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DIAGNOSING BANKING SYSTEM FAILURES IN DEVELOPING COUNTRIES

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I. Introduction and Summary

As the number of countries experiencing costly banking system failures continues to grow, attitudes have shifted. From being isolated instances whose reasons may be explored on a case-by-case basis, systemic failure is beginning to be seen as a global problem with common causes, requiring urgent, radical and widespread policy action.

No type of country has been free of these problems. Big countries such as the US, Japan and Brazil, small countries such as Finland and Kuwait; Countries in transition from Estonia to China; High inflation countries such as Zaire, low inflation countries such as Cameroon; Rich countries such as Norway, poor countries such as Equatorial Guinea.

The prevalence of banking system failures has been at least as great in developing and transition countries as in the industrial world. Resolution costs in the order of $250 billion in these countries have been incurred. These costs have partly been borne by depositors and other creditors of failed banks, but it is largely governments who have, one way or another, footed the bill.[1]

Although some of the costs are more in the nature of transfers than pure economic losses, the magnitude of the problem cannot really be doubted. It reflects a waste of investible resources in countries where both the potential productivity of capital and the need for sound credit decisions are very high. Furthermore, the assumption by government of large and unforeseen bail-out costs can destabilize programs of fiscal consolidation as well as adding to the deadweight cost of taxation.

No doubt lessons have been learnt, and some mistakes that have led to bank failures may be avoided in future. But the way in which patterns of systemic financial failure have recurred around the world in recent years gives cause for concern that the current wave of crises may not yet be drawing to a close, and that it may soon be succeeded by another wave.

Isolated bank failures are inevitable, and it would be unwise to aim for zero tolerance. What can be avoided is widespread systemic failure, where a large part of the banking system is paralysed, and this is the focus of the present paper. Section II describes the nature of the costs of such crises and examines the magnitude of recent episodes in the developing and transitional world.

Widespread failures have usually occurred during a period of increased vulnerability that can be traced back to some regime change, induced by policy or by external conditions. Section III notes that, though systemic crises display some common features across countries, a small number of contrasting types can be distinguished. In order to help forestall future systemic crises, it is necessary to be aware of these different patterns. We describe the contrast between

[1]Recent cross-country surveys include Caprio and Klingebiel (1996) and Lindgren, Garcia and Saal (1996).

epidemics of the *macroeconomic* and *microeconomic* varieties, and between these and the syndrome of *endemic failure*, typically associated with pervasive government involvement in the banking system. It is the first, macroeconomic, type that has been most familiar in the industrial world, but the others have been more common in developing and transition economies.

Knowing the types of crisis that can occur, and alert to regime changes that can heighten vulnerability, we should be better placed to have early warning of crises. Section IV discusses quantifiable indicators, some of which are already available, and others which could quite easily be collected, perhaps by an international organization, and sifted for advance indications of imminent crisis.

Section V turns to the question of prevention. *Macroeconomic* stabilization policy is important for maintaining financial sector health, and should not be derailed by a short-term fear of revealing financial sector weakness. An energetic theoretical debate about refinements should not be allowed to conceal the broad consensus that exists on the regulatory structures required for limiting *microeconomic* weaknesses, though some quantitative adaptation is required for developing and transition economies. Among possible refinements, the idea of "speed limits" is the least problematic. *Political* interference is the Achilles heal of any regulatory system. In order to enhance the political attraction of regulatory enforcement, we consider the options of "narrow banking" and of greater disclosure.

Often thought of as a threat, increased globalization can also be turned to advantage, with increased ownership links potentially strengthening the resilience of a small economy's banking system. An international seal of approval, whether from private rating agencies, or through a new public collaborative initiative, also offers favourable prospects.

II. The Costs of Banking Crises

1. Nature of the costs

Traditionally, the major concern surrounding banking crises has related to the potential of a rapid and contagious escalation resulting in disruption to the payments system and to the entire functioning of the economic system. More recently, the direct financial costs of the crisis have been center stage, especially because of the frequency with which governments or monetary authorities have assumed some or all of the burden.

(a) *Direct costs*

By direct costs, we mean those deriving directly from the balance sheet deficiencies of failed financial institutions. These deficiencies correspond to losses incurred by depositors, government or other creditors of the banks, and, along with the shareholders' losses, are the most conspicuous aspect of the matter. Underlying the net cash payments involved are distributional issues as well as economic costs in the form of waste of resources.

Distributional aspects

Although depositors and other creditors of banks may have recognized that their claims were

not wholly secure, it is fair to say that most depositors consider the risk of loss small. Furthermore the risk is not something against which protection through diversification is cost effective except for large corporations. Accordingly, bank failures impose arbitrary costs on depositors.

From the point of view of the economy as a whole, some of these costs may be solely a distributional matter. For example, the losses of a bank that fails because of an unsuccessful speculation in the foreign exchange market show up as profits of its counterparty. In this case, there has, at a first approximation, been no net economic cost in the sense of real resources having been wasted. The economy is not pushed from its production possibility frontier by the speculation. However, if a large segment of the banking system of a country has been on the wrong side of a speculation on the currency, not only will there by net costs for the country as a whole (to the benefit of foreigners) but if their behavior has distorted the exchange rate for some time, this may have led to a misallocation of real resources by non-financial agents in the economy.

A bank that fails due to straightforward fraud can be viewed in a somewhat similar light. The analysis here is the same as for theft in general. At one level the perpetrator has benefitted simply at the expense of the depositors or others - a distributional matter. But in a wider sense the existence of fraud may itself create distortions, not only by discouraging potential market participants who fear that they will become the victims of fraud, but also inasmuch as the need to avoid detection will often induce the perpetrator of fraud or corruption to take steps that result in collateral economic damage. Resource costs may be incurred that are well in excess of the financial resources transferred to the perpetrator (Shleifer and Vishny, 1993).

Wasted resources

But bank failures usually also reflect misallocation of real resources inasmuch as loans that are not repaid often represent real economic ventures that have been unsuccessful. A loan to build an office block that remains empty for a decade is revealed *ex post* to have involved economic loss. Now, in an uncertain world, it is important not to count every *ex post* economic failure as reflecting an *ex ante* misallocation of resources. A large bank in a diversified economy will rarely fail if its loans are priced to reflect the underlying risk, but this may not be the case for a small bank, or one serving a restricted market in which risks cannot readily be diversified. Small developing countries often present a market in which risks, diversifiable at the level of the world economy, remain highly concentrated at the national level. Banks whose pricing of loans has been at what might be thought of as a socially optimal basis, taking account of the international diversifiability, may still fail if their own portfolio is not actually diversified. For example, it is commonly observed that regional banking crises in the US during the 1980s would have passed off with much less institutional failure had there been a nationwide banking system serving to pool the risks.

In sum, just as individual loan losses should be assessed in the light of the risk and return characteristics of the overall portfolio of the bank, the costs arising from bank failures may partly reflect inadequate possibilities for risk-pooling at the level of the banking system and the economy as a whole. The true economic costs in the form of wasted resources resulting from banking practices that lead to failure are probably smaller than the direct financial costs.

(b) Systemic costs

Additional types of cost are discussed in the literature and indeed represent part of the rationale for public intervention in the form of regulation and deposit protection. In particular it is argued that externalities arise in banking failures through contagious panic, disruption of the payments system and loss of information capital.

Contagious panic

Undoubtedly the failure of one bank leads depositors to reassess the viability of others. If they are not fully confident of prompt and effective deposit protection, they may panic and run other banks that do not in fact have an underlying solvency problem. Absent liquidity support, such banks may not be able to realize their assets in time to avoid failure.

However, recent literature casts some doubt on the idea that many sound banks fail as a result of contagious runs.[2] Indeed, it appears that the banks most affected by runs are often those that were truly insolvent before the run.[3] This is not only because the first to run are relatively better-informed large depositors, but also because, when they run, depositors run to what they perceive as "safer" assets, whether they be stronger banks, currency, or foreign exchange. A run to stronger banks need not require any policy action if these strong banks are sufficiently well informed to be able to distinguish sound from insolvent partner banks in the interbank market (and provided that market is sufficiently competitive to rule out the possibility of predatory behavior). Even a run to currency can be readily offset by monetary policy intervention (though this is not as easy to accomplish without public losses, as all too often the central bank, in trying to finance a general run to currency, has ended up lending to the insolvent banks). A run to foreign exchange cannot so easily be dealt with, but in that case the loss of confidence has evidently spread beyond the banking system.

Although the recent literature is somewhat extreme in its reaction to earlier preoccupation with the costs of contagion, it does appear that the quality of depositor and bank information is higher than was believed. Given the availability of monetary policy instruments to offset the effects of bank runs, it is not clear just how large an additional allowance one has to make for contagion costs in assessing the global costs of banking crises over and above the direct costs that have already been documented.

Other forms of contagion or propagation are also possible. An over-optimistic bank, unwittingly doomed to failure, may contaminate others with its optimism, as they partly rely on

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[2]Kaufman (1994), Benston and Kaufman (1995); but see Duguay's discussion of the latter paper.

[3]The example of Continental Illinois Bank is often provided: this bank received massive liquidity support following a run by uninsured depositors (mostly foreign banks). Although it survived the run, in the event, the bank proved to be insolvent. Many other examples from developing countries suggest that withdrawals by depositors are remarkably well-founded. The Zambian branch of Meridien bank was closed by the authorities in 1995 after they had provided extensive liquidity support to meet depositor withdrawals. Inspection of the bank's books reportedly revealed an estimated deficiency equal to the total of the Zambian Central Bank's assistance. In the CFA franc zone, refinancing by the Central Banks represented a normal instrument of credit policy. However, it was found in general that the banks most indebted to the Central Bank proved to have the largest capital deficiencies.

observing peer behavior to expand their own information set. Reckless competition from an insolvent bank may upset the equilibrium of a sound banking system and result in riskier behavior by all. These too are contagion effects of bank failure, though less often discussed as such.

Payments system

Turning to the payments system, there are three aspects to concerns here. First is the consideration that bank failure may result in a freezing of deposits. The existence of liquidity constraints mean that freezing of deposits may be costly even if the depositors are ultimately repaid with interest.

Second, there is the fact that the banks and economic agents are linked in a chain of short-term credits resulting from the use of cheques and other means of payment processed through the banking system. Thus an economic agent's solvency may depend on the performance of a bank with which she has no direct dealings, if a payment which she is to receive should be routed through that bank. Banks with otherwise prudent lending policies may find themselves in difficulties because a counterparty bank fails. This aspect is in essence no more than a hidden form of credit risk, but this form of risk is difficult to monitor, and the scale of possible losses is large.[4]

Third, banks are indispensable for the efficient and reliable delivery of payments for goods, services or assets. If a substantial part of the banking system fails, then it may be difficult and costly to accomplish large or long-distance payments with any degree of reliability. Availability of other payments-related services may also be impaired, such as the possibility of reducing the risks associated with exchange rates changes through forward transactions. The prolonged substantial breakdown of the payments system in the former Soviet Union illustrates the problems that arise.

These costs will be ongoing as long as the banking system is in distress and until it is rehabilitated. The magnitudes could be high. Admittedly, a well-functioning banking system will provide these services for perhaps a couple of percentage points of GDP,[5] but this values the services at their marginal cost when readily available. If scarce, the marginal cost could be much higher.

Information capital in credit appraisal

Finally, the externalities related to the provision of loan services. Recent literature has laid emphasis on the role of the banking system in acting as a repository of creditworthiness information. This stock of information is crucial to enabling in particular small and medium-sized enterprises have access to external credit. Through a continuing relationship with their

[4]Especially when one considers the magnitude of off-balance sheet items incurred in such aspects of the payments system as foreign exchange contracts. *Ex post*, the losses arising from this source are presumably counted in the direct costs already described.

[5]An upper bound would be the value added of the banking system, usually less than 5 per cent of GDP except for the most advanced countries. But this value added is used to provide loan and deposit services etc., as well as payments services.

bankers, such entities establish a creditworthiness record without which they would likely have to curtail their operations. The failure of a bank may result in the loss of this information capital, thereby impeding economic activity. Even if the scale of the loan-loss experience in many recent banking crises suggests that the value of the information capital available to many of the banks concerned may not have been very high, nevertheless, the disruption to financing for innocent firms can be severe, and can lead to macroeconomic recession.

(c) *Government assumption of direct costs*

Recent experience shows that governments generally act to protect[6] the interest of depositors of failed banks and often the claimants of nonbank financial institutions. As a result, the direct costs of the collapse have tended to find their way substantially to the budget thereby being borne either by the taxpayer, or by those would have benefitted from government spending programs that are crowded out by rescue costs.

Not only does such this entail deadweight losses, but sudden arrival of a lump-sum charge on the budget, often with only limited possibility for deferral of the spending over time, can have wider psychological and political impacts, such as potentially derailing a medium-term fiscal strategy, creating a confidence-based collapse in foreign exchange markets. Indeed, the prospect of having to cope with additional expenditure of several percentage points of GDP often has the effect inducing policy-makers to delay dealing with the crisis in a comprehensive manner, adopting instead temporary palliatives.

2. Scale of direct costs

The term "resolution cost" is often used as the sum of the outlays made by government or its agencies to make creditors of the bank whole together with uncompensated losses of creditors. Focussing on the direct resolution costs, it is evident that the scale of recent financial sector crises is large - ranking with, and in several cases exceeding, the biggest financial crises in history. Thus the fraud at BCCI dwarfs such famous financial frauds as the Portuguese bank note scam (Kisch, 1932); although dozens of countries have recently had proportionately larger losses in banking crises than in the US banking and thrift failures of the late 1980s these in turn were larger even than the much more traumatic US failures of the early 1930s; the Chilean crisis of 1983 resulted in losses which, as a percentage of GDP, are more than twice those associated with the South Sea bubble of early 18th Century Britain. Thus, while it is often observed that the period 1950-1975 was unusually free of bank failures, the indications are that recent experience is not just a return to financial sector instability on a scale familiar before 1950: these crashes are unprecedented in their size and frequency.

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[6]At least partially. But depositors have often lost something either because of long delays in refunding depositors' money without interest (Guinea and Thailand), or simply because the payout was limited (Baer and Klingebiel, 1996). That is why, even where covered by the rapidly expanding number of deposit insurance schemes (Kyei, 1995), it is observed that large, and well-informed depositors have often removed their funds from a failing bank before the end. Withdrawal by uninsured depositors is faster: although Philippine deposit insurance only provided for a limited ceiling on coverage, it was reported that around 90 per cent of deposits remaining in banks that failed in the 1980s were covered by the insurance.

The increased magnitude of the costs is not due solely to the fact that the financial sector itself has grown in proportion to economic activity, but also because many episodes have involved the failure of a large segment of the financial sector, and average losses per institution which have represented a high proportion of the institution.

