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Beyond Capital Ideals

Restoring Banking Stability

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Hard on the heels of Mexico's crisis in 1994, a wave of financial crises swept across emerging economies — from East Asia and Russia to Brazil — bringing the fragility of banking and finance into unprecedented focus. What has gone wrong?

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Summary findings

Caprio and Honohan examine why emerging markets, in particular, are susceptible to and affected by financial difficulties. They show that these difficulties have a richer, more complex structure than they are sometimes believed to have — with marked information asymmetries and substantial volatility. The sources of heightened regulatory failure in emerging markets in recent years include the volatility of real and nominal shocks, the difficulty of operating in uncharted territory after financial liberalization and other changes in regime, and the political pressures that can inhibit the enforcement of prudential regulation.

Caprio and Honohan discuss what stronger regulation can and cannot accomplish, as well as options to improve the incentive structure for bankers, regulators, and other market participants. They probe the shortcomings of a regulatory paradigm that relies mainly on supervised capital adequacy and discuss the possible intermittent application of supplementary "blunt instruments" as an interim solution while longer-term reforms are being put in place.

Certain well-worn messages remain valid, but are respected more in theory than in practice. There would be fewer problems, the authors say, if there were:

- More diversification.
- More balanced financial structures (for example, as between debt and equity).
- More foreign banks in emerging markets' financial systems.
- Better enforcement of both contracts and regulations.

Participants in the financial sector will constantly try to get around rules that limit their profitability, so regulation must be seen as an evolutionary struggle. Prevention of financial failure is not costless, and a heavy repressive hand is not warranted. But a richer regulatory palette can be used to protect financial systems more successfully against crisis while preserving the systems' growth-enhancing effectiveness.

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Beyond Capital Ideals: Restoring Banking Stability

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World Bank

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Introduction

Hard on the heels of the 1994 Mexican crisis, the new wave of financial crises sweeping across emerging economies since early 1997–starting in the miracle economies of East Asia, then hitting Russia and later Brazil–has brought the fragility of banking and finance into unprecedented focus. Yet, just a few years ago, financial liberalization and financial deepening were seen as a key pre-requisite for economic development (King and Levine 1993; Levine, Loayza, and Beck 1998). What has gone wrong? For one thing, the liberalization of financial markets has not been supported by adequate prudential regulation of intermediaries. The need for such a policy infrastructure, though denied by some ideologues, has long been recognized by practitioners and theoreticians alike. This is because finance is prone to acute information asymmetries, because of economies of scale in monitoring, and because of the severe negative externalities that can be entailed in intermediary failure. But policy enthusiasms, as well as the eroding pressures of technology on existing regulations, meant that the rules governing markets were dismantled faster than the needed prudential infrastructure could be put in place.

In this paper we look into the sources of widespread financial intermediary failure focussing on the emerging markets of the developing and post-communist world where the problems have emerged more acutely and more clearly than elsewhere. The next section reviews some of the factors behind crises in financial markets. It examines why emerging markets in particular are susceptible to and affected by financial difficulties, and shows these difficulties to have a richer and more complex structure than is sometimes believed, characterized by marked information asymmetries, the potential for

political interference, substantial volatility, and the vulnerability of banking and finance when structural economic changes create a new and uncharted operating environment.

We then turn to a discussion of options to improve the incentive environment in financial systems, and a discussion of what stronger regulation can and cannot accomplish. The industrial countries converged on a regulatory paradigm relying mainly on supervised capital adequacy. We probe some of the shortcomings of this approach, bearing in mind the lessons from developing country experience and discuss some options that go beyond the standard paradigm. These hope to improve the incentive structure for bankers, regulators, and other market participants, effectively increasing the number of concerned, skilled and watchful eyes. We also discuss the possible intermittent application of supplementary "blunt instruments", that could be useful especially as an interim solution while longer-term reforms are being put in place.

The long history of banking problems in developing countries: some highlights

The huge increase in private non-bank capital flows to the third world, starting around 1990, should have given financial market participants from industrial countries a new incentive to become aware of the fragility of third world financial systems. By and large, however, they seem to have ignored until very recently the continuous history of severe banking crises in developing countries over the past twenty years.[1] Even a cursory review of this history would have revealed the wider variety, greater frequency, and relatively higher cost of systemic bank failures that is typical of small, low income countries (Figure 1).

One of the reasons why developing economies have done relatively badly on this front is the particularly volatile environment in which banking has to operate in many of these countries. The other main reason has to do with political interference in banks or in the process of bank regulation.

Volatility and the Boom in Bust Banks

Volatility

Dealing as they do in money, banks are especially vulnerable to nominal volatility (inflation and exchange rate movements). Econometric research has found nominal volatility to be a significant contributory factor in crises.[2] Measured, for example, by the standard deviation of inflation (Figure 2), average nominal volatility in most regions of the world over the past quarter century has been a multiple of that in the industrial countries (as well as much higher than in previous decades). To the extent that monetary policy is under domestic control, nominal volatility can be seen as policy-induced.

Real volatility too is higher in developing countries (Figure 2), as has been stressed by Gavin and Hausmann (1996), and here exogenous sources predominate. Many developing countries are not only small but also undiversified, being dependent on a narrow range of primary products as their main exports. Sectoral or product-specific supply or demand shocks can translate into sizable changes in the terms of trade of an undiversified economy, and into bankruptcy for export-dependent firms and their bankers. Potential domestic purchasers of the assets of a distressed firm are, in an undiversified economy, likely to be themselves distressed, a factor which depresses collateral values just when they are needed. (Shleifer and Vishny, 1991).

Of particular importance is the volatility of external capital flows, sensitive not only to host country conditions and prospects, but to source country lending opportunities (Edwards, 1998). Correlated re-balancing of portfolios by international fund managers can, as we have seen in East Asia and elsewhere, entail large inflows and sudden outflows sufficient to swamp the domestic financial system of developing economies. But here it is less clear that we are dealing with an exogenous factor.

Triggered as it was by the withdrawal of foreign funds, it would be easy to picture the downturn in East Asia[3] as caused by an exogenous event. But the banking systems of the region could and should have been better positioned to help absorb even this huge shock. Instead, banking policies among other factors had encouraged the inflows and ramped up the prior boom in real estate and equity prices. And the weakness of the banking systems may have contributed to the scale and timing of the outflow.[4]

The debate over whether it was *fundamentals* or *panic* that brought down the Asian financial systems should thus not be confused with the question of whether underlying banking sector policy weaknesses contributed. Although the domestic banking system cannot easily be blamed for actually causing a panic, it had assumed increased vulnerability. Not only the weakened capital position of banks, but above all their unhedged direct and indirect[5] exposure to foreign exchange risk and to the risk of property and equity market collapses, opened the door to a self-fulfilling panic. Liquidity risk from the substantial dependence on short-term funding from foreign wholesale sources also increased fragility; and the risk that any initial reverse would be catastrophically amplified, was exacerbated by the high leverage of the corporate sector, especially in Korea. Finally, the lack of reliable financial information and trustworthy

mechanisms for enforcing contracts (including bankruptcy procedures) made for severe information asymmetries with the result that these countries became very vulnerable to a sudden change in sentiment.

