ensuring that excessive risk takers are not “bailed out,” better monitoring is crucial here to convince financial sector participants that incentives have changed. Often, even if a formal deposit insurance system was not in place before the crisis, blanket coverage may be now, and it is important that this coverage begins to be limited as soon as possible. If the banks still are fragile or suspect, however, great care is needed, and introducing a subordinated debt requirement—addressing the enforcement problems noted in chapter 2—can both improve monitoring and increase the share of unguaranteed liabilities. Then over time the authorities can announce a schedule of reduction of the ceiling amount of deposits covered by an explicit system. For countries with relatively limited numbers of banks, the German system of private deposit insurance and mutual liability among the private banks in the scheme has much to recommend itself as a way to maximize market monitoring.

Official monitoring of banks also will need improvement, and correcting the “balance of terror” noted in chapter 2 will complement greater central bank independence and allow for vigorous oversight.

Admitting foreign banks also can help stabilize and improve the sector, and middle-income countries are more likely to have good and eager entrants, while chapter 4 shows how beneficial openness to international equity markets can be.

*(d) An upper middle-income country with a still-shallow financial system.*

The financial development of some upper middle-income countries remains below average. They seem to have all the basics, but depth, term finance, and a full range of services are lacking. Here, too, the research findings of each chapter are relevant. Often term credit is absent because

of uncertainty, both macroeconomic and structural. If high inflation has been a culprit in the past, convincing demonstrations of a longstanding commitment to low inflation is important. Although dollarization (or adoption of some other currency) is one way out of this dilemma, it can create additional problems to the extent that the country is not an optimal currency area with its partner. Another solution, which also can help ensure the quality of regulatory oversight, is fixed and long terms for the central bank governor, ending the ability of finance or prime ministers to remove them without a solid majority of parliament.

The development of long-term suppliers of finance—insurance and contractual savings institutions—also will contribute to a deepening of that end of the market, as it has in Chile, without costly distortions. Markets with poor services can benefit from competition. If there is still a significant (20 percent or more) share of the banking sector in state hands, further privatization will help in this regard. Limiting the state banks' role is also shown to increase nonbank financial sector development, which will improve competition at short and long ends of the financial market. These more sophisticated financial systems will retain many financial services on-shore, but will also rely on the international market for risk-spreading and for more exotic services.

Technology of credit-scoring and credit information can be adopted to help improve the reach of the financial system and the access of small entrepreneurs to it (chapter 1). The incentive conditions and the ability of the authorities to supervise intermediaries effectively can be greatly enhanced in this rather sophisticated environment by relying on carefully designed requirements that have the effect of bringing additional private sector monitors into the picture.

## The Next Generation of Research

THIS REPORT REPRESENTS THE CULMINATION OF ONE generation of research on the financial sector, not the first generation, but perhaps the first that has been systematically based on statistical data from across the world. The research findings provide “first-order” solutions to policymakers: overall guiding principles and a sense of strategy. It also highlights key policy issues for the next generation of research. In many cases, the first-order solution needs further amplification and specification beyond overall principles.

For example, given the principles of incentive-based regulation from chapter 2, which particular aspects of bank regulation and supervision

deserve greater priority at different stages of development? Or, the case for reducing state ownership in many countries is clear, but how far should authorities go and how quickly? And given the dangers associated with bank privatization, what are the lessons on how to do this process? Although research has begun in this area, it comes too soon after the privatizations to provide definitive answers on the long-run effects. Also, although a basic approach to bank restructuring is proposed in this volume, a more systematic exploration of the links between bank and enterprise restructuring, informed by case studies of systemic crisis countries, would help to guide authorities' decisions in a crisis.

Another area of relative ignorance is how corporate governance and ownership in the financial sector affects reform strategies. When insiders or “oligarchs” control banks and other important intermediaries, they may be able to so influence, or even seize control of, the regulatory apparatus that effective oversight is nonexistent. Although many accept that “one size does not fit all” in the reform process, coming up with practical rules and guidelines for authorities to know when it is safe to proceed along different reform paths is an important priority. Case studies of bank restructuring episodes will likely yield useful lessons in general, but especially in this area, such as by highlighting the fate of different approaches to preventing excessive concentrations in ownership and control.

Our discussion of foreign entry also reveals a range of wider questions about the shifting patterns of financial firm ownership and ownership concentration that need more in-depth research. And, though financial repression is almost a thing of the past in most countries, taxation of finance is still a pressing issue awaiting a synthesis, whether in regard to novel transactions taxes, to international tax competition, or to other aspects.

Ongoing developments in e-finance promise to change the financial landscape in emerging and mature markets. The likely decline in the cost of entering foreign markets may greatly increase the extent to which residents of almost all economies “import” their financial services. This rapidly evolving area needs to be monitored to identify policy problems, options, and solutions. Policymakers will certainly want to know how it will affect credit to small and medium-scale enterprises, though there will be many other effects that also need to be studied. And while e-finance may improve long-run stability, in the near term the increase in competition could have destabilizing consequences. There is already a

## **Moving beyond general principles—**

## **and monitoring the effects of e-finance**

demand to know how countries are handling these pressures and how they are regulating “e-banks” and electronic exchanges.

The trends noted or urged here—better infrastructure, improved incentives, less state ownership, and a more receptive view to importing financial services—will all surely contribute directly or indirectly to a considerable expansion in the role of nonbank intermediaries and capital markets. How to regulate efficiently these markets to contain systemic risk could be *the* key research question of the next few years.

The last several years have seen impressive leaps in our understanding of the importance of the financial sector in development and in the knowledge base for many key issues, but there is still much to be learned.