This is not the place for a full review of the rapid growth of financial intermediation in the economy and the associated jump in the scale of indebtedness. If we include off-balance sheet or contingent claims on financial institutions in order to arrive at the maximum scale of their indebtedness, we arrive at an astronomical figure - equivalent in many countries to a multiple of GDP. Of course, much of these off-balance sheet items are inter-related and in most eventualities would be largely self-cancelling. However, even traditional intermediation now represents a huge figure, as illustrated by the (admittedly extreme) case of Japan where net liquid liabilities of the financial sector amount to about twice GDP.[7] This growth appears to have been driven by technological innovation in banking and facilitated by regulatory liberalization (itself in turn accelerated by the growing distortions and evasion of existing regulations). And it has not been limited to the industrial world. Between 1980 and 1993 an unweighted average of the ratio of M2 to GDP in 59 developing countries increased from 28 per cent to 35 per cent; the weighted average from about 32 per cent to about 48 per cent.[8]

The second component, namely the high proportion of the financial system represented by institutions found to be insolvent, is more a feature of developing and transition economies than industrial ones, but it does contrast very sharply with the experience of the 19th Century panics in Britain and the US, where insolvency of a relatively small number of institutions led to a loss of confidence and triggered banking runs which affected the wider system only temporarily. In contrast, in many Transition economies most of the major banking institutions were found to be insolvent. The same was true of the Southern Cone crises of the early 1980s, and in a number of African countries. The system-wide nature of these failures may be attributed partly to lack of diversification inherent in the economic structures of the countries concerned and their vulnerability to specific shocks, but also (as we will see) to the fact that much credit was directed at the behest of government, and without much regard to repayability.

Third, recent bank failures in developing countries have often not occurred until a multiple of the bank's capital has been lost. If depositors' confidence is unimpaired, banks can survive with negative capital for a considerable period of time. If only a small portion of the bank's assets are earning, the need to pay operating costs as well as interest on deposits and on liquidity borrowings will eventually leave the bank with no cushion and vulnerable to even modest

[7]Accordingly, the 6 per cent of Japanese financial system loans reported as non-performing in 1995, though a relatively small fraction in comparison with the situation in many developing countries recently, amounts to the equivalent of over $400 billion.

[8]Taking an average 6 per cent of GDP resolution cost, it could be said with some over-simplification that about one third of the increase in banking sector liabilities was misplaced. Actually, despite the correlation between per capita income and monetary depth - rationed economies aside - there is a weak correlation between the banking sector resolution costs and the 1980-93 increase in M2/GDP, even after controlling for size and openness.

withdrawals. But until that point is reached, the bank can continue to operate, provided its true situation remains concealed. The timing of failure may be advanced, if not by regulatory intervention, then by the tendency for an insolvent bank's owners to adopt risky behavior or worse, in order to make the most of a bad situation.

Traditionally, a bank could lose no more than 100 per cent of its assets. However, off-balance sheet risks (as exemplified in Barings' case) and fraud could potentially leverage the losses to more than this, and may have done so in Venezuela. Even ignoring such extreme cases, the reported percentages of sub-standard bank loans has been very large indeed in many problem countries. Some of the highest figures reported[9] come from Transition economies, such as the Kyrgyz Republic, where recovery of 80-90 per cent of the banking systems loans was said to be doubtful. Other extremely high system-wide figures for non-performing loans were recorded in the CFA zone in Africa, for example 75-80 per cent in Benin (1988) and Congo (1994), where the role of credit, fiscal and exchange rate policies were intertwined.
Although the definitions vary considerably, the percentage of substandard or non-performing loans reported for 58 banking systems include 17 countries with more than 50 per cent; a further 17 with more than 25 per cent; and a further 9 with more than 15 per cent non-performing loans - a percentage which Sheng (1996) regards as the point of no return beyond which a crisis is inevitable.[10] Of course, some non-performing loans may resume payment or may be partially recoverable, though this is less likely if the bank ceases operations.[11]

The estimated global cost of resolving recent banking crises is dominated by the figures for Japan and the United States, because of the size of their economies. Nevertheless, and although the data cannot be considered firm, the estimates available for 35 other countries with banking problems since 1980 indicate that resolution costs will have averaged 8 per cent of GDP, a fraction that in 1996 terms would come to over US$175 billion for these countries.[12] For 30 developing and transition countries alone the corresponding figure is about US$130 billion. To

[9]The cost estimates are chiefly drawn from Lindgren, Garcia and Saal (1996) and Caprio and Klingebiel (1996).

[10]More precisely, Sheng's 15 per cent refers to the excess of non-performing loans over the stock of provisions. Because non-performing loans may accumulate and stay on the banks books, an exaggerated picture of the bank's prospects will be obtained if the provisions that have been made in respect of these loans are not subtracted.

[11]Best bank supervision practice does not just look at whether a loan is performing, i.e. with all due interest and principal payments received. Although modern bank regulations prohibit the treatment of loans that are more than several weeks in arrears as yielding interest, and require specific provision to be made against them, arrears are not the only indication of problem loans. A more synthetic assessment is carried out, leading to all loans being classified into such categories as "unimpaired, substandard, doubtful and loss", reflecting differential prospects for recovery, with the last two categories typically requiring provisioning of up to 50 per cent and 100 per cent respectively.

[12]In principle, the figure should represent the negative capital of all failed institutions at the time of failure and brought to present value terms. Some authors report rather larger figures that double-count interest payments, or that include the amounts required to bring the banks' capital up to regulatory standards.

put the latter figure in perspective, it is more than four times the total of IMF credit outstanding worldwide. Employing fragmentary data from other countries[13] suggests a total cost for all developing and transition economies at almost double that, or in the region of a quarter of a trillion dollars.

Given the wide margin of error in the resolution cost estimates, it would be unwise to place much reliance on an examination of cross-country patterns. Indeed, few of the main economic characteristics of countries appear to be correlated with the relative size of resolution costs. The only noteworthy correlation revealed by regression analysis suggests that disproportionately higher resolution costs seem to be experienced by economically smaller countries as measured by GDP.[14]

3. Why now?

Before looking at the pattern of events in detail, it is worth asking why banking failures emerged in such a widespread manner in the 1980s and 1990s, especially as these have not been decades of particularly low growth. Although it is customary to point the finger at financial liberalization as being the main causal factor, and it is certainly an important part of the story, it is instructive to think of liberalization itself as an endogenous part of a process involving deeper trends. Thus three major factors contributing to the emergence of such widespread banking crises have been (i) the increased volatility of real and especially nominal variables in the last quarter century, (ii) the fact that increasing financial depth was not matched by a commensurate increase in banking capital and (iii) a recognition factor according to which bank insolvency problems have become much more likely to be recognized as such.

The increased volatility of real and nominal macroeconomic variables since the early 1970s needs no documentation. Arguably, it is the increase in nominal volatility, in which the abandonment of the Bretton Woods regime of exchange rates was an important staging point (McKinnon, 1996) that has mattered more for banks. Any institution with fixed liabilities is more likely to fail if the value of its assets is more volatile unless it operates with a higher

[13]This fragmentary information is employed as follows. There are 30 developing and transition economies for which resolution cost figures are available from the sources mentioned in a previous footnote. For 38 further countries an estimate of the share of non-performing loans is available but no direct estimate of the resolution costs has been made; each of these countries is here assigned an estimated resolution cost (per cent of GDP) equal to the predicted value from a regression of resolution costs on share of non-performing loans for the 23 countries in respect of which both numbers are available. These 68 countries form the universe on which further statistical analysis is performed as described below. A simple grossing up procedure to cover 40 other countries which have been identified as having suffered significant problems increases the global total by 12 per cent to the figure given.

[14]On average, halving a country's size (GDP) increases the resolution cost as a share of GDP by one tenth. This correlation is robust to the inclusion of other explanatory variables. Another variable which seems to significantly reduce the costs is the rate of import growth, possibly summarizing one dimension of economic openness.

cushion of capital. Few developing country banking systems could claim a higher capital cushion during the 1980s. The correspondingly increase in leverage exacerbated the effect of higher macro volatility. This increased exposure was masked by the accelerating inflation of the 1970s, accompanied by interest rates that did not fully compensate for the inflation. What was, *ex post,* a low real interest environment eased the burden on borrowers and thereby sheltered banks. (Depositors lost, of course, but through unanticipated inflation rather than bank failures). This experience may have lulled banks into a false sense of security. The lower inflation of the 1980s, the greater responsiveness of nominal interest rates to inflationary expectations, and the much higher average world *ex ante* real interest rates all served to reverse these protections of the 1970s and reveal the true impact of real sector volatility on banking risk.

At the same time, the growth in financial sector depth and especially in the fixed liabilities of the banking system meant that monetary assets were being backed by ever-riskier assets. Assuming, not unreasonably, that well-run banks will prefer to finance the least risky types of credit[15] it is likely that a significant growth in the liabilities of banks will be associated with an increase in the riskiness of the asset portfolio, except to the extent that the supply of low-risk credit also increases.[16] A riskier asset portfolio means a heightened risk of failure.

After all, the degree to which a banking system, even capitalized at 8 per cent, can assume the risks of the economy are limited. The volatility of aggregate wealth is far too high[17]. Financial engineering can diversify away much risk, but it cannot diversify the volatility of aggregate wealth. Excessive reliance on the deposit instrument means that an increased fraction of financial volatility will show up in intermediary failure, and that is what we see.

Finally there is the issue of recognition. The origins of many of the problems now being dealt with go back a long time. It is clear that the well-publicized crisis of the US Savings and Loans has sensitized policy-makers worldwide to the existence of banking problems and to the possibility that weaknesses of banks may be attributable to bad banking and bad policies as well as to bad luck. For example, a need to increase the capital of state-owned banks might well have been presented as progressive and developmental in the 1970s. By now it will typically be interpreted as a failure. The new interpretation is not only driven by a new awareness of bank failure, but also by greater reliance on market tests for policy measures: a delinquent bank loan clearly fails the test. So not only are banking system failures more prevalent, but they are being recognized more readily.

III. Patterns of Systemic Financial Failure

[15]Given the structure of its liabilities, a prudent bank will be outbid for riskier business by a non-bank lender which is less highly leveraged.

[16]Of course the risk profile of the aggregate financial portfolio cannot really be decomposed in such a simple way: the argument here is a heuristic one. For example, after credit controls were removed in the UK in the early 1970s, it was observed that individual enterprises increased both their use of credit and their bank deposits. Thus the supply of low-risk credit opportunities does also expand to some extent.

[17]For example, the standard deviation of quarterly changes in real stock prices for 32 countries 1970-95 is 13 per cent. The quarterly standard deviation of detrended stock prices for 24 countries is 49 per cent.

1. Three failure syndromes

Systemic failures in the financial system are typically complex and they differ one from the other. In order to understand the processes involved it is necessary to schematize and simplify, but extreme reductionism is misleading. As the causal mechanisms are not fully understood, it is unwise to rely on a classification by supposed cause. Instead, as is done with diseases which are not well understood, we can classify by the characteristic group of symptoms displayed - the syndrome.

Many banking system crises in developing countries seem *endemic*, displaying a recurrent pattern of distress with insolvency and illiquidity (usually traceable to pervasive government involvement) persisting for years. Other countries have experienced *epidemics*, sometimes involving *macroeconomic* collapses, sometimes not. Each of these three categories shares some symptoms with the others, but a review of the characteristics of a large number of developing country cases suggests that the three syndromes are distinctive. The search for warning signals and prevention mechanisms needs to take this into account.

(a) *The macroeconomic epidemics*

The degree to which financial systems can absorb macroeconomic shocks without suffering institutional failure obviously varies enormously. But some banks survive even very severe macroeconomic shocks, suggesting that other banks could have too, had they followed policies designed to insulate themselves from disturbance. By the same token, one must be sceptical of assertions that a banking system has collapsed because of a macroeconomic shock. Some banking systems have survived very severe macroeconomic shocks.[18]

The more interesting cases are what we may call endogenous macroeconomic disturbances, and specifically an endogenous boom and bust cycle, where banks, riding on a wave of optimism, over-lend to projects which have poor long-term prospects. The very process of lending contributes to the temporary success of these projects as borrowers bid up the price of land and other property, and as wealth effects on consumption raise the profitability of most economic activities.

Thus, in contrast with the other cases to be considered, the role of macroeconomic fluctuations here is not simply to act as a trigger which will reveal the underlying weakness of the banking system. Instead, the banking system's behaviour (especially over-optimistic lending decisions) itself amplifies the upturn, thereby increasing the share of lending based on unrealistic prices and price trends. When the bubble bursts, the banking system is coping with a macroeconomic downturn which, at least to a degree, is of its own making.

Widely discussed in the 1930s, this endogenous boom and bust story became relevant again with the correlated experiences of Argentina, Chile and Uruguay in 1979-83, and subsequently

[18] An exception may be made for war. The collapse of banking systems in Liberia, the Lebanon and Kuwait (1990-91) need not be attributed to deficient banking practices. Likewise the political crisis in Panama 1988-89 may be taken as so severe as to have outstripped the resources of even the most conservatively managed banking system.

with the Nordic banking crisis of 1987-94 and that of Japan since 1992.[19] The case of Mexico, 1994 is also relevant. At the international level, the lending boom to developing countries in the late 1970s and until it burst in 1982 has important points of similarity.

Of course, while the macro elements are the most conspicuous here, for the endogenous boom to take place there certainly need to be widespread microeconomic deficiencies in bank behaviour, as well as errors in macroeconomic or monetary policy management.

On the micro side, unless the system is very concentrated, no one bank is large enough to generate an asset price boom on its own. Instead, it is frequently observed that bankers "hunt in herds". Such behaviour may be individually rational behaviour, for example if each banker is attempting either to learn by observing the behaviour of others, or to avoid criticism (from senior management, from shareholders, from regulators) by adopting market norms for lending. A shift in bank views on sectoral creditworthiness may be temporarily self-fulfilling, especially if directed to sectors such as property, where the weight of money lent may drive up the asset price thereby generating a further demand from beneficiaries or would-be beneficiaries of the boom. Lending to support speculative purchases on the stock market can also work this way, whereas lending for manufacturing, agriculture or consumer durable purchase is less likely to have strong asset price effects.[20]

Some other micro-markers of bad banking will also be present, such as self-lending (for who would want to be left out of the benefit of the asset-price boom?) and excessive risk-taking through the use of leveraged asset-price derivatives.

In terms of macroeconomic policy it should be noted that the credit expansion involved in the boom stage of this kind of cycle will in turn require adequate base money in the system. That is why capital inflows are often present at least in the early stages. *Ex post* appropriate monetary policy would intervene to drain the monetary system of the base money resources needed to support the credit boom. However, this may not be easy, especially if a tightening of monetary conditions increases interest rates, thereby encouraging an acceleration of capital inflows. Besides, monetary authorities focusing on goods price inflation may not attach comparable importance to asset price inflation. But this is the time to remember that the major function of the central banker is to "take away the punchbowl just when the party is getting under way".