Volatile capital flows are always a risk factor for banks; but the Asian crisis forces us to recognize how much bad banking can contribute to capital flow volatility (in and out). Far from providing a buffer against external volatility (in this instance coming from a reversal in capital flows) the banking system in the affected Asian countries not only exposed the economies to a self-fulfilling panic, but meant that the outflows would cause acute macroeconomic consequences.

Exchange rate collapse

This endogenous boom-and-bust story is not, of course, unique to East Asia, but echoes previous crises in industrial countries, where most episodes of widespread bank failure have been characterized by over-exposure of banks to a real estate property boom, itself fuelled by an over-expansion of bank lending.[6] Many of the more spectacular earlier systemic failures in developing countries have also been of the boom-and-bust type, albeit with property less prominent, and with the additional important twist of an exchange rate collapse.

The three Southern Cone crises of 1979-82 were of this type, and they have been among the most costly in proportional terms of the fiscal bail-out of bank creditors. In each case, a domestic borrowing and spending boom was fuelled by unrealistic expectations about the sustainability of an exchange rate peg, and hence about the ultimate cost of foreign-currency denominated borrowing. When the exchange rate

collapsed, unhedged banks and non-bank borrowers were made insolvent overnight, an experience eerily resonant with more recent events.

It seems obvious that borrowers who believe in the stability of a developing country's nominal exchange rate peg to the extent of incurring large unhedged borrowings in foreign exchange are highly vulnerable. Nevertheless, this has been a recurring cause of problems, not least in Mexico in the run-up to the 1994 devaluation, when banks even had recourse to elaborate financial engineering designed to leverage up their foreign exchange exposure in an evasion of prudential norms designed to limit such exposure. (Garber, 1998; Mishkin, 1997)

Where banks or their clients have unhedged foreign exchange liabilities, an additional source of vulnerability is the consideration that the central bank's ability to provide lender-of-last-resort facilities is in such circumstances limited. Even if the central bank believes that the domestic banking system is solvent at current exchange rates, it has limited resources to finance a withdrawal of liquid foreign exchange deposits, or of domestic currency deposits which are immediately converted to foreign exchange (Fischer, 1999). The Argentine crisis of 1989 represents a dramatic example of this mechanism in action, (Beckerman, 1992, Giorgio and Sagari, 1996) as does the later experience of 1994-95 in the same country (D'Amato, Grubisic and Powell, 1997), though in that case the central bank's resources proved just sufficient.

Risk management in a brave new world.

To the extent that volatility is a constant feature of developing economies, bankers should have adapted to it. In practice, superimposed on normal volatility have

been a succession of regime shifts altering the risk-profile of the operating environment in hard-to-evaluate ways.

As developing country governments began to modernize and liberalize their regulatory systems during the 1980s in line with prevailing intellectual fashions and following the example of industrial countries,[7] many failed to realize the scale of the task they had undertaken. To be sure, there were many pressures that would have made it either impossible or prohibitively costly to maintain the old regulatory barriers, but the enthusiasm with which liberalization was adopted in many countries in the absence of necessary institutional underpinnings brought the changes well beyond what was unavoidable and into dangerous territory.

The dangers were particularly acute partly because of the lingering effects of government and political interference, always more severe in countries with a small political elite and in those where freedom of the press and an open democratic process are not well developed.

As the governments withdrew, they left financial systems facing a largely uncharted territory. New owners and inexperienced bank supervisors (rarely receiving the full backing of enforcement) at best tried to feel their way to an assessment of what safe-and-sound banking would mean in practice –surely a fertile ground for excessive risk taking or, given the asymmetries of information, outright looting (Akerlof and Romer, 1993).

Financial liberalization is only the most conspicuous of the regime shifts that have placed bankers in a "brave new world". Two contrasting examples are technological changes in finance and communication and structural economic transformation (as in

Eastern Europe and the Former Soviet Union). The era of miracle growth in East Asia can also be seen as a regime to which financial systems react in what proved to be an overly optimistic manner.[8] Without a track record of successful functioning under the new regime, bankers have had a hard time judging just what constitutes sound banking in the brave new world created by these regime shifts.

Political interference as an underlying sources of weakness

So far we have stressed banking and regulatory errors in the face of a more volatile operating environment than had been allowed for. But the role of government and politics goes beyond technical errors in regulation and policy design. Indeed, in a remarkably high proportion of cases of widespread bank failure, the underlying cause has been political interference in bank credit decisions, and/or in the enforcement of prudential regulations designed to restrain self-lending or recklessness.

There are many ways in which government or political interference brought banking systems to their knees. Most egregiously, some corrupt leaders simply helped themselves to the resources of the banking system, as evidently happened in the Philippines in the early and mid-1980s under the Marcos regime, and for which there are many other examples, though mostly on a smaller scale. More commonly, governments leaned on banks – some of them state-owned – to make loans to priority sectors or borrowers, not only directly undermining the banks' financial viability, but also eroding the banks' incentive and ability to carry out loan appraisal or to build up credit appraisal skills. Often there was an implicit understanding that such loans would never be repaid.

Sometimes the loans went to unpaid government suppliers, drawing the banks into a web of non-payment and financial indiscipline.

The experience of many of the FSU banking systems in the years following the break-up of the Soviet empire can also be partly interpreted in this way; and the plight of large Russian banks in 1998-99, faced with a payment moratorium on their huge holdings of domestic government bills, follows in the same ignoble tradition.

Even where directed credit was not the problem, other forms of arbitrary quasi-taxation often undermined the banks' financial autonomy, by making them wholly dependent on compensating quasi-fiscal concessions that would allow them to balance the books.[9] In such circumstances, each financial market participant is reduced to hoping that somebody else will pay-up in the end.[10] The denouement often brings with it a fiscal crisis.

Although failures have been reported more frequently following financial liberalization (Demirgüç-Kunt and Detragiache 1998), it would be misleading to conclude that reliance on market forces in preference to detailed government direction of credit was always the source of the failures. Indeed, in many cases, a long-standing underlying insolvency of the banking system has only been revealed as the banks emerged from the sheltered environment that allowed them to cross-subsidize loss-making lines of business, which they had been encouraged or instructed to maintain at the behest of government, or of powerful politicians. In such cases liberalization has revealed the insolvency, rather than causing it.

Of course active intervention by a government in the credit decisions of banks is fundamentally at odds with its role as prudential regulator and supervisor. Inadequacies

in this latter role have been the other major aspect of political economy failure. Here the key is not so much technical deficiencies – though these are often present – but enforcement in the face of political obstacles. Weakness in this dimension has been widely identified as a contributory problem in East Asia. Certainly, comparative assessments gave the affected Asian countries relatively low scores on the quality of the regulatory environment prior to the crisis (Caprio, 1998), such as relatively weak definitions of capital, easy loan classification and provisioning standards, low liquidity requirements and little foreign penetration of the banking sector. Furthermore, there is a fairly clear correlation between the severity of recent banking crises and expert assessments of the policy environment on dimensions such as legal protection of property rights, corruption and law enforcement. Developing countries tend to score low on these, as do the East Asia "miracle" economies, at least on the dimension of corruption (Figures 3, 4).

