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Pacific-Basin Finance Journal 8 (2000) 285–308

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PACIFIC-BASIN  
FINANCE  
JOURNAL

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# The dialectical role of information and disinformation in regulation-induced banking crises

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## Abstract

The severity of banking crises increases with disinformation about the losses banks incur in making politically directed loans and about the budgetary costs to the government of standing ready to absorb these losses increases. When (as it eventually must) such disinformation begins to lose credibility, silent runs test the government's commitment to supporting its insolvent banks. An open banking crisis does not emerge until the size of unbooked obligations has become large enough to overwhelm the government's implicit and explicit support system. Multilateral assistance offered countries that experience banking crises should transmit incentives for prompt insolvency resolution, for reliable information disclosure, and for developing plans for dealing with future financial disasters. © 2000 Elsevier Science B.V. All rights reserved.

*JEL classification:* F34; G18; G21

*Keywords:* Financial crises; Bank runs; Financial liberalization; Credit allocation; Government guarantees

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## 1. Introduction

The title of this paper links four ideas: banking crises, misregulation, disinformation, and dialectical change. It is useful to explain these ideas at the outset.

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In medicine, the word *crisis* describes the point in the course of a serious disease at which a decisive change occurs. Prior to reaching a crisis, a patient will usually have been growing progressively sicker and sicker over time. Oftentimes, so-called “golden moments” exist when proper medical care could have cured the disease without further incident.

Similarly, prior to the emergence of an open banking crisis, a country’s banks have usually been getting sicker and sicker, too. An ailing bank is one whose economic solvency is in decline, by which we mean that the bank’s tangible and intangible assets have been losing their capacity to service the bank’s debts. As in case of medical neglect or malpractice, inappropriate regulatory treatment may intensify rather than cure a troubled bank’s slide into insolvency. This paper terms a regulator-driven slide into crisis as “regulation-induced”.

*Disinformation* is false or half-true information that interested parties convince news media to publish as simple fact. Around the world, the efficacy of banking regulation is impaired by bank and regulatory disinformation about the value of bank loans and other kinds of banking risk exposures. Bank-initiated disinformation may be viewed as an interwoven series of cover stories designed to mask financial weakness and industry rent-seeking. Supporting strands of regulatory disinformation are rooted in officials’ sensitivity to industry criticism, in industry pressure for hidden subsidies, and in the lack of timely discipline on top regulators to truthfully characterize shortfalls in the quality of their supervisory performance. When and as financial stress grows, industry spokespersons and elected officials press regulators all the harder to cover up evidence of banking weakness and to communicate half-true disinformation about the opportunity costs of policy decisions.

Dialectical theories portray change — not rest — as an economy’s permanent state. *Dialectical change* is change that is actuated by a struggle between irreconcilable contradictory forces. In banking, the warring forces may be described as information and disinformation about banking-system income and net worth. The timing and depth of individual banking crises depend on the speed with which disinformation’s early victories are reversed by an expanding credibility gap.

Like earthquakes in geologically active regions, banking crises are an unpredictable but unavoidable part of economic life. They are triggered by the interaction of the decaying credibility of disinformation about the value of bank loans with the decaying credibility of explicit and implicit government guarantees of deposits at insolvent banks. During the final few months of an individual bank’s decline, more and more of the bank’s savviest depositors come to recognize the bank’s growing risk of failure. To protect themselves from loss, these clever early movers test the credibility of government backup by quietly starting to transfer deposits to safer (often foreign) depositories. When government support proves lukewarm, the creditors that take their place are often foreign institutions that make it a point to collateralize their positions in enforceable ways.

The efforts a bank and its regulators make to accommodate this crisis-threatening “silent run” emit signals that underscore and aggravate the credibility gap, spreading doubt about the bank’s viability to increasingly less-sophisticated customers. Open runs ensue suddenly when large numbers of customers try to redeem their deposits at the same time. An open run does not occur until and unless customers’ growing doubts overwhelm their longstanding confidence in their bank’s ability to redeem deposits. For an individual bank, an open run becomes a crisis if and when the bank’s managers cannot raise enough funds by selling bank assets and borrowing from other institutions to honor its depositors’ withdrawal requests.

A country’s financial system becomes “crisis-prone” when most of its banks have been making bad loans for a long while. Bad loans are loans whose present discounted value lies below the expected present value of the amounts that borrowers are contractually obligated to pay. Bad loans sicken a bank by gnawing away at the capital its owners nominally supply.

A banking panic occurs when many insolvent banks undergo open runs at the same time (Gorton, 1992). Because bad loans have rendered these banks economically insolvent, they cannot fully honor their depositors’ redemption rights without government help.

Many analysts treat precrisis foreign capital inflows as exogenous disturbances (Institute of International Finance, 1998; Rodrik and Velasco, 1999). In our model, capital inflows finance silent runs on a country’s insolvent banking system and are an endogenous part of the prepanic endgame. The temporary strength these capital inflows impart to a nation’s currency resembles the dawn of a false spring. When and if a domestic banking panic finally ensues, efforts by collateralized foreign creditors to liquidate their positions in insolvent banks deepen the disarray that the nation’s currency and asset markets have to repair.