The unwinding of this kind of credit-driven boom can be quite sudden. Withdrawal of foreign capital may slow the expansion of credit, thereby halting the property price spiral, and even placing the banks under liquidity pressure. In the circumstances, attempts by the banks to call-

[19]Sources for Argentina: Balino (1991), Beckerman (1992), Giorgio and Sagari (1996), Petrie and Tybout (1985); Chile: Brock (1992), Galvez and Tybout (1985), Velasco (1991); Uruguay: de Melo et al. (1985); Southern Cone: Gavin and Hausmann (1995), Rojas Suarez and Weisbrod (1995), Tybout (1986), Nordics: Drees and Pazarbasioglu (1995).

[20]Note that this kind of "weight of money" reasoning differs substantially from the textbook model of asset pricing, where the capitalization of expected future dividend or rental streams is held to anchor the market price of an asset. Anything else represents a bubble whose rationality can rarely be justified. Thus microeconomic deficiencies on the part of borrowers are also present.

in loans or to refuse to renew them leads to selling pressure in the asset market which in turn both pushes many of the banks' borrowers into financial distress and reduces the value of the banks' collateral.

Because of the very visible collapse in asset prices, well-founded questions over the viability of the banks will quickly emerge, possibly leading to runs, and an additional twist to the asset-price deflation from forced sales, as well as depressed expectations.

Because of the magnitude and dramatic suddenness of these crashes, the story of endogenous boom and bust is sometimes thought of as the archetypical banking crisis (Davis, 1992, Gavin and Hausman, 1995). It is important to recognize that it is less frequent than other types, for if we look only for symptoms of an unsustainable bank-driven boom, we risk ignoring other types of emerging crisis with different characteristics.

(b) *Poor management and other microeconomic deficiencies*

There have also been failure epidemics not strongly associated with macroeconomic collapse and where microeconomic deficiencies are centre stage. Some economists, thinking of the "rational expectations" literature are reluctant to attach importance to systematic management errors, but that attitude is over-optimistic (Cf. Arrow 1982, Guttentag and Herring, 1986). In particular, the comparative rarity of bank failures (even now) means that bank policies for avoiding failure have not been honed on repeated experiences of difficulty. Psychological explanations refer to "disaster myopia" as a phenomenon which induces managers to neglect events which, though large, have only a small probability of occurring and do not readily come to mind as a relevant contingency.

Evidently, the susceptibility of a financial system to this kind of myopia is increased whenever the environment for banking changes dramatically, as when there is a liberalization such as the removal of credit ceilings or administrative controls on interest rates, when new entrants have been permitted, or following privatization (as recently in Mexico). This kind of event increases the volatility of prices facing the market participants and, by increasing competition, may place pressure on the profitability of old-established and banks whose cost base had expanded under protection of the old restrictions.

A review of international experience shows a multitude of cases where the simplest explanation for bank failure is poor management (de Juan 1995). Some recent examples come from newly established banks in transition economies such as Estonia and Lithuania, which have fallen at this hurdle, and the consequences of rapid increase in the number of banks may becoming evident in the reported difficulties of Indonesian banks in recent months. For an individual bank, this kind of failure is often traced to poor lending decisions based on over-optimistic assessment of credit-worthiness, willingness to repay, or recoverability of delinquent loans; undue concentration of lending in readily available or "hot" sectors, or to particular borrowers; overly rapid credit expansion exceeding the technical capacity of the bank's lending function or (if generalized) even exceeding the economy's potential to generate bankable projects.

A common feature of problems of this sort is self-lending or lending to entities associated with the bank's shareholders or managers. Such lending is tightly constrained by regulation in most

countries, but the regulations are frequently evaded, by-passed or waived. Over the years, many banks - even successful ones - have been set-up with the idea of providing a convenient and inexpensive form of financing to the founder's enterprises. But if a bank is part of a wider financial-industrial group, it must be at risk unless and until it is seen as a profit centre, rather than a cost centre in the group. It need not be the intention of the group to place the bank at risk, let alone drive it into insolvency, but by substituting a captive bank for the discipline of sourcing funds from independent financiers, the group risks falling prey to overoptimism in its ventures.

Other non-lending sources of difficulty can also be put down to poor management, including the assumption of risky open foreign exchange positions, adopted to benefit from uncovered interest differentials, as was widespread in Chile, Turkey and Mexico.[21] Even when onlent to domestic borrowers in forex-denominated loans, the borrowers are often unable to survive a large devaluation, so the foreign exchange risk has not been hedged, just transformed into credit risk.

Modern techniques of bank regulation and supervision are well-adapted to identifying and limiting the effects of management deficiencies of this type. A widespread banking crisis which is attributed to poor management may as well be attributed to poor supervision and enforcement. All too often, the problem is not that the supervisors didn't know or suspect, but that the bank owners were too well-placed politically for their actions to be curtailed by supervisors without the most conclusive of evidence.

It may be asked whether this type of crisis is really systemic, or whether it relates primarily to isolated banks. The experience has been that countries do experience a bunching of similar bank failures. This is mainly because deficiencies at different banks were allowed to deepen under common external conditions, including weak supervision, though failure can propagate from one bank to others through competitive pressures.

Recklessness and Fraud

Both theory and practice confirm that bank management tend to adopt riskier lending and other strategies than would be socially optimal as a result of the existence of official deposit guarantees, explicit or implicit. Essentially the point is that, absent deposit guarantees, private depositors would require adequate interest remuneration to compensate them for the expected riskiness of the portfolio, and would have to satisfy themselves as to what that level was. The existence of a deposit guarantee removes the depositor's fear of default (at least to some extent), allowing the equity-holder to adopt riskier strategies offering a higher return to equity if successful, and without incurring higher interest costs.

A close parallel may be found in the behaviour of dealers in the trading and treasury departments of banks. If these receive huge bonus payments when their trading is successful, and have nothing to lose but their jobs if unsuccessful, the same kind of risk-preferring behaviour is easily explained. Only with adequate controls on risk-taking, including an appropriate structure of rewards, can this problem be kept under control. The 1995 failure of Barings bank is only the most dramatic instance of this type of effect.

[21] In Mexico, highly leveraged open foreign exchange positions were adopted by banks in 1994 for this very reason. Interestingly, they used complex derivative instruments which helped them conceal the true nature of the positions from regulators (Garber, 1995).

A distinction may be drawn between an increase in risk-taking and another possible response to deposit guarantees, namely what has been described as "looting" (Akerlof and Romer, 1993), where bank management decisions are designed more to channel resources to themselves and the owners than to keep the bank in business. Looting takes advantage of the fact that sufficient time will elapse between receipt of deposit and failure to allow the management to divert a substantial portion of the funds for its own purposes. In this case the behaviour of the management cannot be adequately captured by the term "risk-taking", as it benefits even if the ventures to which the funds are applied do not repay the bank. An example would be self-lending for an associated property venture which purchases land from the management at an inflated price. Even if the property venture fails, the management have benefitted.

Looting behaviour may still be legal, though at best on the margins of legality. This is one thing that may allow it to continue even if the bank supervisors are aware of, or at least suspect, what is going on. It shades into outright fraud.

Much has been heard of fraud in recent bank failures. This has always been a problem in banking. The potential for fraud occurs at various levels. Staff fraud is usually on a small scale insufficient to bring down a bank, though the sums transacted by trading desks can be sufficiently large to do so if internal control procedures are not in place. Fraud by management is a different matter. Because of the risk of criminal sanctions, outright fraud by management or shareholders commonly occurs only at a very large scale, or if the bank is already in a parlous situation so that the alternative to looting and fraud is unattractive.

Although fraud tends to be isolated it can occasionally be at the centre of a system-wide crisis. This appears to have been the case in Venezuela (1994). Another instance of systemic fraud is the curious and dramatic case of Guinea in 1985 where the six main banks, accounting for over 95 per cent of the system were closed on a single day. According to the account by Tenconi (1988), this was the culmination of widespread bank draft fraud perpetrated by their customers (perhaps with the collusion of bank staff).

(c) *Endemic crisis in a government-permeated banking system*

In many countries the role and functioning of the banking sector is intimately linked with the financing of government and on behalf of government. The involvement takes many forms, ranging from government ownership, through programmes of directed lending or investment, to complex and distorting tax and subsidy regimes, both explicit and implicit. As a result of these linkages, government policy objectives permeate the activities of banking systems in this condition. Banks are then not autonomous profit-seeking entities, but operate, to a greater or lesser extent, as a quasi-fiscal mechanism, differing from the budget chiefly in the degree to which the funds employed can circulate rather than being an out-and-out grant.

In good times, such banking systems can appear to be functioning without undue problems. Steady economic growth generates growth in deposit liabilities even at low interest rates, and this can fund a steady expansion in borrowings by state-owned enterprises or other favoured borrowers, even where the borrowers would be hard-pressed, if called upon, to repay. Occasional injections of capital funds by the government to support the balance sheet may be

represented in a positive fashion.

Even if a relatively high proportion of the borrowers are able and willing to service their bank loans, inadequate loan pricing and provisioning means that even a small but steady flow of new lending and interest capitalization to non-performing borrowers results in a gradual erosion in the true capital of such banks to the point where they are actually insolvent in economic terms (present value of liabilities exceeds recoverable value of assets), although perhaps not yet unable to meet cash needs as they arise.

An adverse shock such as a reduction in the trend of deposits, or an increase in interest rates, is all that is needed to expose the underlying insolvency. Such shocks will typically be system-wide, resulting in the simultaneous emergence of problems in many banks.

Because of increasing awareness of the potential for loan-loss problems, tougher loan classification regulations and intensification of supervision, the poor quality of the portfolios of banks which are thus entangled in the business of lending at the behest of government has become known even without a crisis of liquidity emerging. Audits and reviews carried out under the auspices of the World Bank or Regional Development Banks have often been the vehicle for increased awareness of these problems. Another event triggering exposure of the condition of such banks is a change of government, which removes some of the inhibitions which may have prevented insiders from drawing attention to the relevant facts. This all makes it difficult to date the events that have led to insolvency: banking sector authorities become fully aware of the problems at a more-or-less arbitrary stage in the process.

Quasi-fiscal aspect

Nevertheless, especially in the case of government-owned development banks, the idea that a proportion of lending would prove irrecoverable may have been implicitly accepted by the fiscal authorities from the start. Lending has been designed to conceal or defer a fiscal problem by making a substandard loan to support a government policy objective. From this point of view, the costs of restructuring or liquidating such banks can be seen as the redemption of a quasi-fiscal liability incurred in the past just as much as a banking sector problem *per se*.[22] This allows us to put some of the large restructuring costs in perspective. The scale of a 10 per cent of GDP restructuring cost may be more readily understood if it represents the accumulation of a decade of hidden quasi-fiscal deficits.[23]

The degree of democratic legitimacy of the regime may colour one's interpretation of directed lending programs at the behest of government. In the Philippines, much of the loan losses of the two large banks bailed out in the late 1980s were said to have enriched President Marcos and his

[22]This is consistent with, for example, the readiness of the Government of Côte d'Ivoire to restore the viability of the local commercial banks by assuming responsibility for very substantial public enterprise loans that had long been in arrears.

[23]But is important to recognize that use of the banks as an arm of government not only crowds out the remainder of the economy from access to loanable funds, but has other corrosive indirect effects such as degrading the quality of bank performance in terms of credit appraisal and lowering the accepted standards of contract enforcement in the economy generally.

associates, directly or indirectly.

Autonomy of regional governments

An additional twist is provided in the case of countries with a federal structure when state governments use banks (which may be owned by them) as sources of funding for their own borrowing needs, or those of suppliers. The incentive for each state or provincial government to exploit the potential for imposing external costs on the others has been well exemplified by recent history. Loan delinquencies by state governments, and their (unpaid) suppliers, have been at the root of the large insolvencies of state-owned banks in Brazil (1994-95) and Nigeria (1993). In both cases, the central bank has stepped in to provide liquidity support: in effect, the state governments have thus been able to leverage loans indirectly from the (federal) central bank. Exactly the same pattern has been in evidence in the Franc zone, where the regional central banks have had to bear substantial losses on the debts of banks which failed partly as a result of losses on loans to state enterprises, or government suppliers in the different member states.

There are parallels with the behaviour of provincial branches of the People's Bank of China in extending credit to provincial enterprises in excess of the centrally-determined policy; this was an important feature of credit policy evolution in China at least until 1989.

Transition economies

The banking system that emerged from the planned economy and which formed the largest initial element of transition economies' financial system represents, of course, the extreme example of government-permeated banking. Under the planned regime, bankers had made essentially no assessment of credit-worthiness: their job was to implement and monitor the credit plan devised elsewhere.[24]

Other government mechanisms weakening banks

Poor loan-loss experience is not the only way in which government pressure on banking systems reveals itself. Banks have often been pressured to borrow from abroad in foreign exchange and to assume the exchange risk. This action eases pressure on the official reserves, and may postpone pressure for devaluation. However, if the devaluation occurs, it may well result in insolvency for the banks. This was the experience with several large development banks in Ghana, whose official exchange rate in the early 1980s, when the banks undertook borrowings, was well out of line with market realities.

In Latin America, a tradition of high reserve requirements, combined with the possibility of

[24]The evolution of banking systems in transition has followed a variety of paths (Borish et al., 1995, Claessens, 1996) showing that this regime change does not predetermine future developments. Among the dimensions in which transition systems have diverged are the degree to which new privately-owned banks have emerged to deal with new clients (and whether they are adequately capitalized and managed), dependence on central bank refinancing, restructuring and recapitalization of the post-monobank state-owned institutions (and whether this implies soft budget constraints), privatization of these, retention of substantial sectorally specialized institutions. Based on statistical analysis of expert ratings Claessens suggests that radical change leads more quickly to a healthy banking system than gradualism.

rediscounts from the central bank, interacted with a volatile interest rate and inflation development in the 1980s to place the viability of many banks at the mercy of central bank policy. Argentina represents the most extreme example, with a system of 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. By the late 1980s, the financial autonomy of the banks was completely eroded, as they responded to the deposit-withdrawals associated with surges of speculation against the currency by raising deposit rates to extremely high levels (over 100 per cent per month on occasion), and then received offsetting subsidies from the central bank. (This system terminated in January 1989 with the confiscatory funding of most of the deposit liabilities in the so-called Bonex plan.)

This experience has echoes in Chile's period of recovery from the crash of 1981-82 during which the authorities adopted a wide range of subsidies with the objective of ensuring the banks' viability. Less dramatically, one may notice the impact of government credit or borrowing policies on the profits of banks in Ghana,[25] Greece, Philippines,[26] and Turkey[27]. Because they were on a smaller-scale, these last-mentioned cases fall short of resulting in a government-dominated banking system, but they do illustrate the social costs that can be involved even when banks do not explicitly fail.