Enforcement of prudential regulation is especially likely to be complicated by political considerations where there is concentration of ownership and control of firms, as this typically entails concentration of political power. (In addition, financial distress can propagate through ownership links to affect the economy to an extent unfamiliar in larger developed economies.) As shown by a recent detailed study of over 3000 quoted firms in nine Asian countries found that in Hong Kong, Indonesia, Korea, Malaysia, and Thailand, individual families have control over the majority of corporations, with the use of pyramid structures, cross-shareholdings and other devices enhancing the control of even modest block shareholdings (Claessens, Djankov, Fan and Lang, 1999, see also LaPorta, Lopez de Silanes, and Shleifer, 1998). There are not a few other countries

where a handful of powerful families control large chunks of the banking system and the economy, with family members at times well-placed in the finance ministry or other agencies overseeing the banking sector.[11]

The East Asia crisis thus confirms the message from other experience in developing countries, that a strategy for prudential policy must address three main weaknesses: the impossibility of fine-tuning bank safety margins in the uncharted territory that is banking in the developing world; the need to provide insulation against the large shocks to which these economies are prone; and the lack of enforcement that results from the concentration of political power in many such countries. Of course these lessons are also relevant for industrial countries – but they are etched in strong relief in the emerging economies.

Rigorous application of best industrial country regulatory practice will undoubtedly help. But developing countries need more. The greater background volatility and the weaker incentive structure for regulation (including the political pressures on regulators) both point to the need for innovative approaches to providing better insulation and to mobilizing additional constituencies in favor of safe-and-sound banking. Furthermore, the lengthy lead time before the technical quality of regulation can be brought to the necessary standards creates an urgent need for blunt, quick-acting measures that might not form part of the optimal long-term or steady-state regulatory design. It is to these matters that we now turn.

Re-thinking Regulation

The rise of bank insolvency in emerging markets is leading not just to demands for a new international financial architecture, but also recommendations for reform of the domestic financial sector in developing countries in line with the strengthened procedures of industrial countries. Certainly, in all industrial countries greatly expanded supervisory teams now routinely make on-site inspections of banks as well as monitoring detailed financial reports of banks on a regular basis. The main reason is obvious: alarm on the part of national authorities at the scale and frequency of bank failures since the 1970s. It was not only the US Savings and Loan debacle. Each major industrial country has seen embarrassing regulatory failures: the names Herstatt, Ambrosiano, Barings, BCCI, Rumasa and Crédit Lyonnais reverberate, not to mention the correlated Nordic collapses, let alone Japan. Despite this disappointing performance, application of industrial country prudential standards is generally–and rightly–felt to be a pre-requisite for improvements in the functioning of developing country systems; but what are these standards, and are they enough?

A major early goal of the Basel Committee on Banking Supervision[12] was to establish a level playing field for international banks in the face of intensified but un-harmonized national regulatory regimes, though its famous risk-weighted minimum capital percentage – albeit a compromise – has surely contributed to an increase in average bank capitalization over the past decade. And the Committee's work allows us to speak of an industrial country model of bank regulation, and it is to this model to which many look as the solution to the problems of developing country banking systems.

The centerpiece of the industrial country ("Basel") approach has been the requirement that each bank should maintain a minimum of capital in relation to its risks, a requirement that is supported by a supervisory procedure akin to, but going well beyond, the audits to which non-financial firms are subjected. Notwithstanding this conceptual simplicity, the Basel committee, and regulators generally, have had to work almost continuously to refine and redefine the measure of risks, as well as having to cope with ever-increasing difficulties of verification. Part of the problem has been the evolving complexity of financial market instruments, and the fact that a bank's position in such instruments can change from moment to moment. For this reason the recent trend has been for industrial country supervisors to move to auditing of the bank's risk management systems, rather than simply assessing the state of the balance sheet at a moment in time.

But there are other shortcomings to the "supervised capital adequacy" paradigm, some related to the question of capital adequacy itself, others to the limitations of administrative supervision. Many of these shortcomings have been identified in the theoretical literature,[13] which began to evolve rapidly once micro economists interested in regulation began to realize not only the points of common ground with other principal-agent incentive structures, but also the challenging differences that arise in the regulation of bank-like financial institutions. Many have been confirmed in the field, not least in developing countries.

"A capital idea"...or ideal, more likely

It is hard to quarrel with the notion that capital would be a first buffer for loan losses, providing some insulation against depositor losses. The idea that banks in which owners have more funds at risk would behave in a more prudent fashion also has some

plausibility. But time and again we have seen the failure of banks with high reported capital ratios. Part of the problem is that, with conventional accounting concepts of capital, what you see is not necessarily what you get. Better accounting can help – indeed good accounting and provisioning practices are pre-requisites for this whole approach – but each refinement of accounting practice typically makes more demands on information.

Probably the most important accounting difficulty in measuring capital is the most basic: how to determine a realistic value of the banks' loans. After all, accounting capital is essentially the residual value after subtracting other liabilities from total assets, of which loans typically represent a large fraction. A natural benchmark for valuing assets could be the fair market value, and this is the way to go for marketable securities and perhaps[14] property. But many loans are different: it is its private information about credit quality that allows a bank to profit from lending; the asymmetric information thus underlying much of the loan portfolio means that it could not be sold without encountering severe 'lemons' problems. Instead, some estimate must be made of recoverable value.

Every banker knows that accounting provision should be made out of income to establish a reserve against probable loan-losses. In stable conditions, past experience can provide a good guide to how big the provision should be, especially for routine consumer and small business loans; and econometric models are routinely used (by banks that really want to know) to project loan loss experience in industrial and some developing economies. But 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, past experience is no

guide, even to the banker. The high-risk environment and rapidly evolving economic structure of most developing countries obviously exacerbates the severity of this problem. Bank supervisors do try to classify loans into forward-looking categories such as "normal", "especially mentioned", "sub-standard", "doubtful" and "loss". Realistically, though, in the face of a resistant bank management and being on the light end of the asymmetric information scales, supervisors often can do little more than insist on certain provisions being made when the loan goes into arrears. That is especially true if the supervisory authority is under political pressure not to draw attention to problem loans owed by prominent persons, groups, or their associates. As such, the accounting measure of capital is often based on a backward-looking measure of loan quality that is unlikely to give much early warning of health problems.

Too many bankers believe that their loans, like all the children of the proud citizens of Lake Wobegon, are above average. As a result, they tend to under-provision. If the bank has reached a reasonable measured capital adequacy ratio only because it made no provisions against loan loss ($P = 0$ in the table) then we can safely say that its true capital is below standard. Even an insolvent bank (with a true P of 10 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.