In modern economies, a banking panic constitutes a policy crisis for central bankers and other financial regulators (Barth et al., 1998; Caprio and Klingebiel, 1996, 1999; Demirgüç-Kunt and Detragiache, 1998a,b; Garcia, 1998; Schwartz, 1998). To stop a banking panic from triggering systemic financial gridlock, authorities labor to supply liquidity to troubled financial markets. In practice, anti-panic policies blend aggressive central-bank lending to each and every solvent financial institution that authorities can identify with selected bailouts of insolvent firms (De Bonis et al., 1999).

The ad hoc crisis-resolution strategies adopted in crisis situations expose officials’ reluctance both to engage in advance planning for financial disaster and to make hard decisions as to which institutions do and do not deserve public assistance. Even in the midst of a crisis, it is important for governments to attack the issue of crisis prevention (i.e., to address the causes of bad lending). But, at such times, it is hard for officials to fund their assistance either by explicitly raising taxes or by floating new debt in private markets. Typically, countries undergoing financial crisis temporarily set aside their concern for future crisis

prevention. They shift accumulated bank losses implicitly onto future taxpayers and look to foreign governments and multilateral institutions to provide an infusion of liquidity.

This paper underscores the high long-run social costs that regulatory disinformation and ready government loss-absorption entail and calls for the International Monetary Fund (IMF) and the World Bank to restructure their efforts to aid crisis countries. Because insolvent banks have strong incentives to pursue highly speculative risks, reliquifying them by outside bailouts reinforces incentives that misallocate the flow of real investment, further harming a crisis country's productive capacity.

To minimize long-term damage to a country's capital stock, multilateral rescue efforts should make sure that authorities in recipient countries address the issues of disaster planning and future crisis prevention. Foreign aid contracts should insist that crisis-prevention and crisis-resolution policies proceed hand in hand. To put themselves in position to do more than throw money at creditors of crisis countries, international lending institutions such as the IMF and the World Bank should develop efficient crisis-management protocols and help countries to train government personnel in their use. To induce countries to use these protocols, they should also explicitly condition their crisis assistance on the conceptual adequacy and demonstrated progress of a crisis country's programs both for resolving the insolvency of its zombie banks and for eliminating incentives that are apt to generate a recurrence of bank insolvencies.

## **2. What is a bad loan and how do bad loans redistribute wealth and harm a country's productive capacity?**

Banks may be conceived as information and deal-making factories. They gather, verify, and process information about borrower investment projects. Bank managers use this information to frame deals and balance the benefits of their deal-making between customers and other stakeholders in the bank. As part of the balancing process, managers transmit information that purports to describe how the riskiness of the bank's deals is allocated among its various stakeholders.

Information about banks is knowledge and news about individual-borrower prospects and broad market forces that let us value their tangible and intangible assets, liabilities, and net worth. Information may be true or false; adverse or favorable; perfect or imperfect; released or concealed.

Disinformation consists of efforts to "spin" or cover up true information. Its emergence presumes a context of asymmetric information. A better-informed party purposely withholds key facts and credibly emphasizes misleading ideas to trick less-informed individuals into drawing false conclusions.

The principal tools of the disinformer are omission, mischaracterization, distortion, exaggeration, and distraction. In every country, accounting principles that

govern the itemization and valuation of bank positions offer bank managers and regulators leeway to exercise these tools.

To simplify the analysis, we focus on banks whose core deal-making businesses are only to collect customer savings and to lend that savings out again in ways that sustainably increase the capital stock of the local economy. When managers of such banks misuse information to make bad loans, they destroy social capital and undermine the viability of their bank. Earnings impaired by bad loans damage a bank's ability to collect and retain deposit funds in the future and change the riskiness of the loans bank owners and executives prefer to book at the margin. Indeed, some of these loans may be made to the bank's owners as a covert way of transferring their capital out of the bank.

To explain how accounting leeway fosters disinformation, it is necessary to define bad loans in an opportunity-cost sense. For accountants, all loans start out as good loans on the day they are made. The book value of a loan is harmed only by events that explicitly block the delivery of scheduled payments. In assessing a bank's performance and condition, accountants seldom characterize a loan as "going bad" until the borrower actually falls behind the schedule of payments set up in the deal-making contract. Using this criterion, bad loans are "nonperforming loans".

In most countries, bank information systems employ accrual accounting rather than cash accounting for interest on loans that are not expressly classified as nonperforming. On all performing loans, delinquent interest is recorded as if it were received on the date it was due. In the US, loans are not designated as nonperforming until a past-due payment has fallen 90 days into arrears. All unpaid interest previously accrued on a loan that breaches the 90-day threshold is reversed and subsequent receipts are recorded on a cash basis.

Because the average borrower delays scheduled payments from time to time, accrual accounting renders bank earnings less volatile than cash accounting would. However, accrual accounting opens up opportunities for an economically insolvent bank to grant new loans disinformationally to stop a decline it recognizes in a borrower's repayment capacity from triggering an adverse loan reclassification that would lower the bank's accounting income and net worth.