At the limit of this type of regime, where the profitability of banks is assured only by massive flow subsidies, the solvency or not of the banking system has become entirely a matter of fiscal discretion. Of course it is often the prior repression of the system through onerous taxes or requirements that leaves it so vulnerable. Heavy and variable taxation, explicit or implicit, alters the basis on which banking is conducted and leads to a loss of autonomy and banking prudence.

2. Evolution of the crisis: the role of regime changes

Sifting through the evolution of many crises after the event we generally find that the seeds were sown long before the denouement. But despite the creeping nature of the problem, it is often possible to trace the crisis back to a regime shift which altered the nature, scale, frequency and correlation pattern of shocks to the economic and financial system. Often external to the banks, it was this regime shift that heightened the vulnerability of the system, whether by altering the incentives facing banks, increasing the riskiness of traditional behaviour, or introducing new and inexperienced players. Typically, although this shift in the stochastic environment will have

[25]By maintaining tight credit ceilings during a period of substantial capital inflows in the late 1980s, Ghana effectively passed market power to the banks, allowing them to increase the spread between deposit and lending rates.

[26]Stabilization policy in the Philippines after the mid-1980s crisis involved the aggressive sale of central bank bills at very high yields. Although it did induce some disintermediation, this had a favourable impact on the profitability of the banking system.

[27]High interest rates in Turkey have strongly supported the viability of weak banks in the last couple of years.

been perceptible - and may have resulted from a policy change - the degree to which it increased uncertainty was not fully appreciated by market participants or by the authorities. After years of stability, they underestimated the potential for problems to arise, and continued to operate on the basis of rules and procedures which were adequate to the previous environment, but might not cope with the new circumstances. The result was increased vulnerability of the financial system to failure.

Although rendered vulnerable by the regime shift, the system is not yet doomed to crisis. Depending on its inherent robustness and its ability to learn, the system (including the regulatory structure) may be able to adapt to the new circumstances before a major crisis strikes. Thus there is an interval of heightened vulnerability in which corrective action is possible. This is the window of time which makes anticipatory action worth trying. If it is not taken, eventually a large disturbance triggers the crisis.

By their very nature, future regime changes will not necessarily follow a predictable pattern. It is nevertheless worth providing a checklist of the main types we have noticed.

(a) *Financial repression.*
An increase in the degree to which the government is using the financial system to squeeze resources to support the budget directly or indirectly can expose banks to an erosion of their capital base.[28] On the other hand, when the authorities become aware of a risk to the viability of the system, they often provide opportunities for the banks to earn profits through high margin business often at the expense of the consumer. This may be achieved by limiting competition, including the imposition of credit ceilings.

(b) *Financial liberalization.*
Whereas it is the quasi-fiscal impositions of financial repression that pose risks, a repressed financial system is at least protected from some of the risks posed by financial liberalization, especially the removal of interest rate controls and the liberalization of entry. Particularly where macro conditions are not stable, the overall level of interest rates can become very volatile following liberalization, and may remain very high in real terms for an extended period. The most striking examples are in Chile in the late 1970s, and again in some of the transition economies. The Chilean experience included real lending rates that averaged 77 per cent per annum over 1975-82, despite the absence of major implicit taxes, and without high inflation. Faced with such conditions, it is not surprising that Chilean banks borrowed heavily in foreign currency and on-lent to their customers in the same (Diaz Alejandro, 1985). By passing on the exchange risk, the Chilean banks may have thought that the foreign aspect of this business presented no risks, but events proved that they were merely substituting credit risk for exchange risk.

The increased competition and the resulting struggle for market share that follows liberalization

[28]The government also benefits from the implicit inflation tax on currency, but that need not *per se* represent a burden to the banks or financial intermediaries; on the contrary, these have sometimes benefited from the existence of a high inflation environment. The case of the Brazilian banks, whose skill in providing treasury services in an environment of high and variable inflation contributed to high profits and an enormous expansion in their business, is well-known.

of entry conditions can result in narrower margins and unsound lending practices. This has been documented for a wide range of countries from the UK in the early 1970s to Indonesia and Russia today. The consequences can take a number of different routes (substantial volume increases, new and unfamiliar types of clientele) and may show up in more than one of our syndromes. Liberalization of interest rates and/or foreign exchange market is usually followed by increased exposure to market risk.

(c) *Macroeconomic instability.*

A change in exchange rate policy, a deterioration in the public finances, or any of a number of other sources of monetary instability present risks that may not be fully appreciated by market participants. This is most evident in the case of an innovation to exchange rate policy which can dramatically alter operating conditions for banks. The *tablita* policies of the Southern Cone countries in the period 1979-82 is the most famous case, in that, though it induced gradual currency over-valuation, banks behaved as if the projected exchange rate path was a viable one, and undertook unwise foreign borrowing.[29] A sharp upturn in economic conditions can set the scene for subsequent banking disaster if bankers become intoxicated with the atmosphere of euphoria and a widespread perception that extremely favourable conditions are set to continue.

(d) *Structural economic transformation.*

It is hardly necessary to stress the difficulties presented to existing and new banks in countries undergoing structural economic transformation. This is regime change *par excellence*. Not only do existing banks have to deal with client enterprises which (whether or not they were viable at pre-reform prices) are not viable at the newly prevailing structure of demand and prices at least with their existing scale of operations and product line. In addition the banks may become responsible for their own financial viability in a way that was hitherto unknown. Turbulent interest rate and exchange rate movements and the breakdown of normal trade and payments arrangements accompanied the early years of transition, and are still present in many of the countries concerned. Where the old banks have chosen to exercise forbearance with regard to the unserviceable debts of their old clients (or where they have been pressed to do so - the confused lines of authority often make it difficult for the managers of these banks to choose between a commercial and a political approach) they have tended to remain tied to these customers, allowing new banks to capture a growing share of the business of the more profitable and growing enterprises. But even these new banks are working in a most uncertain and physically insecure environment, where the normal rule of law cannot be taken for granted. In such conditions, even the most conservative banker runs the risk of failure, and it is to these conditions that the unscrupulous are most readily attracted.

(e) *Political developments.*

Even less dramatic changes in the political environment may present a variety of unforeseen problems. For example, emergence from a repressed political regime may leave financial contracts open to hitherto unknown types of opportunistic behaviour or fraud by private sector

[29]More recently, the dramatic stabilization of the Brazilian currency from mid-1994 has effectively removed a large source of revenue for Brazilian banks (see previous footnote) implying that they must shrink. This not only poses new difficulties, but makes it harder to conceal underlying problems. The collapse in 1995-96 of two large private banks, and deepening difficulties at several publicly owned ones, confirm the diagnosis.

counterparties. The collapse of the Guinean banking system in 1985 is sometimes attributed to the removal of inhibitions in the more relaxed conditions following the Sekou Touré regime.[30] Another type of risk is that the government of a fragile democracy may turn to the banks for resources in a hitherto unfamiliar manner and may be accommodated in a way that would not happen with a more experienced banking system. The most common banking sequel to a change of government is not, however, a change in the environment, but the emergence of abuse and fraud which had been concealed through the political protection of the previous regime. The Philippines in 1985 and Venezuela in 1994 are clearcut examples.

(f) *Privatization.*

Often hailed as the panacea for banking weaknesses of one sort or another, privatization has all too often been the regime change which incubated more serious problems. This has been the case both in transition economies and in developing countries that had operated with state-owned banks. The problem has generally lain in the lack of suitability or experience of the new owners, in the inadequate capitalization of the privatized banks or both.

(g) *Technological innovation and globalization in finance*

Technological change in finance has been an underlying factor both in increasing competitive pressures by undermining the dominant position of local banks and in opening up new and untested areas of operation. The potential risks associated with financial derivatives have been extensively discussed in this latter regard, though the isolated cases mentioned earlier are not enough to make derivatives an important cause of systemic bank failure. Potential exposure of banks to local stock market risks could become an issue for the future, if domestic banks seek innovative financial instruments to give them a share of the substantial long-term gains likely to be on offer in these markets.

The increased volume of inward portfolio investment in many developing countries is perhaps the most significant recent regime change affecting a wide group of countries and potentially setting the scene for future crisis.

[30]Under that regime, banks had so little autonomy that they failed to learn the most elementary behavioral norms of institutional survival, leaving themselves wide open to fraud.

IV. Collecting Data for Early Warning

1. Ruling out particular syndromes

Assuming that supervisory authorities are sensitized to the risks presented by regime changes, they still need to detect the early signs of an emerging crisis. Individual bank problems can often be foreseen by skilful use of standard techniques of peer-group analysis. But what if the system as a whole is heading for trouble? Here there does seem to be something of both a methodological and a data vacuum. The metaphor of the three syndromes provides a useful organizing principle in sharpening the inferential value of such data as can be collected.

If you don't know which syndrome you are looking for, the data can mislead badly. But it should be possible to rule out one or two of the syndromes in any particular country from a fairly informal examination of current conditions and of "market gossip". Of course the latter is not reliable, but (especially as it is prone to exaggeration) may be used in a negative way as a pointer to the absence of problems. For example, political lending pressures are always rumoured when present, and sometimes when not. If not rumoured, they are not important. The same is true of recklessness and fraud: these are more commonly reported (though not verifiably) than actually present.[31] Fragility of banking is not so easy for the outsider to detect: if it is widespread, it probably also infects the usual informal sources of banking opinion and may therefore not be reported.

2. Some structural indicators

Having decided which syndrome one is looking for, the next stage is to track the evolution of indicators that might warn of its presence. This section briefly lists some indicators that could be useful. The list is organized by syndrome and includes both indicators that are available and those which could be made available with limited effort.

(a) *Indicators for macroeconomic epidemics*

The endogenous form of this type of crisis has fairly clear characteristics. Unusual asset price movements, rapid growth of lending especially for property transactions and for financing of stock market positions, capital inflows. These are some of the tell-tale signals of an credit-financed asset-price boom which may prove to be unsustainable. We divide the indicators into two classes:

(i) Aggregate balance sheet and operating account data suggesting unsound banking

These are general indicators which apply whether or not there is a macroeconomic boom and bust cycle, and therefore also apply to syndrome (b) below. The idea here is that warning signs from individual banks accounts that are used in industrial countries to flag banks that may be at risk can also be used at the aggregate level to flag systems at risk. Among the most promising series would be:

[31] But not everyone reads the signals, as in the cautionary tale of Banco Nacional in Brazil, whose shares were recommended as a hold by New York investment advisers Salomon Brothers very shortly before the collapse.

One measuring aggregate balance sheet change, namely the growth in aggregate lending (in real terms). This is the classic leading indicator of individual bank failure, and may also (as is argued by Gavin and Hausman, 1995) serve for systems.

Two drawn from the structure of the balance sheet, namely the loan-to-deposit ratio and reliance on foreign borrowing. Higher values of each suggest a banking system that may be over-reaching its resources in more ways than merely financial. On the other hand, very low values of the loan-to-deposit ratio may (as stressed by Rojas-Suarez and Weisbrod, 1995) indicate a banking system whose managers choose, or are constrained, not to exploit their franchise. Of course they are no more than flags: not a conclusive indication of weakness. [32] Foreign borrowing likely also involves foreign exchange risk for the system, directly or indirectly, unless this is swapped out in the international market.

Two drawn from the operating accounts, namely the gross interest margin as a percentage of total assets and the share of non-interest income in total income. A low interest margin is suggestive of potential profit problems even if this indicator is prone to manipulation through the crediting of rolled-over interest. A high share of non-interest income is sometimes taken as indicative of potential weakness in core business, and potential over-reliance on volatile or contestable sources of revenue.[33]

These aggregate balance sheet data are already available in international sources, and we provide some evidence of their predictive performance below.

(ii) Specific indicators for macro-cycles

Specific indicators for this type of crisis may be drawn from information on the three aspects mentioned:

The rate of growth of aggregate bank lending to the commercial property sector should be used as an indicator.[34] A real rate of growth of 20 per cent sustained over two years would be a warning sign.

Prices of real estate property and of equities. Only the latter are readily available, but efforts

[32]In particular, some banks specialize in lending rather than deposits - most famously the large US money center banks (cf. Boyd and Gertler, 1993, who attribute this practice to their higher appetite for risk resulting from implicit deposit guarantees).

[33]Although described above as available or potentially available, it has not been customary in many countries to prepare bank operating account statistics systematically on an aggregate basis. It should be, and the appropriate model for doing so is at hand in the form of the OECD Profitability of Banks series originally developed by Revell and published annually.

[34]That this indicator must be used in conjunction with other information is well illustrated by the analysis of financial factors in growth by Johnston and Pazarbasioglu (1995) who show that credit expansion (and the level of interest rates) have quite opposite effects on future growth depending on whether or not the banking system experiences a crisis.

should be made to develop series for residential and office prices[35]. After deflation by a general price index or expressed in terms of US dollars, the gap between the current price and a trend indicator (such as a moving five-year average) could be taken as an indicator of the downside risk in each of the markets.

Aggregate inflows of portfolio capital totalling 10 per cent of GDP over a two-year period would also be a warning sign. (This in addition to the foreign indebtedness of the banking system mentioned above under (i)).

Although the warning signs are clear, their interpretation will be disputed. Nobody can be confident of knowing that a boom is unsustainable, or when the crash will occur. An equilibrium of cognitive dissonance can be envisaged: thus given the resistance and scepticism with which proposals for corrective action will be met, those concerned with preventing crises will err on the side of predicting more crises than actually occur.

Finally, an additional source of information, not often readily available, but pointing to a direction in which data collection could be improved over time, is the increase in enterprise indebtedness as measured by the growth in leverage in a sample of enterprise accounts. Such variable could contain some predictive power as is evidenced by its use in a series of studies by Tybout (1986) and others of the Southern Cone crises of the early 1980s. There is a standard methodology for the preparation of aggregate financial accounts along the same lines (SNA 1993) but a small sample approach is more attainable.

(b) Indicators of poor management and other microeconomic deficiencies

In examining the system for weakness under this heading, we want to know if the banks are financially sound, and whether they are being managed in a prudent manner by trustworthy persons. Possible sources of information include (i) publicly available (or potentially available) balance sheet and operating account information, (ii) evidence of market confidence from interest rate structures and market performance, and (iii) regulatory information of two types: summaries of information available to the regulators and assessments of the quality of regulation itself. The ease with which this information can be obtained clearly varies, and some of it will not be obtainable in respect of some countries.