Table 1. *Balance Sheet of the First Bank of Lake Wobegon*

Assets		*Liabilities*	
Cash:	10	Demand deposits:	100
Liquid investments:	20	Other debt:	30
Loans at historic value:	100		
Less Provision for loan losses:	-*P*		
Property:	10	Capital:	10–*P*

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 here. For example, if interest on a loan is in arrears by more than 90 days, accounting standards in many countries will forbid the bank from showing that interest as accrued in its income statement; but in Thailand interest accrual on non-performing loans was allowed for up to 360 days in 1997. And in most countries it is still more difficult to prevent a bank from concealing a non-performing loan simply by making a new loan to cover the repayment– a practice known as 'evergreening.' This may all sound obvious, but at times of widespread financial distress, the need for corporate financial restructuring tends to blur sound banking and accounting practice. When the alternative is to declare the insolvency of the bank, bankers' loan valuation can take on a more-than-usually optimistic flavor, and supervisors are hard-pressed to know with confidence where to draw the line. The supervisor's problem is even worse if the bank insiders have abandoned any attempt to maximize the bank's value, and have started looting its resources through self-lending or even fraud. Concealment will then be the main goal of the bank's relation with the supervisor.

Even if the problem of measuring capital were solved, we would be left with issues of risk and quality. Gaining nothing from the up-side risks, the regulator is more

concerned than the shareholder with risk of failure: accordingly, regulatory capital will tend to be higher than that which would be chosen by the bank, whose response may well be to increase the risk of its portfolio (for a simple illustration, see Calomiris, 1997). Regulators have not ignored this risk amplification, though first attempts to adjust for risk have been remarkably simplistic – for example often ignoring covariance between different assets in arriving at portfolio risk and applying arbitrary rule-of-thumb weights to different assets (e.g. residential mortgages = half the credit risk of commercial loans).[15]

A very recent (June 1999) proposal of the Basel Committee is to employ the assessment of private credit rating agencies to establish appropriate risk-weightings to be attached to different loans for the purpose of computing risk-weighted capital adequacy. This may reduce the critique that banks are at the mercy of arbitrary regulators' judgements, but is not a clear step forward: as the Committee itself acknowledges, the agencies have had a limited and mixed record in respect both of country risk and the credit-worthiness of corporate borrowers in the developing world. The potential for leveraging portfolio risk is highest for market instruments and derivatives, and here the tendency has increasingly been to employ statistical models based on historic covariances and concepts such as "value at risk", essentially measuring lowest percentiles of the probability distribution. This is a sound approach if its limitations are recognized, as is not always the case. As already mentioned, overly mechanical risk management systems have been blamed for some of the international contagion that has occurred in the past few years, and historical asset-price correlations have proved to be less stable than some investors had counted on.[16] But the speed with which positions, and therefore risk, can be changed makes direct supervision of the market risk of a bank's portfolio beyond the

scope of conventional procedures. Short of having continuous electronic surveillance of a bank's position, supervisors have to fall back on assessing the bank's risk management systems and procedures.

An alternative for the bank shareholder to increasing risk is reducing the quality of capital. If the shareholders have borrowed the capital from another bank (or, improperly, from their own bank) they may have much less at stake. Pyramid ownership structures can likewise have the effect of lowering the system-wide share of capital while preserving the measured capitalization of each bank. This kind of behavior has caused problems in several countries – Chile (early 1980s) and Mexico (1994) being well-documented cases of borrowed capital – and is often difficult to detect and even more difficult to prove, especially in countries in which close business or family links make arms length transactions less common. It illustrates yet another reason why the paradigm of "supervised capital adequacy" provides less protection than may appear.

It would be absurd to deny that ensuring adequate capital is a central goal for bank supervision – and in high-risk environments a margin of safety is even more critical. But all too often neither bank capital, nor the risks it supports, can be reliably measured. In developing countries the situation is worsened by severe information asymmetries, shading into concealment and worse, often by politically powerful bank insiders, combined with the heightened risk environment and uncharted conditions that prevail.

Reinforcements for the supervisors

Supervisors, then, are faced with information problems and pressures to forbear from enforcement. Often they are underpaid and demoralized, and this needs to be met with an incentive structure for supervisors more likely to elicit the kind of performance

which the paradigm of supervised capital adequacy took for granted. But the incentive structure needs to extend further: if bank supervisors are the lone rangers, some of the livestock will be lost and some stolen. Ensuring that bankers themselves have a strong incentive to keep the bank safe and sound is one part of this program. New approaches, some already being applied, also envisage co-opting other market participants by giving them a greater stake in bank survival. By multiplying the watchful eyes in this way, not only is the likelihood of early problem detection increased, but (especially where public opinion can also be mobilized) the political pressures are side-tracked. (Caprio, 1997, World Bank, 1998a).

(i) Incentives for the supervisors

Bank supervisors are generally paid less than bankers and the gap seems[17] to be much larger in emerging markets, where financial liberalization and the arrival of high-wage foreign banks have often had the effect of greatly increasing remuneration in the private financial sector. As a result not only do developing country supervisory agencies have greater difficulty in retaining skilled supervisors, but the opportunity for outright bribery is greater, as well as the possibility of a nice deferred bonus, in the form of a future job, for light supervision. Bonding regulators (Kane, 1995) through deferred bonuses, with losses deducted, would improve their incentives, but likely would be infeasible, at least for the present; significantly raising supervisory compensation, where it is a mere fraction of market salaries, likely is a necessary condition for improvements here.

Working both to upgrade skills and improve compensation are important initiatives, and the latter in particular meets political resistance in many countries; even the costly banking crisis in Japan has not yet clearly produced a change in the *amakudari*,

or 'descent from heaven' system, according to which regulators move to senior posts in banking. Authorities may attempt to ban future employment in the banking sector by supervisors, at least for a number of years, to reduce the likelihood of deferred compensation with poor incentive properties.[18] However, without higher compensation for supervisors, this will more likely make it even more difficult to attract capable staff, and merely increase the pressure for corruption during an official's career.

Although many may scoff at the ability of government supervision to be effective, the empirical evidence on this score is divided. Some (Berger, Davies, and Flannery, 1998) find that supervisory assessments in the United Stated appear to add value regarding the current condition of banks, but in predicting future performance are less accurate than bond and equity market assessments. However, a recent study, also for the United States (Flannery, 1998) shows that current bank examiner ratings, which are supposed to remain secret, help predict subsequent assessments in the subordinated debt market. Improving supervisory capacity thus appears to be important, and given that the pay gap is relatively narrow in the U.S. case, suggests that success in the compensation area may be key as well.

Supervisors' incentives to enforce the regulations can perhaps also be enhanced by reducing the discretion to forbear.[19] This mandated "prompt corrective action" is a potentially powerful tool against political pressures, though it remains somewhat controversial inasmuch as it removes a flexibility to circumstances that could be useful.[20] Moreover, prompt corrective actions, like U.S. accounting standards as the S&L crisis was becoming evident, can easily be shelved, all the more so when ownership of banks and corporations is concentrated. A crucial element here is to ensure that regulators have

adequate legal protection against law suits brought, for example, by aggrieved owners of intervened banks. The risk for a regulator of incurring personal liability even in the performance of official duties is a real one in many emerging markets, and has a chilling effect on regulatory intervention.

If informed public opinion is intolerant of bad banking and critical of undue regulatory forbearance, the political pressures that inhibit enforcement will abate. Some progress is being made on this front, including at the international level, but there is still much scope for enhancing the flow of reliable information and public awareness.

(iii) Incentives for the bankers

We have already noted that increased regulatory capital need not increase the bank shareholder's real stake in the business, let alone that of the bank insider. Only when staying in business is the best option does the bank stand much chance of survival. For this reason, the incentives facing bank decisionmakers have received increased scrutiny, with the essential idea being that regulation should be incentive-compatible, thereby overcoming some of the problems posed by asymmetric information. There are both carrots and sticks involved. The franchise value of the bank, i.e. the prospective risk-adjusted value of future profit flows, is not fully captured by the usual accounting, but it is key to bankers' incentive. Damaged by taxation and quasi-taxation and enhanced by restrictions on entry, increasing franchise value is an objective that has to be tempered by other considerations, including consumer welfare and budgetary needs, but achieving an adequate franchise is a pre-requisite for sound banking.

Nostalgic folk note that limited shareholder liability is one thing that has encouraged banks to assume excessive risk taking, as bank owners face unlimited upside

gains with limited losses. In addition to theoretical support for this notion (Stiglitz), historical evidence has emerged that U.S. banks that faced enhanced liability in the 19th and early 20th century behaved more conservatively that those with limited liability (Esty, 1996). Increased liability for bank directors (as for other company directors) has been a legislative trend in several countries, among which New Zealand, where it applies under specific circumstances (e.g. disclosure of incomplete or erroneous information).

And in industrial countries, there is growing interest in a pre-commitment approach toward regulation (Kupiec and O'Brien, 1997), according to which bankers agree with supervisors on the models and procedures they will use to evaluate their risks, and are subject to penalties for violating these procedures. More generally, the approach that is adopted by the authorities to resolving one crisis sets the scene and signals the incentives to bankers for avoiding future incidents – if that is, the models are reliable and the penalties reliably applied.

(iii) Incentives for bank claimants

Wherever there is implicit or explicit deposit insurance, bankers possess the option to 'put' their insured deposit liabilities to the taxpayers.[21] Without such insurance, the bank would decide on its capital and risk position with an eye to outsiders' ability to monitor that risk, and the price that outsiders will charge the bank for additional funds; even with some insurance, there is evidence that depositors do monitor banks, perhaps because the credibility of the deposit guarantee falls into question (Martinez-Peria and Schmukler, 1999). If 'the market' suspects that a bank is taking risks significantly in excess of the norm, then the interest rate that the bank must pay to attract funds presumably would rise, leading it to curtail its activities. A goal of some new

approaches has been to restore this discipline of private creditor monitoring and to increase the private production of information (rather than merely decreeing that transparency should be increased). This can be done by requiring banks to issue debt which is subordinate to all other claims bar equity capital. As well as providing an additional private buffer that will be drawn on before the taxpayers' funds, and establishing a new set of concerned watchful eyes, such a requirement can, through the market price of this debt, provide a useful signal of market participants' assessment of the health of the bank.[22] A scheme along these lines was initiated in Argentina in 1997; it specifies that the holders of the subordinated debt should be entities of substance which are independent of the bank's shareholders, and it requires issue of the debt in relatively lumpy amounts on a regular basis (Calomiris, 1997). As Kane (1995, p. 454) notes, "Just as coal miners watch canaries to warn them of bad air in a mine shaft, taxpayers can watch the changing value of obligations issued by coinsuring private sureties to alert them if and when the accounts of government sureties begin to emit unhealthy aromas."

Subordinated debt holders will demand better information and disclosure. Also to make sure that they monitor banks effectively, effort has to be devoted to ensure – such as by Calomiris' (1997) suggestion that they be required to issue abroad -- that they are at arms length from the banks who issue the paper.

Not only can subordinated debt help by forming a core of well-motivated and presumably informed monitors, who in effect can become the next generation of bank owners for institutions whose current generation fails, but it also provides a better balance between government and market monitoring. As mentioned, correcting this imbalance is

particularly important in developing countries due to the greater concentration and therefore higher likelihood of political interference

Into the unknown

Reaching even further beyond the supervised capital adequacy paradigm to find mechanisms that can work well in risky and unproven territory, regulatory thinking has begun to reassess the merits of liquidity requirements as well as intermittent blunt controls that can in some circumstances prove useful.

Of course it may be possible to reduce volatility as well as provide insulation. Opening the domestic banking market to ownership by reputable foreign banks can also serve to lay-off the risks of the domestic banking environment. Following New Zealand along this line, most conspicuous is Argentina, where about 45% of bank assets are in majority foreign-owned banks. Thailand has also partially relaxed its hitherto restrictive policy in this regard, and other countries are beginning to follow suit; the resolution of the Texas bank crisis, years earlier, followed this same course, though the 'foreigners' spoke the same language. In a sense, by importing reputable foreign banks, developing countries are getting safe- and sound-banking – or at least better diversification – for free.[23] Of course, foreign banks are no panacea, and populist fears that they would neglect the domestic small business borrower cannot entirely be allayed.

Another way to decrease volatility is to increase the size of the market. The economic volatility suffered by many smaller developing countries (as documented above) is partly because of their small economic size. To take one example, the GDP of the whole of Sub-Saharan Africa is no bigger than that of Pennsylvania. Or consider that 200 million people live in some 50 countries each of whose total money supply is less

than one billion dollars[24] Banks constrained to lend locally will routinely fail without enormous capital or substantial liquidity – just like unit banks' failure in the nineteenth century. Enlarging markets, such as by regional banking systems, or by letting banks from one country branch abroad or hold foreign securities, can lessen the volatility of their portfolios, though against this must be set foreign exchange risks, and the heightened problems of asymmetric information in many aspects of cross-border banking. In effect one can question whether small countries should attempt to have their own free-standing financial system at all.

Liquid reserve requirements have been a somewhat neglected insulator in recent years. Reserve requirements have been progressively lowered in developing countries and elsewhere (Williamson and Mahar, 1998). The neglect is due partly to new techniques and fashions that have made them redundant in their former role as a fulcrum for aggregate monetary policy, and partly because their quasi-fiscal use as a means of taxing banks and channeling funds to favored sectors and favored borrowers has rightly been seen as highly distorting and destructive. But eligible assets need not be confined (as they often used to be) to interest-free deposits at the central bank or other special instruments carrying below-market yields. Although liquid assets in no way offset loan losses, funds invested in risk-free liquid assets do at least represent a part of the portfolio that is not subject to significant credit risk.[25] These requirements are significantly easier to monitor, and forbearance can more easily be detected. They can be put in place fairly quickly in a growing system. And they do provide some protection against depositor runs or contagion that prevents the bank from rolling over its non-deposit wholesale funding.