Because fraud and reckless behavior must be concealed if it is to be successful, it will be hard to find conclusive evidence before the damage is done. Nevertheless, because it is the business of bankers to assess creditworthiness, it will frequently be observed that market rumors and loss of confidence in banks which have been involved in fraudulent or reckless behavior often predates any clear evidence of their difficulties. Such banks may be excluded from borrowing at the interbank market, and may be paying higher interest rates on deposits for some time before collapse. Thus, of the three sources, we place most confidence in the second.

(i) Balance sheet and operating account information

This is essentially the same item as in (a) above.

[35]There are well-known technical problems in constructing such series: thinness of the markets and lack of homogeneity in traded properties being the most acute.

(ii) Market-based indicators

Market participants are among the best-placed to know or suspect which of the system's institutions have problems. Their suspicions will partly be revealed by prices in, and the functioning of, the short-term money markets.[36]

We suggest three measures here: First, if a large proportion of the banks have no *de facto* access to the interbank market, or have access only at high rates, then this is a clear warning sign. This information is not normally published, but should be fairly readily available to any credible investigator.

Information about the rates being offered by different banks on large time deposits is also informative (and would, for example, have clearly flagged the Banco Latino in Venezuela months before it failed). Our second market measure is thus the interquartile spread on such interest rates. A high spread could suggest a liquidity scramble by banks in difficulty. In a low or moderate inflation economy an interquartile spread of as little as 200 basis points for comparable maturities and size could already indicate problems, though measurement errors in this type of data may mean that a wider spread would be needed before a warning flag is raised. Data on deposit rates is often collected on an informal basis by the Bankers' Association, or even by newspapers. This information should be collected by the central bank on a much more systematic basis than is common at present.

The third market measure, suggested by historical studies as well as by contemporary observation, is the gap between Treasury bill and large bank deposit (or CD) rates. This gap needs to be adjusted for the effects of any differences in the tax treatment (explicit or implicit) of TBs and deposits in each particular country. After such adjustment it should provide a good measure of the market price of bank default risk.

(iii) Regulatory information

While we argue elsewhere that much of the information provided to regulators should also be publicly available on a bank-by-bank basis, this is not yet the situation in most countries. Nevertheless, some regulatory authorities are willing to share some aggregate information, and some, like Chile, do publish substantial detail (see Box).

The most useful kind of information for the outsider to have would be on loan-loss experience and on the ratio of capital to risk-weighted assets. Even though banker optimism, or the desire to conceal the worst from regulators, means that the really large deteriorations in these indicators happen usually after the crisis is known to all, nevertheless small changes may be leading indicators of solvency problems. Accordingly, a rather low trigger value would seem appropriate here. Sheng's (1996) rule of thumb that a crisis is inevitable when non-performing assets exceed provisions by 15 per cent of the total will not often yield an early warning, as such levels of non-performing assets is unlikely to be reported by a bank which is not widely known to be in distress. Instead, it is suggested that a reported increase in the stock of non-performing

[36]For a few countries, commercial rating agencies such as IBCA are beginning to rate developing country banks. So far only a handful of countries are covered, but this is a supplementary information base whose coverage is likely to grow.

loans[37] of as little as 2 per cent of total loans should be seen as a matter for concern. A reported decline in the capital ratio of 0.5 percentage points would generate equal concern.

Other more detailed types of regulatory information are less likely to be made available, and need specialist interpretation anyway. Besides, much of the regulatory structure is designed in such a way as to place prudent ceilings on various balance sheet ratios (relating to such aspects as loan concentration, related lending, and provisioning). To that extent, it is not so much the actual ratios, as the adequacy of the regulatory requirements and their enforcement that needs to be verified.

As to the adequacy of the regulatory and supervisory system, a full assessment of the quality of the regulation and supervision system is clearly out of the question in the present context. With nearly all countries now sensitized to the need for a good system and general agreement on the main design elements of such system, problems are most likely to come in the form of (i) delays in legislation, leaving regulators without the powers they require (ii) weak enforcement and (iii) technical inadequacies either in the regulations or in the quality of supervision. Although a detailed appraisal will not be possible without specialized assistance, especially in regard to the third item, and as such is beyond the scope of the present exercise, it may still be possible to detect potential problems by seeking the answers to three simple questions.

First, what is the status of planned legislation in bank supervision and what is the nature of any delays encountered?

Second, who authorizes waivers or exemptions to regulatory norms, and how frequent and widespread are such exemptions; are any banks in violation of regulatory norms without having received exemption?

Third, has each significant bank been inspected on-site within the past two years?

If the regulatory authorities respond to such questions in an open manner, their answers will reveal much about the likely effectiveness of the regulatory system. The questions could easily be multiplied, but a discussion of these three with the authorities should capture the major dimensions of any deficiencies.

(c) *Indicators of a government-permeated banking system*

Financial crises which are chiefly associated with government interference in the banking system are typically gradual affairs. Structural features which hint at the potential for problems of this type include:

Government ownership of a large segment of the banking system is often a sign of problems to come, though as indicated, even the lending of private banks can be controlled by

[37]The definition of non-performing loans will vary from country to country. Typically, data will be available on the stock of loans on which interest or capital payments are more than 90 (or 180) days in arrears. The data should relate to the total value of the loans concerned, and not be limited (as was the case in Mexico) to the amount of the arrears.

government.

It is often possible to obtain data on the proportion of lending that is at the free discretion of banks, i.e. not subject to compulsory deposits or sectoral allocations. The compulsory component may be made up of (i) compulsory reserves held at the central bank (ii) compulsory investment in government securities or to specified borrowers or to a fund whose disposition is not at the discretion of the bank. A compulsory component in excess of 25 per cent would suggest a high degree of government involvement - though it may be noted that at end-1994 banks in 40 countries held central bank reserves in excesss of that proportion of their deposit liabilities. Sectoral allocations usually come in the form of minimum proportions of the asset portfolio to be held in loans to certain broad categories such as agriculture, particular geographical regions or ethnic groups. In complicated regimes overlapping requirements may make the net free share of the portfolio difficult to specify. (For example if there were, say a 30 per cent minimum agricultural share for agriculture and a 25 per cent minimum share for a particular region, both might in principle be satisfied leaving 70 per cent free, but achieving that extent of overlap might be impracticable for the banks). If the bank has less than 50 per cent of its portfolio freely disposable, then again the degree of government involvement is high. Note, however, that many countries operate a system of sectoral allocations which is hardly enforced, and therefore one should not read too much into an ostensibly mandatory schedule of sectoral credit allocations.[38]

Borrowing from the central bank often entails some degree of official control over the banks' use of the credit; this should be another indicator. Persistent borrowing equivalent to as much as 25 per cent of deposits is a warning sign.

The size of the budget deficit may help predict timing in that a deterioration here may trigger increased reliance on the banking system.

The scale of implicit or explicit financial intermediation taxation is also an indicator of government reliance on the banking system; likewise a high level of government subsidy of the banking system may indicate that the system has fallen into a state of dependency, possibly as a result of previous government pressures. Measuring these requires some work, though methodologies have been developed and applied to many cases.[39]

Finally, there is a potential application here of some indicators of political risk. The political structures and traditions of a society will be an important additional influence on the vulnerability of the banking system to predation from political powers. Relevant dimensions

[38]Rojas-Suarez and Weisbrod (1995) use the size of bank reserves to some extent as a proxy for this variable, but with a somewhat broader interpretation of what it might be capturing.

[39]This needs some calculation (cf. Chamley and Honohan, 1989). The simplest approach is to calculate the additional spread in basis points on non-favored loans resulting from the need to break-even on funds borrowed at opportunity cost equal to TB rate (or interbank rate), assuming all costs of reserve requirements, and forced below-cost lending are to be recovered from non-favored loans, expressed as a percentage of total assets. A level of subsidy equal to one per cent of assets would be high.

would be the degree of concentration of political power in elite groups (the more concentrated, the more prone the banking system to predation); the freedom of the press (a free press and an informed public opinion being more likely to inhibit political abuse of the banking system); and the autonomy of regional governments vis-a-vis the center (bearing in mind the temptation for regional governments to exploit regional banks to the point where they have to be rescued by the center. In practice, political indicators may be constructed either through direct measurement of such political structures, or by appealing to one or other of the multi-purpose political risk judgmental indicators marketed by commercial firms.

2. The indicators in practice

In order to obtain some impression as to how structural indicators might perform in practice, we obtained data on a subset of the proposed variables for a selected sample of 24 countries. The countries were selected in four groups, six for each of the main crisis syndromes and a further six countries regarded as control cases. The assignment of countries is subjective, and the exercise is designed to see whether the proposed indicators would have flashed in advance for these countries which we now know have had problems of the different types. The control group is based on a listing of countries in Lindgren, Garcia and Saal (1996), where no significant problem is reported for these countries; but the results do not hinge crucially on any assumption that the banking systems of these countries were exemplary.

In choosing the list, preference was given to developing countries, though in order to have clearcut cases for the macro epidemics, two industrial countries have been included in that group (A), and in order not to rely on very small countries, two industrial countries were also included in the control group (D).

A time series on seven indicators was drawn from International Financial Statistics, corresponding to a selection of the indicators suggested above for epidemic ("ab") and government ("c") type crises. The epidemic indicators are the sub-group that serve for both the macro (a) and micro (b) varieties.

The indicators used are:

ab1 Loan to deposit rate
ab2 Foreign borrowing: ratio to deposits
ab3 Growth rate of real bank credit

c1 Bank discretion over use of funds, measured by share of reserves to deposits
c2 Government share of lending
c3 Central Bank refinancing of bank lending
c4 Government deficit

The countries chosen are:

A (macro)	B (micro)	C (government)	D (control)
Argentina 80-82	Colombia 84-85	Cameroon 89-95	Honduras
Chile 81-83	Kenya 93-	Egypt 91-	Switzerland
Mexico 94	Malaysia 85-86	Hungary 87-	Malawi
Uruguay 82-85	Nigeria 91-95	Pakistan 80s	Morocco
Norway 87-93	Thailand 83-88	Philippines 81-87	Portugal
Sweden 90-93	Venezuela 94	Poland 91-	Syria

We find that, comparing the average values of these indicators as between the different groups, the performance is sharply different as between the different country groups (Table 1).[40]

All three "ab" indicators correctly flag the "A" countries. Three of the "c" indicators correctly flag the "C" countries. Conversely, only one of the "c" indicators flags the "A" countries, and none of the "ab" indicators flags the "C" countries. This confirms the diverse nature of crises, and the need to tailor one's indicators to the type of structural weakness likely to be present.
Something of a disappointment is the inability of the "ab" indicators to flag the "B" countries. As it happens, most of the B countries chosen are countries whose crises were relatively small in magnitude, probably explaining why this particular subset of indicators, based as it is on aggregate data, is not very effective in the context. Other indicators mentioned above for micro crises would have more chance of picking up relatively small crises.[41]

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[40]Our methodology here is quite simple. The value of the indicator is computed for each country, both the mean for 1975-94, and the mean for the three years before the starting date given for that country's crisis, if any. These means are then averaged over the countries in the group. A pairwise comparison is then made between the mean for group D and that of each of group A,B and C respectively. The differences, shown in Table 1, lead to the clearcut conclusions reported in the text, despite the small sample size of six countries per group.

[41]Inspecting the "ab" time series for the B countries also points up the practical issues of interpretation that arise, and that mean that no automatic system of flags should be envisaged. Thus, for the two African countries, foreign borrowing is comparatively small: one may assume that this reflects supply side considerations, rather than restraint on the part of the domestic banks. Similarly, the growth of credit indicator is high in Malaysia and Thailand both before their crises and in later, untroubled times. Rapidly growing economies such as these can support relatively rapid aggregate credit growth rates, and

Table 1: *Mean Value of Selected Indicators for Sample Countries*

	Indicator						
Country Group	ab1	ab2	ab3	c1	c2	c3	c4
A	116.9**	31.5*	10.1**	21.6	18.2	21.2	-2.8
A - 3y[1]	121.1**	25.4	22.2**	19.6	13.5	12.5	0.2
B	92.0	9.1	5.7	15.9	16.4	3.4	-3.3
B - 3y	90.9	9.5	1.9	16.8	16.5	5.4	-5.5
C	85.5	18.4	7.8*	24.8*	35.9**	25.2**	-3.7
C - 3y	84.3	20.8	5.7	20.7	34.9*	21.6**	-3.0
D	82.7	20.5	4.0	15.7	24.4	9.1	-5.0

[1]Mean of indicator for three years before date given for start of crisis.
Asterisks denote indicator significantly larger for this country group than for group "D", variance assumed known and equal to sample variance for all 24 countries.
** = 95 per cent confidence,
* = 80 per cent confidence.

No comparable international data set yet exists for the other variables proposed. Though isolated data series for particular countries can be found, they do not seem comprehensive enough to form the basis for any systematic econometric testing of the usefulness of the indicator approach.

undue attention to this indicator can reduce the analyst's credibility (even though a bank growing faster than its peers will still be a risk).

V. Setting Financial Policy to Reduce Vulnerability

The three failure syndromes elaborated above also offer a convenient framework in this section for classifying issues of prevention. Macroeconomic stabilization policy has its part to play, and must not be derailed by short-termism in financial sector policy. Although some scholars still argue in favour of *laissez faire* in banking, on the grounds that regulation might create more distortions than it removes, a clear majority view favours close microeconomic supervision of bank practice and enforcement of capital adequacy rules. There is a consensus on the major features which such prudential regulation should have in developing countries. But regulatory enforcement may be inhibited by political pressures: new institutional structures may be needed to strengthen the regulators' hand. Increased internationalization can help on a wide front.

1. Macroeconomic and banking system stability

There is no doubt that a return to greater stability of real and especially nominal macroeconomic variables would help reduce the riskiness of the environment facing banks and bank regulators. However, protecting the solvency of banks and other financial sector participants is not the primary reason for seeking macroeconomic stability. Therefore, to rely on advocacy of macroeconomic stabilization policy is really an evasion of the specific policy issues that arise in relation to macroeconomic aspects of financial sector failure.

In fact, financial sector issues do open at least two important windows on macroeconomic stabilization policy. First is the consideration that euphoric bank lending surges can lead to a very vulnerable macroeconomic situation. As discussed, this vulnerability manifests itself especially in the asset market prices, especially housing, and in construction booms. To the extent that the main consumer price indices respond relatively slowly and moderately to this kind of bank-lending driven boom, a monetary policy driven by the primary objective of stabilizing consumer price inflation will react slowly and insufficiently.

It is fair to say that this problem was not adequately recognized in industrial countries or the developing world in the 1970s and 1980s (Schinasi and Hargreaves, 1995). During those years, guided by the successes of monetarist ideas in explaining inflation rate differentials, the primary targets used by monetary policy-makers to stabilize the economy included monetary aggregates, nominal income and aggregate price indices such as the consumer price index, with the latter gaining ground in the 1980s. Now, after the asset price cycles of the late 1980s, there is a greater awareness of the importance of tracking asset prices also and of stepping in to increase the cost of credit when their movements suggest incipient instability. As yet, no accepted framework as simple as that offered by monetarism has emerged to guide policy where account has to be taken of asset-price movements, and this leaves the macroeconomic policy-maker with more complex decisions than used to be the case. Obviously this topic goes well beyond the scope of the present paper.