Looking again at the balance sheet of the Wobegon bank of the previous section, we see that it could not easily withstand a failure to roll-over its bonds: to be safe against that risk, it should have chosen a more liquid portfolio.[26] Here again Argentina has been to the fore in imposing high liquid reserve requirements on its banks. But this is certainly because of the currency board rules that have been imposed on the Central Bank, severely restricting its authority to make liquidity loans. In this case the banks' holdings of liquid assets were crucial in enabling Argentine banking system to survive a 20% deposit outflow in the Tequila crisis of 1994-95 without abandonment of the currency board arrangement. Now liquidity ratios in Argentina, some of them (up to 80 %) held off-shore, amount to about 30 per cent of the system's deposits, and have continued to provide insulation through the market turbulence of 1997-99.

In the brave new world faced by developing economy banking systems, all of the refinements that have been proposed may not be enough, or they may be in part impractical. While the needed systems are being developed, and until the risk environment and banking practice settles down, there can be a case for introducing or keeping some blunt instruments that would be too distorting in the long run, but which protect from acute failures. Many of the mechanisms that are considered under this heading were used in industrial countries in the past, though often not primarily for risk-reduction purposes. They could include various forms of control or tax on foreign borrowing or capital inflows, ceilings on deposit interest rates – preventing reckless competition by unsound banks from destabilizing the whole system – and speed limits on the growth of bank balance sheets, or on the growth of credit to high risk sectors such as real estate. Such ceilings could have contributed to lessening or eliminating recent

crises *if they had been effective*. But experience shows that, if they are continuously constraining, such ceilings are soon evaded and as such might appear to have little chance of success. For example, bankers who want to lend to real estate can book the loan to a shell intermediary or even set up a nonbank intermediary of its own to do this business. And side payments in cash or kind have been a popular way of evading interest ceilings.

Still, blunt instruments do not have to be 100% effective, or even continuously binding, but rather merely have to slow the expansion where a bubble economy is emerging, while the government is upgrading other regulatory tools. If the ceilings are set in such a way as to bind only occasionally when the risks are highest, then they could be effective. Indeed, like the signal sent by the price of subordinated debt, when relatively high interest ceilings become binding, or moderate lending limits are tested, a powerful signal is sent for authorities to concentrate supervisory effort. Given the scarcity of such skills, blunt instruments should then be regarded as a tool in the regulatory arsenal. Even the relatively sophisticated Argentine authorities, for example, force banks to hold added capital as their lending rates rise above prime interest rates, a crude way to estimate the credit risk being assumed. Eventually, as the authorities and banks become better skilled in implementing a model-based approach to evaluating credit risk, this formula may be abandoned, but for now it contributes to the safety of the system. Identifying which intermittent blunt instruments can work well in which circumstances seems likely to be a fruitful area for further research (Honohan and Stiglitz, 1999).

Concluding remarks

Intermediaries in an ideal financial system will allocate funds shrewdly to a well-diversified mix of projects yielding high private (and social) returns without exposing the intermediary to a disproportionate risk of failure. Such a financial system serves as an absorber, rather than a magnifier of economic disturbances.

It is impractical to think in terms of an unregulated system for delivering this result, but recent regulatory failures certainly suggest that we are well below optimum performance in this regard. The sources of heightened regulatory failure in recent years: volatility of real and nominal shocks, the difficulty of operating in uncharted territory following regime changes such as financial liberalization, and the political pressures that can inhibit enforcement of prudential regulation, are all present in a heightened form in developing countries, and it is there that the most recent wave of collapses has occurred. But it is not only in these countries that a strengthening of prudential tools is needed.

Emerging market authorities have to cope, at least for the time being, with the current system in which large real and financial disturbances – either from domestic or foreign sources – threaten with some regularity. Tightening the regulation of domestic financial systems appears warranted, a course that already has been followed by some countries that experienced severe financial crises in the 1980s. Problems that loom particularly large in emerging markets both argue for a re-thinking of conventional approaches to government interventions in this key sector and point the way to specific paths to follow in adjusting the regulatory environment.

At the same time, some well-worn messages remain valid and are respected more in theory than in practice. Thus, problems would be fewer if there were: more

diversification, more balanced financial structures (for example as between debt and equity), the presence of foreign banks and, above all, better enforcement of both regulations and contracts.

Because financial sector participants will constantly attempt to get around rules that limit their profitability, regulation must be seen as an evolutionary struggle. Some of the new approaches that are only now beginning to be applied will have a limited life before the regulated entities find ways of nullifying their effect. Regulatory innovation will remain a constant challenge.

It would be easy for the pendulum to swing too far; to neglect the benefits of rapid economic growth supported by liberal and innovative financial systems. The set-backs in East Asia are very far from wiping out the huge improvements in prosperity in those countries. One does not have to factor-in the plausible Olsonian gains that can arise in post-crisis institutional renewal to believe that if the current correction was a price that had to be paid, it was one well worth paying. Prevention is not costless and a heavy repressive hand is not warranted. Yet we believe that governments can do better: that a richer regulatory pallet can be used to protect the financial system more successfully against crisis while still preserving its growth-enhancing effectiveness.

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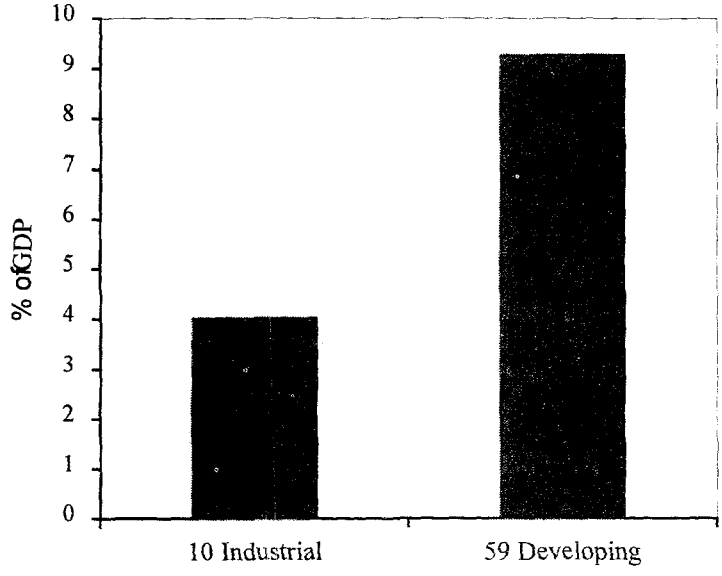
Figure 1: Mean Fiscal Cost of Banking Crises
Industrial and Developing Countries

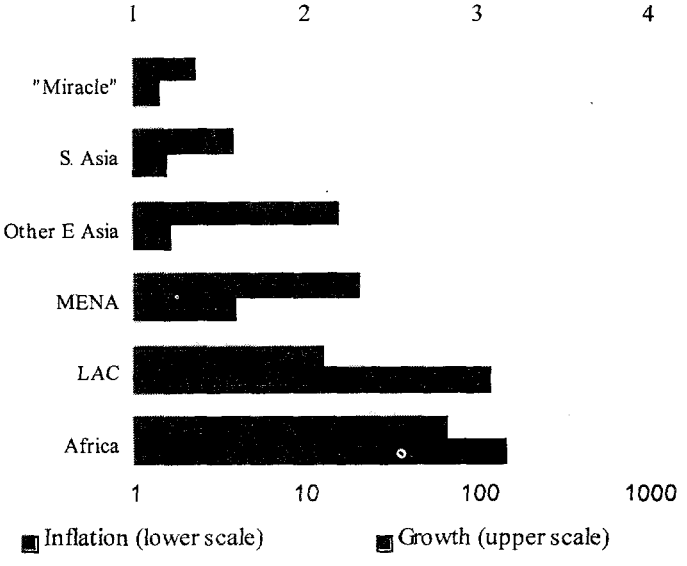


Note: Cost estimates are based on Caprio and Klingebiel (1997), Honohan (1997) and Lindgren, Garcia and Saal (1996).

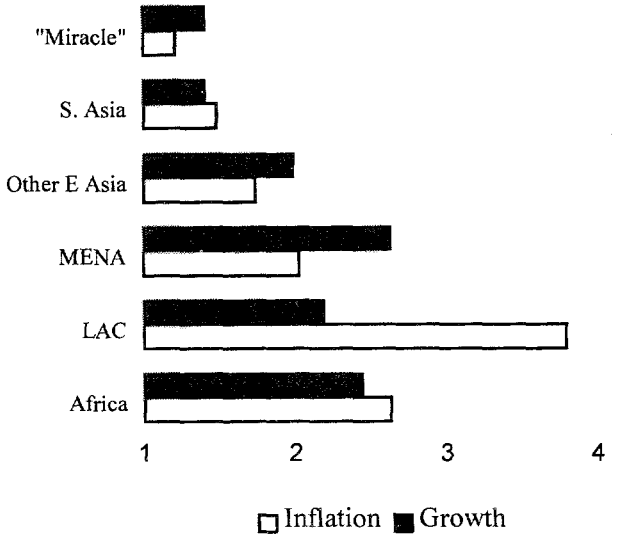
Figure 2: Volatility by Region 1970-97

Standard deviations of growth and inflation as multiple of industrial countries

(a) Regional means of standard deviations

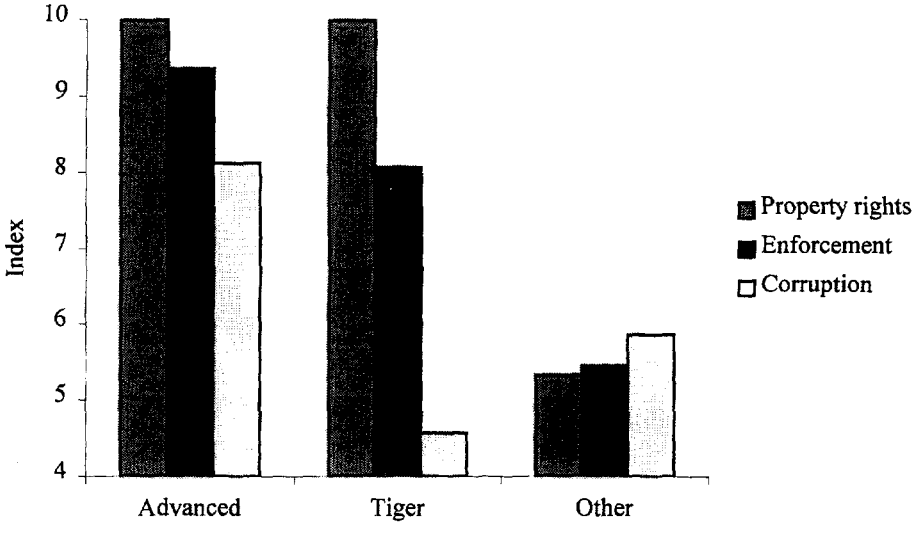


(b) Regional medians of standard deviations



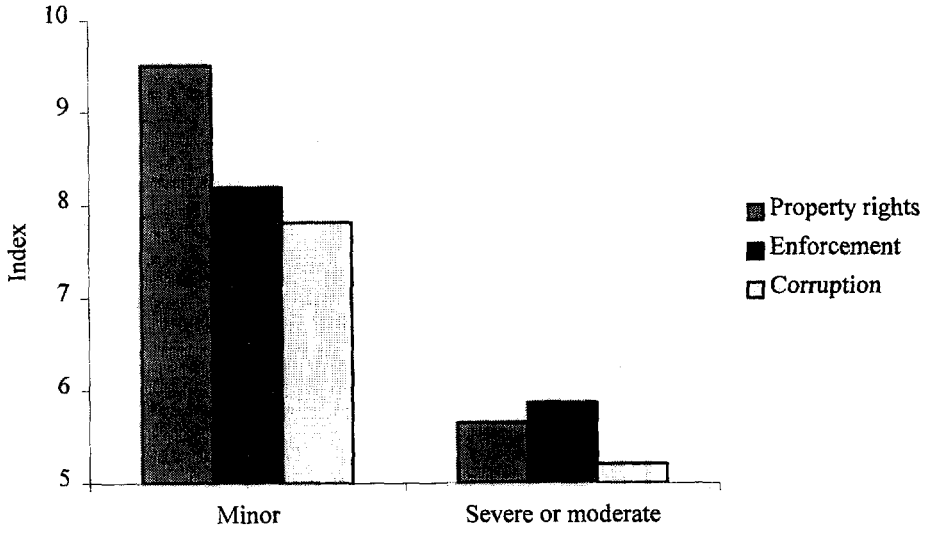
Note: The mean (median) for each group of countries of the historical standard deviations of GDP growth and inflation is expressed as a multiple of that for the industrial countries. Source: *International Financial Statistics*. Country groups represented are the East Asia "Miracle" countries, South Asia, other East Asia, Mid East and North Africa, Latin America and the Caribbean, and sub-Saharan Africa.

Figure 3: Quality of Administration by Level of Development
Average values: 17 Countries



Note: Advanced countries are: Germany, Japan, UK and US; "Tiger" economies are: Hong Kong, Korea and Singapore; Others are: Argentina, Brazil, Chile, Colombia, India, Indonesia, Malaysia, Peru, Philippines and Thailand. Property rights, enforcement and corruption indexes are normalized to a scale of 0 to 10. Source for the underlying indexes:

Figure 4: Quality of Administration and Recent Crises
Average values for 17 countries



Note: Severe or moderate problems: Brazil, Colombia, India, Indonesia, Japan, Korea, Malaysia, Peru, Philippines, Thailand; Minor or no problems Argentina, Chile, Germany, Hong Kong, Singapore, UK, US. Quality index: see Note to Figure 4.