The second window onto macroeconomic stabilization policy relates to the obstacles which banking sector weakness can place in the way of needed deflationary policy. When the capital of many banks has been allowed to erode, and when the banks have acquired an investment portfolio that exposes them to interest rate risk, a foreign exchange position that exposes them to exchange rate risk, or a loan portfolio that makes them highly vulnerable to an economic

slowdown (if the ability of many borrowers to service their loans is dependent on continued buoyancy in property prices and extremely strong demand conditions generally), then macroeconomic stabilization is difficult indeed. Even a small corrective policy step, such as an increase in interest rates, or a tightening of fiscal policy, may tilt several banks into insolvency and failure, with wider and hard-to-manage consequences. It can become unclear whether expansionary or contractionary policy will affect banks more adversely. To avoid a fall in the foreign exchange value of the currency (which could bankrupt those exposed to foreign exchange risk) an increase in interest rates might be needed (but that would cause difficulties for others). In short, the problems of a weak banking system can paralyse macroeconomic stabilization policy.

If a weak banking system impedes macroeconomic stability (and of course it should not have been allowed to reach that stage), then correction of this weakness, probably requiring far-reaching measures, will be required sooner or later. Deferral of needed macro-stabilization will not by itself ease the position of the banks. Therefore, although it would be foolhardy to imply that a general prescription is valid for all cases, the presumption must be that measures necessary for macro-stability should not be deferred, and at the same time the weak banks should be promptly intervened, with whatever liquidity support is needed for the system to offset depositor panics. In this sense, bank rescue policy should normally be subordinate to stabilization of the macroeconomy.

This is all more easily said than done. In particular, it requires a nice balance between tightening of the cost of credit while providing adequate liquidity to meet the increase in liquidity preference that may follow the revelation of bank weakness. Nevertheless, it offers what seems an inescapable logical priority: banking system weakness should not be allowed to derail macroeconomic stabilization. After all, in the longer term, the more stable the macroeconomic performance, the easier it will be to avoid future emergence of widespread banking weakness.

2.Building a robust regulatory system: consensus on most technicalities

(a) *The consensus*

The emergence of banking problems in developing countries has led to reappraisal of financial policy design in these countries. The result has been a virtual consensus on many of the main regulatory structures that need to be put in place in order for the financial system to display robustness in the face of shocks.[42]

The consensus view on financial policy begins with the idea that the system should be free of the onerous and highly distorting taxes and quasi-taxes (especially interest rates controlled at unrealistic levels) that were a common feature of most banking systems in the past. Not only does the removal of these impositions free the bank's management to devote its attention to

[42]This reappraisal was able to draw on recent improvements in the design of banking regulations for industrial countries spearheaded by the work of the Basle Committee (cf. Padoa-Schioppa, 1996). Most of the technicalities that remain under discussion in the industrial country context are of less urgency in developing countries given the existing and prospective structure of their banking and financial systems.

creditworthiness as the major criterion for lending decisions, but it ensures that the bank's decisionmakers have an incentive to make sound loans.

The achievement of good results in prudential regulation (as seen by the consensus view) requires adequate flows of information, qualitative as well as quantitative; adequate standards of solvency with reference to the risks being assumed; and adequate powers and independence for the supervisory agency to take graduated action to prevent unsound behaviour.

The basic information task has not changed in a hundred years, and the regulator is still being asked to assess the condition of the bank from the point of view of the accounting ratios (adequate capital to absorb unexpected losses, adequate liquidity to absorb unexpected withdrawals of deposit resources), the accuracy of the accounts themselves, the character and ability of the bankers and the overall profitability of the bank's operations. Although the growing size of banking and the increased complexity of their operations has led to more emphasis being placed on an assessment of the bank's own information and control procedures, this too is only a difference of degree from older approaches to assessing a banker by inspection of the way in which the ledgers were maintained, and the decisions implemented and controlled (Gibbons, 1859). There is, perhaps, greater insistence now on legal powers for the regulators to act promptly to restrain a bank from imprudent behaviour even before it has come close to insolvency. Just as the fundamental requirements of supervision and regulation have not changed much so it remains a demanding - and often rather unrewarding - occupation. Technical progress has not eased the regulator's task, rather the contrary.

This is not the place for a full description of the agreed basis of bank regulation. Capital adequacy, good supervision and adequate authority for supervisors are the catchwords of the campaign for improved financial sector policy. But it is only realistic to recognize the inevitable deficiencies in all three. Of course one must also recognize the inevitable limitations of regulation. For example, solvency standards are only as good as the measure of capital.[43] Supervision is relatively ineffective against fraud, especially when the burden of proof is on the regulator. The increasing complexity of market-related instruments held by banks and the speed with which their value can change sharply limits the value of occasional inspection and reporting. It will be some time before many of the systems that are now being put in place in industrial countries to try to keep up with this evolution can be transferred to developing countries. Regulators may be under pressures that induce them to forebear to intervene in the activities of unsound banks.[44]

But above all, supervision will also be of little use if not backed up by a political will to move against what may be powerful financial interests for the sake of protecting the taxpayer from the costs of failure (a point to which we return below).

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[43]The recent Mexican crisis was marked by an almost perfect reported capital adequacy record for the banks right up to the eve of the crisis.

[44]Cf. Kane (1995), Boot and Thakor (1993), who express this as a problem of imperfect agency. Supervisors and regulators are agents of the public interest and as such their behaviour is unlikely to be free of agency costs. In particular regulators may exercise forbearance because of a fear of revealing early deficiencies in regulation and in the hope that the banks may recover anyway.

(b) *Design of regulation: some adaptations needed for developing countries*

For developing countries it is not, therefore, so much a matter of designing the regulations, as of ensuring that they are in place and effective. There are, however, a couple of important respects in which the industrial country regulatory structures are not adequate for the needs of developing countries. One relates to the overall percentage capitalization requirement, and the other to the treatment of lending to government.

The capital requirements against risk assets chosen by the industrial country regulators were calibrated for industrial countries whose economies are generally larger and less vulnerable to exogenous shocks, furthermore, these ratios were adopted under pressure of international regulatory competition. They are not tough enough for most developing countries. Imposing higher requirements will appear onerous and possibly an impediment to financing development, but the conclusion seems inescapable if we wish to give the bank regulators in developing countries a realistic chance of intervening in a failing bank before all the capital is eroded. The establishment of appropriate capitalization levels for country circumstances is a matter which needs to be considered on a country-by-country basis. There is clearly a risk that increased capital requirements could lead to disintermediation and the booking of loans in off-shore subsidiaries, so issues of international coordination may arise.

The assignment of a zero risk weighting to own-government debt is also questionable for developing countries, considering the frequent instances of direct and indirect arrears by developing country governments. The principle is often stated whereby a national government can always “print its own money” to repay the banks, so need never be in default, but this may not be the case where a currency board system in effect, where the country participates in a currency union, or where the government has otherwise foresworn the use of monetary financing. Even when governments have faced up to their loan delinquencies, they have sometimes secured preferential consolidation which has been tantamount to a partial default, so far as the banks’ profit and loss account is concerned. All in all, there is sufficient reason to reject the idea that lending to own government is riskless for banks.

(c) *Speed limits*

Although the consensus approach recognizes that regulatory avoidance makes it no longer realistic or desirable to try to influence the structure of banking system portfolios on a long-term basis, some suggestions in the direction of re-regulation have been mooted. The most promising of these, so far as bank soundness is concerned, is the proposal for some kind of "speed limits" on bank asset growth (cf. Caprio et al., 1994, Vittas, 1992). This idea draws on the common observation that rapid growth in loan portfolios is often present in individual bank failures and, as we have seen, in some type of systemic crisis. Although regulators can always *ex post* target a bank with rapid loan growth for special examination, the damage may already be done. Why not simply limit the rate of loan portfolio growth *ex ante*? Such an arbitrary friction may induce avoidance through the use of unregulated nearbanks or offshore entities. However, if the speed limits are pitched sufficiently high, they will bind too rarely to trigger avoidance, considering the fixed costs that may be required to set-up avoidance procedures.

Temporary speed limits are worth considering in a market which has many new and hence inexperienced entrants, and inadequate supervisory resources, or may be an effective way of

choking off an incipient boom. But they are unlikely to feature as part of the optimal long-term tool-kit. Besides, excessive credit growth only predicts some crises: this measure has the feel about it of being a solution to "last year's problem".

But it would seem unwise to go beyond the idea of speed limits to entertain some of the more complex prudential rules which have been proposed with the intention of making the regulatory system more responsive to exogenous changes. For example, there has been the suggestion that capital ratios should be linked to macroeconomic conditions, thereby providing a more refined structure of incentives for the bank, and avoiding, for example, the possibility that the regulations could lead to credit policy being destabilizing (as when loan provisions increase in the recession, contributing to a credit crunch). While such complex incentive packages can be designed in theory, it is less clear that the theoretical constructs can be reliably transformed into soundly-based operational rules. For developing countries at least, implementation of simple and sensible rules seems more urgent.

3. Political obstacles to effective regulation

Weak enforcement due to political interference is the Achilles heal of any regulatory system. Early response to emergent banking problems has been repeatedly inhibited by the political protection against closure which appears to have accompanied unsound banks and imprudent or self-serving bankers. The resulting delays have deepened the ensuing crisis.

Designing institutional and political arrangements that will make such protection less likely is a difficult challenge. For one thing, bank intervention is often not seen as a desirable political good. Two of the possibilities that have been suggested to enhance the political desirability of sound banking and thereby strengthen the hand of the regulator, limiting deposit protection and greater disclosure are worth considering.[45] When depositors are fully indemnified from banking failure, the major potential beneficiaries of sound banking are the taxpayers, who represent a normally diffuse lobby. Not only will unprotected but better informed depositors be more cautious about where they place their funds, but they will also see the regulators as their agents and clamour for early regulatory intervention.

(a) *Deposit insurance and the narrow bank*

Can the taxpayer's exposure to bank failures be limited by defining the parameters of explicit deposit protection in such a way as to make full rescue politically unrealistic? Is there ever an advantage to introducing explicit deposit protection during a period of vulnerability or of imminent crisis? Can the concept of a "narrow bank" be effectively employed here, or will such a scheme so limit the effectiveness of bank intermediation as to be more costly than it is worth? These questions have been widely discussed and remain open in the literature.

Narrow banking covers a variety of proposals all of which amount to defining a class of deposits

[45] As are increased internationalization (discussed in sub-section 4 below) and privatization. Whereas management of a government-owned bank have a built-in access to authorities who can forestall or overrule regulators, this is not necessarily the case with a privatized bank (though bank owners are also likely to be well-connected politically).

which is to be backed by securities of such undoubted liquidity and safety that the bank's inability to meet depositors' withdrawals cannot be called into question. Most (but not all) countries have sufficient such assets to back the existing stock of demand deposits, suggesting that the idea is not infeasible. Furthermore, using an adequately supervised holding company structure, a banking group could continue to benefit from the scope and information economies associated with deposit, money transmission and lending activities while still segregating the special deposits from the risks associated with lending and other banking activities.

The question of narrow banking and deposit insurance are tightly linked as they relate crucially to the credibility of government and its ability to commit itself to avoid bail-outs. Both limited deposit insurance and narrow banking lose their rationale if they fail to alter depositors' perception as to the likelihood of intervention in the event of need. Where such credibility exists they may be very useful, otherwise not. Greater public awareness of the costs of the current round of crashes may enhance the political acceptability of limiting future coverage of deposits.

Many observers have criticized the introduction of blanket deposit coverage during a widespread crisis or incipient bank run as having the worst kind of incentive effects, and of undermining all attempts to establish credibility in times of calm. But it still happens. Undoubtedly, such action can be effective in stemming a depositor run (as in Turkey, 1994), though not if the target of the run is the currency as much as the banks. Certainly a selective run in favour of strong banks should not be met with a blanket deposit insurance, as lender of last resort facilities can, at much lower cost, be deployed to protect banks which the authorities believe to be sound.

Despite lack of a consensus in the profession on the best way forward here, there is no doubt that a lack of definition of the scope of deposit insurance is a serious structural flaw in the structure of incentives in the system allowing and almost encouraging abuses.

(b) *Disclosure*

Is it really a good idea to disclose full details of a bank's balance sheet and income position? Many authors insist that this must be so, given the ability of market participants to process information and the distortions that arise when information is asymmetrically distributed. Ensuring prompt disclosure of all relevant information is also a central concern of the regulators of securities markets. It is noteworthy, however, that not all bank regulators agree. Their concerns appear to be with the risk of an irrational depositor response aggravating the position of a bank which is suffering from temporary and recoverable weakness. It is sometimes argued that, by forcing early liquidation of such a bank's portfolio, such depositor withdrawals may impose avoidable social costs.

From an analytical point of view, the issue of disclosure is closely related to that of forbearance. If the purpose of non-disclosure is to facilitate the continued operation of a bank which the market would close if they had the relevant information, then it also implies that the authorities (who have the information) are forbearing to take closure action themselves. Although some theoreticians have dreamed up circumstances under which forbearance would be desirable it is widely accepted that forbearance and non-disclosure weaken incentive structures and ease the work of political lobbyists who would seek to restrain regulatory action.

Disclosure multiplies the number of watchful eyes and should induce a more cautious management stance. Inevitably, disclosure may shorten the time interval between the emergence of solvency and liquidity problems at a bank, as it will improve the information on which depositors and other lenders to the bank will base their decisions. However, early regulatory intervention in the affairs of an insolvent bank is desirable anyway. Recalling the earlier discussion of contagion, specifically its relative infrequence and the tendency for runs to be focused on banks that are truly insolvent, we conclude that the advantages of extensive disclosure outweigh the risk of some destabilization.

4. Positive aspects of international financial integration

(a) *Can internationalization provide insulation?*

Though there is much concern that increased globalization of financial markets can increase the volatility of capital flows, globalization can also provide an opportunity to diversify some of the risks faced by a small and closed financial system. This should be exploited by policy to strengthen the resilience of financial systems in small economies. Innovative risk-sharing financial instruments can help, but achieving the full potential may require stronger ownership links between financial institutions at home and abroad.

This line of reasoning relies on the observation that, while some elements of the rapid technological development in finance may have contributed to risk, in general the increased diversity and complexity of the network of financial institutions has increased the resilience of sophisticated financial systems to isolated failure (Honohan and Vittas, 1996). Not every country can expect to build a comparable complexity by itself, but by becoming more integrated into the international financial network it can obtain the benefits of increased resilience as well as risk diversification.