Notes

[1] Caprio and Klingebiel (1997), Honohan (1997) and Lindgren, Garcia and Saal (1996) provide comprehensive accounts of banking crashes in developing countries that pre-date the East Asia crisis; figure 1 is based on this experience. The total fiscal cost of these crashes was estimated at $250 billion in mid-1996; for comparison, one recent estimate puts total loan-losses in the four worst-affected Asian countries at $130 billion (Armstrong and Spencer, 1998). By 1996, early-warning systems such as that proposed in Honohan (1997) and based on previous experience were flagging each of the Asian economies that subsequently experienced banking crashes, though all such prediction or alarm systems have a very high incidence of false positives (cf. Demirgüç-Kunt and Detragiache, 1999).

[2] The pressure placed on Brazilian banks by a climate of price *stability* after 1994 following years of high and volatile inflation provides an instructive exception to the general rule that instability is bad, but an excellent if somewhat paradoxical example of the effects of regime change (discussed below).

[3] The sequence of events in the East Asian crisis is recounted in numerous sources, e.g. Alba et al., (1998a,b), BIS (1998), IMF (1998), World Bank (1998b) and their interpretation has been the subject of a large literature, see Mishkin (this symposium). Alba et al. (1998b) in particular consider the role of volatility in the crisis.

[4] Burnside et al (1998) develop a model in which the revelation of future fiscal costs of a banking system bail-out causes the authorities to abandon a currency peg, in order to avail of future seigniorage financing.

[5] Onlending in foreign exchange to a corporation which itself is uncovered is almost as risky for a bank as being uncovered itself.

[6] The intriguing endogenous dynamics of these phenomena have been long-discussed in the literature (Fisher, 1933, Kiyotaki & Moore, 1997). The link with property booms can be traced back to some of the largest crises of the late 19th century, but these cases – in Italy, Argentina, and even Australia -- were small in cost relative to current crises, notwithstanding the higher degree of capital mobility in the earlier era (Calomiris, forthcoming).

[7] The agenda included removal of administrative controls on interest rates, bank-by-bank credit ceilings, rules for the allocation of credit to preferred sectors or borrowers and limits on new entry.

[8] The novelty of the stable exchange rate (tablita) regimes in place in the run-up to the Southern Cone crises of the early 1980s provides a good example of a false sense of security being created by policy change.

[9] Argentina had brought this to a fine art by the late 1980s with an elaborate system of automatic monetary compensation payments being operated by the central bank to eliminate the adverse effect on bank profitability of controlled lending rates and forced investment in unremunerative official paper. Speculation against the currency in 1989 resulted in this arrangement spiraling out of control as, in an attempt to stem deposit outflows, banks raised deposit rates to over 100 per cent per month, knowing that they would receive full compensation in subsidies from the central bank. (This system terminated in the Bonex plan of January 1990 which entailed the confiscatory funding of most bank deposits). Beckerman (1992), Giorgio and Sagari (1996).

[10] The widespread bank insolvency in the African Franc Zone in the late 1980s was very much of this type, with the additional complication of speculative outflows resulting from overvaluation of the exchange rate peg (it had endured for half a century). In the Franc Zone each government hoped that the multinational central banks might pick up the tab, or failing that, the foreign strategic shareholders of the local banks or – ultimately – the French government. In the event, these hopes proved not to be wholly unfounded.

[11] Could the fact that regulators held off intervening a large failing bank in Venezuela in 1992 have had something to do with official's ownership share in that bank? The eventual bill for the resulting systemic crisis was of the order of $7 billion.

[12] The Basel Committee comprises senior bank regulators from 12 industrial countries. Their landmark 1988 agreement on capital adequacy requirements for international banks was only the first in a series of accords governing common banking standards. In 1997, the Basel committee published a document setting out "Core Principles" for bank supervision. This was much less detailed, but of broader scope, and is supposed to present guidelines for developing and transition economies, many of which have indeed subscribed to the Principles.

[13] Extensive reviews of the formal theoretical literature are in Dewatripont and Tirole (1994), Freixas and Rochet (1997) and Bhattacharya, Boot and Thakor (1998).

[14] Though conservative accounting rules often prohibit a bank marking its property to market price if higher than book.

[15] The famous Basel 8 per cent capital is as a percentage of risk-weighted assets, with risk weights equal to or less than unity, and therefore it corresponds to a lower unweighted percentage. Additional capital loading is required for market risk, recognizing that, although long-term government bonds attract a zero credit-risk weighting in the Basel scheme, fluctuations in their market price can in reality make them highly risky for banks.

[16] For an account of the problems encountered in this area by the hedge fund LTCM, see Michael Lewis, "Surprises in the Aisles of Fund Supermarkets," *New York Times*, January 24, 1999.

[17] A World Bank survey is at present verifying this point.

[18] Some senior supervisory officials in the United States are banned from banking jobs for one year.

[19] The U.S. Federal Deposit Insurance Corporation Improvement Act (FDICIA) of 1991 embodied prompt corrective action and structured early intervention, mandating certain supervisory actions as banks' net worth deteriorates, and was the response to the regulatory forbearance that characterized the S&L debacle (see Kane, 1989, Barth, 1991).

[20] The abrupt closure of 16 small banks in Indonesia in the middle of the crisis in October 1997 arguably intensified the panic and prompted bank runs. Some see this as an excuse for forbearance; but it has equally been argued that there was still too much forbearance, and that there would have been less panic had the closures been more widespread and credibly final.

[21] Few countries have made any attempt to vary deposit insurance premia with assessed risk; there is a variation in the US but, as shown by Berger et al., the variation is very modest.

[22] It's not a panacea, of course, and the details matter: many failed S&Ls in the United States had uninsured debt on their books. However, it is possible that the price of subordinated debt was already discounting the regulatory forbearance that was occurring in the 1980s, and indeed that the debt holders were assuming that they would have been bailed out. Also, there was no cap on the interest rate on this debt nor, since it was not a regulatory requirement, was there any mechanism to ensure that debt holders were at arms length from the issuing banks. Lastly, as noted by Dewatripont and Tirole, the interests of holders of sub-debt do not exactly coincide with those of the depositors or the public interest more widely, which is both why they should be part of the monitoring of banks but also why they can only be one component of this process.

[23] Though the many African countries that welcomed the notorious BCCI in better times might not view it that way.

[24] Roughly the size (we note) of the World Bank's staff credit union.

[25] As such, high liquidity requirements go some way towards the narrow-banking model advocated by some. Note however, that there can be some disappointments here if assets prove to be less risk-free and liquid than banks were counting on.

[26] In theory, the central bank could meet the situation through the lender of last resort facility, but as already mentioned its room for maneuver can become quite circumscribed when bank runs and pressure on the exchange rate coincide.

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