After all, most of what are *macroeconomic* shocks for a small country are only regional or sectoral shocks for the global economy. The risk of such shocks can in principle be diversified. One theoretical option is diversification through market instruments. Banks might find ways of selling or swapping part of their loan portfolio to banks in other countries. Or marketed derivative instruments linked to objective indicators correlated with national economic conditions could provide the vehicle. Exploration of the institutional arrangements that might be needed to support such innovation is beyond the scope of the present paper. The alternative, and more practical, option is greater involvement of foreign-owned banks in domestic banking. For example, heavy loan-losses at the local branch of an multinational bank will not entail failure of the bank.

Likewise when we consider the *microeconomic* syndrome and the *government* pressure types of crisis the advantages of greater participation of foreign banks can be seen. They can bring with them experience and systems. Concentration of lending is less likely to be condoned, especially to associates of the local management. Local euphoria is also less likely to be given free rein in lending decisions. Bank internal controls to inhibit such behaviour are likely to be much more effective than external regulation and supervision. Government pressure can be more readily resisted.

An important obstacle to this approach is the common perception that foreign ownership of banks compromises sovereignty. It has to be acknowledged that concerns along this dimension are not wholly groundless.

And even where they are welcomed, foreign-owned banks may not be rushing to enter. Experience to date of foreign-owned banks in developing countries varies but, with some exceptions, such banks have tended to confine themselves substantially to servicing the activities of foreign enterprises (especially enterprises from the bank's home country), and the trade finance requirements of the largest domestic enterprises. Partly as a result of this, but also because of better management procedures and less pressure from governments, the incidence of failure of foreign-owned banks has often been much lower than for local banks - even though their lack of local information can make their lending decisions hazardous. Nevertheless, the expansion of US and other industrial country banks into onshore banking in many developing countries in Africa and Latin America during the 1960s and 1970s often had disappointing results for those banks, and the relatively modest response to recent possibilities opened up by the changes in Eastern Europe and the Soviet Union, and in the Single European Market, suggest that industrial country banks will remain highly selective in their entry decisions.

Obviously there are no simple and immediate solutions here. But the traditional view which stressed the advantages of delayed liberalization of the capital account of the balance of payments in protecting the domestic financial system from destabilising capital flows must now make some room for this type of argument based on the insulating properties of the global financial network.

(b) *An international seal of approval*

At several points we have argued that the existence of some form of international seal of approval can help promote the incentive structure that is needed. This can partly be achieved through an international expansion of the activities of private rating agencies and the research teams of international investment banks. These have begun to expand their activities into the developing and transitional world, and their reports on selected banks should begin to feed back usefully on regulator and government performance. However, they only find it worth their while to cover the larger banks in the larger countries.

Therefore the question arises as to whether there should be some public international initiative on regulatory and supervisory standards going beyond the current process of progressive adoption by other countries of the Basle norms.[46]

One specific idea is that an international rating classification for financial systems would be available to each national authority. The government could apply to have its banking system and regime of bank regulation and supervision rated. The ratings would be published. The rating agency would rate different segments of the banking system separately, but there would be no intention to include a bank-by-bank rating. The rating report would also evaluate policy,

[46]This might seem to be a departure from the principle of home country regulation adopted between industrial countries, but bear in mind that (outside the EU) this principle can already be overridden if the host country is not satisfied with the quality of the home country's regulatory procedures.

distinguishing between the quality of regulation, supervision and enforcement. In approaching the task, the agency would naturally be looking at indicators such as those discussed in Section III above, but would need to go into greater detail and also make qualitative evaluations on the basis of interviews.

The very existence of such a rating system would alter the incentives for those governments which are disposed to interfere excessively in their banking systems. Failure to seek a rating, or securing a low rating, would impact negatively on their economic and political performance. Those governments which do not want to abuse the system but which, perhaps because of a history of abuse, lack credibility in this regard, would benefit too.

The international community would also gain collectively, justifying what would inevitably involve costs of design and implementation, whether the rating system was to be operated by a single public body or (more likely) competitively by private or public agencies.

This is not the place to discuss exact modalities, or what international body should have responsibility for giving effect to the proposal including dealing with the rating agencies, collecting statistics on a comparable basis, and arranging for financing (to the extent that subsidy is required) etc. Preferably, this should be undertaken by a body which already has a strong individual incentive to be aware of the condition of banking and of banking supervision and regulation in developing and transition economies.

Whatever international body or bodies are involved, a key element is that the proposed seal of approval, or graded rating of regulatory regimes, would be sought by the authorities, and the results made public in order to ensure that it encourages the appropriate incentives for the regulators and the government.

VI. Concluding Remarks

Closer international cooperation in banking regulation offers clear advantages to all countries in the attempt to forestall future systemic problems of each of the types we have discussed. Macroeconomic instability, though it has an important domestic component, is often linked to external shocks. Microeconomic deficiencies are often tied in with foreign exchange and off-shore transactions requiring close and trusting contacts between regulators in different countries. Relatively strong externalities mean that each country gains from the quality of regulation and of macroeconomic stabilization policy in its financial and trading partners.

Our review highlights the need to distinguish between technicalities and errors on the one hand, and abuse on the other. Policy errors have certainly played a part, and they can be addressed through better legislation and regulatory design, improved training of supervisors and adequate resources of the supervisory authority, and greater attention to the importance of avoiding macroeconomic overheating. But it is in the area of reducing what must, in conventional terms, be regarded as abuses, that the most important reforms must be sought.

From the economist's perspective, the most promising way of curbing abuse is by altering the incentive structure faced by the various participants: bankers, depositors, regulators and the government itself. When it comes to the incentive structure for government, we move into the grey area between fiscal policy on the one hand and issues of governance and even of political corruption on the other. These issues must be squarely faced if there is to be decisive progress in reducing the fragility of banking systems.

To some extent, lessons will have been learnt from recent experience. The stagnation or failure of banking systems which have been pressed too hard for quasi-fiscal resources will have brought home to many the short-term nature of the fiscal gains to be made. In some cases the politicians who undermined the banking system have still been in power when its collapse presented them with what was only a slightly deferred bill. But short-termism is not likely to be completely eliminated by such experience, and one must seek stronger institutional arrangements within which governments and politicians are less likely to act in such a way as to generate financial collapse.

Effectively we are seeking a mechanism whereby governments can bind themselves and their successors to avoid short-termism and abuses, thereby strengthening the hands of the national bank regulators. It is in this context that the establishment of an international sanction or seal of approval becomes desirable.

Box: Disclosure in Practice - Chile

The monthly report "Financial Information" published by the Chilean Superintendency of Banks and Financial Institutions provides a useful blueprint for what should be contained in a disclosure document. This report, which appears within three months of the date to which the statistic refer, contains both aggregate and bank-by-bank information under four main categories. Data for each bank is given in the same format.

First, the monthly balance sheet, with considerable breakdown for example, as between short-term and long-term loans, and up to a dozen categories of long-term loans, for example. Overall, 63 asset sub-categories and 69 liability sub-categories are separately identified.

Second, the income and expenditure account, also very detailed, for example showing separately the interest paid to depositors in three maturity brackets and distinguished as between floating and fixed interest rate deposits. Altogether 47 sub-categories of income and 71 of expenditure are separately identified.

Third, liquidity, including maturity analysis of each bank's gross positions in local and foreign currency in eight maturity classes and distinguishing between fixed and floating interest rate items. Required and actual liquidity balances.

Fourth, analysis of debtors, including size distribution (no. of debtors in each of 11 size categories), size of lending to related borrowers (distinguishing between production companies, investment companies and individuals), estimated required provisions and actual, the bank's own classification of loan portfolio by quality, and the superintendency's most recent assessment of the quality of the bank's loan classification procedures.

Information is also provided *inter alia* about changes in major shareholdings and directors, and about the condition of financial affiliates of each bank.

Annex: Country Notes

This annex includes a brief pen-picture of conditions in half a dozen countries whose banking systems have come in for public comment, or which have clearly had crises. It illustrates the diversity of types and the contrasting conditions under which problems can emerge.

Argentina

Argentina has had a series of severe banking problems dating back to the late 1970s. Although the frequency of these problems has no doubt reflected the volatile nominal environment, the major causes have differed as between the different episodes, with the earlier macro crisis leading to increased government interference in the banking system's operations which left the system vulnerable to fiscal and inflationary disturbances.

The boom-and-bust banking collapse of 1980, which ended a short-lived experiment in financial liberalization, has been extensively documented (cf. Balino, 1981, Giorgio and Sagari, 1996, Petrie and Tybout, 1985). It was followed by further difficulties in 1982 (South Atlantic War) and 1984-85 (61 small institutions closed).[47] High inflation and an unfavorable fiscal and quasi-fiscal environment resulted in a stagnation of private banking in Argentina for the rest of the decade. Our focus here is on the two most recent episodes, namely the events of 1989 and 1994-95.

The traditional policy view in Argentina that much of the resources that banks mobilized should be turned over to the Government for allocation to socially determined priorities dates back to the time of Peron in 1973, when 100 per cent reserve requirements were imposed on demand deposits, and high requirements on other classes of deposit. Through many shifts in financial policy, an environment of high reserve requirements survived into the mid-90s. This resulted in a pattern of mutual dependence which has contributed to successive crises. A complex compensation mechanism (CRM), originally designed in 1977 to mitigate the adverse impact of reserve requirements on the profitability of banks subsequently became the vehicle for bail-outs and ultimately became one of the main channels for monetary expansion as the Central Bank became unable to meet the demands of the mechanism in any other way.

1989

At the end of 1989, a generalized loss of confidence in economic policy led to some of the most spectacular bank runs anywhere in 50 years. However, it was not so much the solvency of the banks that was in question,[48] but rather the fear[49] of draconian government action to freeze or confiscate deposits.[50] The fear proved to be well-founded. In January 1990, the government announced what was, in effect, a confiscatory substitution of long-term bonds for most bank deposits.[51]

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[47]By 1989, the cumulative cost to the Central Bank of bank failure was put at about $6 billion.

[48]Although 27 per cent of all banking system loans were reported as "irregular" at August 1989, this figure had been stable for at least three years, and the percentage for privately-owned banks was 9 per cent, down from 12 per cent three years before.

[49]Partly generated, it was reported, by memories of previous confiscations.

[50]The history of official deposit guarantees and deposit insurance has been a checkered one in Argentina. An unlimited guarantee introduced in 1974 was replaced in November 1979 with a very limited voluntary scheme to be funded by participating banks. Just four months later the major crisis of 1980 broke, and this triggered a one-hundred-fold increase in the amounts covered by the deposit guarantee. In April 1995, in the middle of another crisis, a new, more generous, deposit guarantee system was introduced to stem withdrawals.

[51]The element of confiscation arose because the bonds which were substituted for deposits traded at a substantial discount from par - well over 50 per cent.

Although the bond substitution did not stop the ongoing hyperinflation, it did (despite negative immediate effects on confidence) prepare the ground for the subsequent *real* plan which succeeded in stabilizing the Argentine monetary regime for the first time in years. To understand why, one needs to recognize that, by 1989, the viability of the banking system was wholly dependent on huge injections of inflationary financing by the Central Bank through various compensatory mechanisms.[52] As inflation accelerated, banks increased deposit rates to retain customers - eventually to 137 per cent *per month* in June 1989. Although full compensation from the Central Bank was not wholly automatic, it did mean that the banks were much less inhibited in raising deposit rates than they would otherwise have been. The compensation in turn increased the supply of base money, thereby further fueling inflation. This link between bank solvency and high inflation was broken only by the effective partial repudiation of bank deposits which had the effect of almost eliminating the liability of the central bank to pay compensation to the banks.

1994-95

The most recent Argentine crisis was also a function more of overall policy than of weak banking. Although it was the publicly-owned banks that had suffered the most serious problems of non-performing loans in the last decade,[53] the 1994-95 crisis was at first concentrated in the smaller private banks. It began a few weeks before the Mexican crisis, as bond price declines adversely affected wholesale banks and other intermediaries and a well-respected bond trader failed. As lines of credit were called-in, the problem began to snowball, with signs of cumulative debt-deflation in the bond market. The Mexican peso collapse moved the crisis onto a different plane. Despite sharp interest rate increases, massive withdrawals of Peso deposits (aggregate peso deposits fell by more than one-quarter in three months)[54] combined with a shift to quality (the ten leading banks gained market share). The authorities' ability to provide liquidity to the system was hampered by the currency-board type restrictions under which the Central Bank was operating.[55] By April 1995, two small banks were in liquidation, and another five had suspended payments for a month or more. Subsequently much of the lost deposits returned[56], though placed more in dollars, in larger banks and at shorter term. Although recorded bad debts grew from 16 per cent to 18.6 per cent of all loans in the first four months of 1995, and despite the closures through merger as well as through liquidation[57], it appears from the robustness of foreign currency deposits that this crisis, like that of 1989-90, was much more a crisis of confidence in the currency than in the banks *per se*.

[52]This much simplified account is based on Beckerman (1992). See also Giorgio and Sagari (1996).

[53]One after the other, many of the publicly-owned development banks rediscounted public sector paper at the Central Bank, but were unable to service the rediscounts. Progressively, this problem has been dealt with through closure, or privatization after recapitalization.

[54]From December 20, 1989 to the end of the following March, Peso deposits fell from P24.5 billion to P17.7 billion; US dollar-denominated deposits fell from the equivalent of P24.6 billion to P23.6 billion.

[55]Though it was found possible to devise mechanisms - reduced reserve requirements, borrowing against reserves, etc. - which provided almost P5 billion of liquidity, as against a withdrawal of less than P7 billion in Peso deposits and about P1 billion in dollar deposits. The Central Bank's charter was revised.

[56]$4.7 billion in the period June-August 1995.

[57]Ultimately, 38 financial institutions disappeared through merger and takeover. The 8 whose licenses were revoked represented less than 2 per cent of total deposits, and even their depositors were likely to recover a high percentage.

Brazil

In Brazil the banks are sharply dichotomised into the state banks on the one hand, and the federal and private banks on the other. Recent well-publicized problems have affected both types, apparently in rather different ways. Quasi-fiscal activities have been relevant in both. During the years of high inflation an ever-growing share of bank credit went to the public sector. Although the sudden end to inflation placed all banks in an exposed position, it was the state banks that suffered most from quasi-fiscal distortions, whereas the two recent very large private bank failures appear to be the result of insider abuse and possibly fraud.

The state banks have acted largely as a captive fiscal agent for the state governments and have long relied fairly heavily on funds from the federal government and rediscounts from the central bank. The financial situation of many of them has been known to be critical since 1983. There have been periodic bail-outs and from 1987 the central bank intervened in eight state banks which were in arrears on debt to it. The largest of these, Banespa (Sao Paulo) was intervened in December 1994, with indebtedness of upwards of $14 billion to the Central Bank. With the costs ultimately falling in this manner on the federal government or its agencies, the effective pattern appears as a classic "tragedy of the commons" whereby each state government bankrupts its own bank knowing that it will carry only a small part of the resolution cost. As with an over-grazed commons, the net effect is a degraded banking system, and heavy costs for all. The resources of the largest bank in the country, the federal-owned bank Banco do Brasil, had been employed for years in quasi-fiscal activities (such as lending to agriculture and agri-business) which led naturally to unrecoverable loans: its losses were explicitly recognized only in 1996, when it reported a $4 billion loss for 1995, and warned of even higher losses for the following year.

As to the private banks, the major link with government policy has been the degree to which, during the high inflation period, their operations and their profitability had become dependent on the float from interest-free checking accounts invested in overnight lending to the government. Because of the high profitability of the use of these funds in overnight lending to the government, and because of the large branch network involved in mobilizing such deposits and in operating treasury services for customers faced with actual and near-hyperinflation, the banking system's value added reportedly represented a huge 13 per cent of GDP (1983-92 average). The sharp fall in inflation 1994-5 made sharp inroads into these profits, and several smaller banks failed. Most of the larger private banks are, however, reported to be trading profitably despite the fall in inflation and one is even expanding into Argentina, relying on superior productivity and efficiency. Nevertheless, two large private banks failed suddenly in 1995: Sixth-ranking Banco Nacional, and Banco Economico, the largest in the Nordeste state and 9th in the country. Both were revealed to have accumulated a huge stock of non-performing loans over a period of years.[58] The deficiency at Banco Economico is said to be $5 billion, and may be even higher at Banco Nacional. Self-dealing is thought to have been a major factor in both.

[58]Neither failure could easily have been foreseen from the published data. In particular, excessive asset growth was hardly evident: thus, although Nacional's market share (among the five largest private banks) had increased from 14 to 26 per cent between 1990 and 1993, it had since fallen back; Economico's market share had slipped in the five years before its failure. Furthermore, both banks were reporting a slightly lower share of non-performing loans than their peers (Figure). Admittedly, Nacional's reported risk-weighted capital adequacy was, at about 9 per cent, well below that of the other large private banks, its shares were trading on a low price-earnings ratio, and other banks were no longer lending to it. But as late as November 1994 international analysts Salomon Brothers described it as a "strong" bank which they believed would be a "long-term winner"; and in June 1995, less than five months before the deposit run that precipitated the bank's failure, they recommended the shares as a "hold".

Cote d'Ivoire

The banking systems of the CFA franc currency unions have been severely distressed over the past decade. The Ivorian banking system is the most developed in the region but, as in most of the other member states, four large commercial banks dominated commercial banking and represented joint ventures between the Ivorian Government and European partners. A single French bank represented the lead European partner in each case: Societe Generale, Banque Nationale de Paris, Credit Lyonnais and BIAO (the former bank of issue, and the only one of the four whose main focus was Africa). In addition, up to a dozen other foreign majority-owned banks were present at various time, representing owners in the USA, UK, Brazil and elsewhere (prominent among them Citibank and Barclays). The BCCI and Meridien groups were also represented.

The banking collapse in the CFA countries is mainly a classic example of the government interference type. Restricted by the rules of the currency union in what it could directly borrow from the central bank most of the governments allowed their agencies, public enterprises and suppliers to run up unserviceable banking debts. Five sectorally specialized development banks partly funded by external donors were among the first to get into difficulties - they were insolvent by 1987 - and were eventually wound-up.

Problems of illiquidity began to plague the commercial banking system from 1988 on as the decline in the price of export crops made the fixed exchange rate over-valued. As the economic crisis deepened, delinquency of public enterprise borrowers was a major, but not the sole cause. The parent BIAO group were the first to collapse, and negotiations began with possible purchasers of their Cote d'Ivoire subsidiary, first unsuccessfully with BNP and then brought to completion with Meridien. The global failure of BCCI and then of Meridien had inevitable knock-on effects because of their significant presence in the country: the local operation of BCCI was placed in liquidation and full ownership of the merged Meridien-BIAO operation was assumed by the Government.

The combined problem of illiquidity and insolvency was finally addressed by a World Bank assisted rehabilitation program involving

(i) Assumption by the Government of the indebtedness to the BCEAO of liquidated development banks, and the consolidation of this debt on concessional terms.

(ii) Assumption by the Government of non-performing obligations of public enterprises and public bodies to the banks, part paid in cash, part funded with a ten-year bond, remainder consolidated on longer and concessional terms and the refinancing of the consolidated debt by the BCEAO.

(iii) Assumption by the Government of arrears of the crop price stabilization board Caistab to coffee and cocoa exporters and its settlement with a ten year bond to funding crop marketing board, which is in turn being refinanced by the BCEAO.

(iv) Injection of new capital into the major commercial banks both by the Government and by the European shareholders.

The government and public enterprise payments and assumption of obligations in relation to the banks amounts to CFA 542 billion or about 20 per cent of GDP.

Hungary

The banking problems of transition economies display a variety of specific incidentals, but share common problems of:

an inherited stock of loans that were non-recoverable, at least at the new relative prices that prevailed after price reform,

a legacy of government-directed credit that implied a lack of experience in the banking system with credit appraisal, and

a surge of new or privatized banks in a volatile economic environment, posing risks of inadequate management and deficient supervision.

The case of Hungary will serve as an illustration. The modern Hungarian banking system evolved from the Socialist banking system in which the National Bank of Hungary, the Foreign Trade Bank MKB, the National Savings Bank OTP and a network of rural cooperative banks divided banking between them on strict functional lines. From 1987, three large commercial banks (MHB, K&H and BB) were hived off from the National Bank, thereby initiating the separation of commercial banking from central banking. New entrants were allowed from 1989 - some of them initially state-controlled.

As economic reforms accelerated, all of these banks encountered severe problems. The savings bank was the first to encounter severe cash-flow problems as the maturity mismatch in its portfolio led it suffer from disintermediation as nominal interest rates rose. The solution adopted was to swap its portfolio of housing loans for variable interest bonds issued by a newly established Housing Fund supported by the national budget. The swap was not at market rates and effectively recapitalized the savings bank.[59]

The other large banks continued to accommodate the growing deficit of the enterprise sector which, faced with altered relative prices as the economic reforms proceeded, incurred total losses averaging more than 15 per cent of GDP during 1988-90. Naturally the creditors of these enterprises also became vulnerable. Awareness of the resultant critical financial situation of many of the banks grew, but no systematic approach was adopted. Worse, a sequence of partial financial restructurings[60] unaccompanied by adequate measures to reform lending practices generated an expectation of repeated bail-outs. This had the effect not only of postponing the task of enterprise restructuring, but of weakening lending discipline. The tough bankruptcy law of January 1992 - though substantially weakened later that year - helped shock banks into stopping new lending to uncreditworthy borrowers, but they continued to carry a burden of non-performing loans and excessive staff costs.

Although new banks, including foreign and joint venture banks, continued to make inroads into the market share of the old banks, four over-staffed and financially fragile state-owned banks still controlled 60 per cent of the deposits as late as June 1994, inhibiting competition and contributing to the very high interest margins that prevailed.

Gradually, imposition and achievement of higher capital ratios , a program of privatization and improvements in the aggregate economic environment promised to bring the Hungarian banking system

[59]Having been rescued from the insolvency caused by maturity mismatch, the savings bank began to specialize in what observers felt was highly risky long-term credit to enterprises.

[60]At least four different schemes between 1991 and 1994 disbursed funds totaling the equivalent of 7½ per cent of 1994 GDP.

into better shape. Whether the bail-out mentality had yet been entirely replaced by a hard-budget constraint remained to be seen.

Although the details of institutional reform have varied substantially, other reforming Eastern European and FSU countries have also had difficulty in avoiding further accumulation of bad debts to non-viable enterprises struggling to survive in the new circumstances. Thus even those countries that experienced very high inflation, which effectively wiped out the real value of pre-existing debts, accumulated a new stock of unrecoverable claims on the same old enterprises. Although other countries did not follow the Hungarian pattern of repeated system-wide bail-outs, soft re-financing through under-priced central bank facilities persisted in many countries and had equally corrosive effects on microeconomic discipline at banks. The emergence of numerous private banks in this turbulent atmosphere, notably in Russia and in the Baltic States, led to many failures due to inexperience and self-lending.

Turkey

The Turkish financial system has been coping with chronic high inflation for two decades, with annual inflation averaging 60 per cent and exceeding 100 per cent in 1980 and 1994. The volatile macroeconomic environment, and the government's need to tap the financial system has resulted in a fragile pattern of mutual dependency between banks and government.

During this period the banking system has comprised three main segments: a small number (now five) of large state-owned banks with a portfolio heavily weighted towards public enterprises and still accounting for almost a half of the system; a handful of large private banks, each forming part of a industrial-financial group, and accounting for rather less than a half; and finally a number of smaller banks and near-banks.

Each segment has faced its own problems: the quality of the portfolio of the state-owned banks is placed in question by virtue of the weak financial condition of many of their borrowers; the larger banks are vulnerable to the risks of within-group lending[61]; and the smaller institutions have included some who attempted to exploit the volatile macroeconomic situation in a reckless manner[62].

All three segments have been confronted with severe fiscal pressure coming in the form not only of high inflation, but also of various compulsory reserve and investment requirements and explicit levies. The cost of these impositions is evident in the high spreads between deposit and lending rates. For example, in 1988 the spread was between 30 and 40 percentage points, to which it was estimated that reserve requirements contributed more than a half and explicit levies an further quarter. Subsequently spreads widened further, and reached a reported 80 percentage points in 1994. It is likely that most of the incidence of this implicit taxation fell on the borrowers through high interest rates but some will also have been passed back to the bank's capital through the resultant increase in the risk of loan delinquency.

The high nominal interest rates drove many banks increasingly to fund their domestic currency lending operations in foreign currency. By 1994 about one half of the banks' deposits were denominated in DM. The stock market and general economic boom[63] of 1993 suddenly ended when international rating agencies downgraded Turkey, and when the outflow of funds which ensued was not stemmed by prompt interest rate increases. Banks' external credit lines were cut and banks responded by calling in loans. The pressure which the sharp depreciation placed on many banks resulted in the failure of three small banks. Depositors began to run the banks (and not only to switch the currency of denomination of their deposits), but this run was stemmed by the announcement of 100 per cent deposit insurance by the Government.

Subsequently confidence in banks returned, but with government borrowing even more heavily, interest rates increased. With the banks resuming their practice of shorting foreign exchange, these high interest payments by the government effectively facilitated the recapitalization of the banks as their currency play was successful through the remainder of 1994 and 1995. The profitability of the banks thus remains heavily dependent on government behavior. Furthermore some concerns remain about the condition of several banks, including the state-owned banks.

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[61]One reported case had within-group exposures totaling 300 per cent of capital.

[62]The 1982 Banker Kastelli collapse is the best-known instance of such recklessness.

[63]Though generally attributed to the large and widening fiscal deficit, the boom of 1993 was also supported by the ready availability of bank credit, which grew at an annual average rate of over 16 per cent real during 1992 and 1993.

Venezuela

The Venezuelan banking crisis of 1994-95 is sometimes framed as a function of the boom and bust cycle in the stock market, and sometimes as the consequence of quasi-fiscal pressures, but a balanced reading points the finger at self-dealing and probable fraud.

It is true that the Venezuelan economy has experienced considerable volatility and that the stock market fell back sharply after the peak it reached just before the attempted coup of February 1992 - indeed by November of that year it was little more than a third of its peak value. Furthermore, the bank whose failure initiated the subsequent crisis, the Banco Latino (second largest in the country) was at the center of a major takeover bid in the stock market as it reached its peak. Stock purchases by the bank of the target company, the Caracas electric utility, drove up, not only the price of the utility's own shares, but helped boost the market in general. The bid proved unsuccessful, because of the increasing financing cost, but the bank took heavy losses on their holdings of the shares when the market plunged (by over one-third in a month). Many observers believe that Banco Latino was then insolvent.

Inflation has also been high and volatile, and 1993 was a year of rising inflation and high nominal interest rates. Banco Latino and the other banks that were subsequently closed in June 1994 led the way in interest rates. Banco Latino in particular was offering interest rates which were equivalent in annual terms to at least five percentage points higher than the average of the banking system throughout 1993[64] The high interest rates will not have helped Latino's borrowers, though in real *ex post* terms they averaged less than 0.2 per cent per month. However, the high nominal interest rates exposed Latino to cash outflows, and it was its inability to meet cash needs in the clearing that precipitated its closure in January 1994.

But the real problem was that Latino and other banks, some of them with ownership structures that interlocked with Latino had grossly insufficient good assets to meet deposit and other liabilities. The scale of this situation was not clear to the authorities who continued to support the banking system with enormous loans in the first half of 1994, as a result of their reluctance (in the face of depositor protests) to close any more banks. It appears that the managers of at least some of these, already insolvent, banks used this period of grace to channel much of the liquidity assistance off-shore. At any rate, when seven further institutions were closed, it was found that less than a fifth of the liquidity assistance provided had been used to meet depositor withdrawals. The remainder had gone elsewhere.

All in all, some 14 banks accounting for one-half of the banking system were either closed or nationalized during 1994. The authorities spent US$ 8.6 billion. It is unlikely that we will ever know who the ultimate beneficiaries of much of these funds were, and at what stage banking became transformed into looting. What is clear is that the banks' accounts were seriously misleading, offering no hint of the scale of insolvency; that extensive use of off-balance sheet transactions helped conceal the deficiencies, that some of the main players had close contacts with senior political figures. Policy errors were certainly present. Complete liberalization of interest rates was not helpful. Delays by Congress in approving regulatory reforms also impeded regulatory action which might have helped stem abuses.[65]

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[64]With inflation rates running at 4-5 per cent per month, it may have been more natural to calculate interest in monthly percentage rates. To the unsuspecting depositor, the gap between a deposit rate of 4_ per cent per month is probably not as obviously out-of-line with a market average of 3¾ per cent per month as a 10 per cent per annum rate would be relative to a market average of 5 per cent per annum. Yet the difference is equally large and unsustainable in a competitive market.

[65]Vigorous lobbying by banking interests played a part in these delays, and it may be no coincidence that eventual enactment of the legislation was quickly followed by the banking crisis, with insiders taking the opportunity of withdrawing their funds before the regulators acted.

Finally, the forbearance shown by the regulators in allowing banks to remain open for several months during which billions of taxpayers dollars were leached out of the system was extremely costly.

Prevention of the Venezuelan crisis would have required much better information by the regulators, but above all would have required a more decisive enforcement of regulations. It is clear that the political atmosphere inhibited the regulators from adopting a more aggressive stance, thereby allowing their charges to escape with very substantial abuses.

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