Table 1 likens the four categories used to account for distressed bank loans in the US to the classification scheme used to inform would-be bettors about the

Table 1  
Systems for classifying the condition of distressed assets in the United States

Projected ability of seriously injured football players to participate in an upcoming game	Loans placed on a bank's watch list	Federal Bank Examiners' assessment of troubled loans in the US
OUT, DOUBTFUL, QUESTIONABLE, PROBABLE	WORTHLESS, IMPAIRED, NONPERFORMING, SLOW	LOSS, DOUBTFUL, SUBSTANDARD, SPECIAL MENTION

ability of seriously injured football players to participate in an upcoming game. In all three systems, only the most severe of the four rankings conveys a numerical estimate of how much value a classified player or loan will be able to contribute to the future economic performance of the enterprise in which it plays a part.

Economists employ a more informative threshold of value deterioration. They do not characterize a loan as good unless the presented discounted value of the payments that may reasonably be expected to accrue under the contract equals or exceeds the remaining principal value due under the loan. By this definition, a loan can go bad at any time and can be bad even if the bank is receiving every contractual payment on time and in full. In particular, a loan is bad from day one if its contract interest rate ( $i$ ) is too low to compensate the bank adequately for the risks the borrower is taking with the proceeds.

The proper contract interest-rate on a loan ( $i_C$ ) is the sum of the interest rate a bank can earn in risk-free lending ( $R_f$ ) and the information-based risk premium ( $r$ ) that is appropriate for the loan. Algebraically:

$$i_C = R_f + r. \quad (1)$$

For example, if the risk-free rate  $R_f$  is 3% per annum and a particular loan deserves to be assigned a risk premium  $r$  of 8%, the proper contract rate  $i_C$  for the bank to charge would be 11%.

Loans made at rates below  $i_C$  give stockholder capital away. To measure the value stockholders lose, let us suppose that each hypothetical loan is for 1 year and the principal is certain to be repaid. In our numerical example, the present value of each dollar lent ( $L_{PV}$ ) becomes:

$$L_{PV} = \frac{1 + i}{1 + i_C} = \frac{1.08}{1.11} = 97.3 \text{ cents.}$$

This implies that every dollar lent out transfers 2.7 cents of stockholder value to the borrower.

Bankers may make bad loans — and regulators may tolerate these loans — for many reasons: perverse incentives, inadequate information, defective analysis, and competitive pressure. Herring and Wachter (1999) emphasize that “disaster myopia” can support “herding” behavior that may importantly intensify each of these damaging forces. Disaster myopia leads decision-makers to neglect or underestimate the probability of infrequent, catastrophic movements in borrower net worth and collateral value. Moreover, cognitive psychologists (e.g., Kahneman et al., 1982) indicate that this type of information suppression is apt to become stronger the longer and more exuberantly macroeconomic good times flow.

According to Gresham’s law, bad money drives out good. Similarly, in the course of a prolonged economic boom, bad (i.e., disaster-myopic) credit analysts tends to drive prudent and accurate analysts out of the game. The further that a country’s previous credit catastrophes recede into the past, the longer the inappropriately low risk premiums charged by disaster-myopic bankers produce strong

accounting profits. The repeated success of bankers who consciously or unconsciously gamble against disaster puts tremendous career pressure on their more-foresighted colleagues to go along for the ride.

Whatever the role of disaster myopia, in most crisis countries, political pressure and crony capitalism influenced bank managers to make numerous loans at inappropriately low interest rates (Dooley, 1997; Edwards, 1999; Mayer, 1998). This type of bad loan is made deliberately and represents the principal focus of this paper. To render a strategy of deliberately making bad loans incentive-compatible, bank insiders must simultaneously receive a direct or indirect kickback from the borrower and be able to conceal the transfer of value from outside stockholders and depositors. Bankers may also need to hide the transfer from auditors and regulators unless borrowers and bank managers conspire to devise acceptable ways of sharing the kickbacks with these public watchdogs. For example, a bank manager may enlist the cooperation of auditors by offering excess fees on ancillary “consulting” business and may purchase the cooperation of top regulators by delivering campaign contributions to the politicians to which these officials report and by promising them attractive postgovernment employment opportunities.

Besides immediately transferring value from outside shareholders, a policy of making loans at inefficiently low interest rates has two longer-run effects. First, it reduces the true net worth of the bank. Unless the stockholder capital used up is replaced by other earnings, maintaining a policy of making bad loans will eventually exhaust the bank’s economic capital and render the bank unable to weather a deposit run without an external bailout.

Second, charging overly low interest rates has macroeconomic consequences. It means that the capital investments into which borrowers are putting most of the loan proceeds receive improper informational screening. Earnings from the capital put in place may be worth less than the costs borrowers incur in carrying out their investments. The most obvious instances of subsidized or myopically underwritten loans that generated wasteful investments lie in office and apartment buildings in major Asian cities whose rents cannot fully service their mortgage debt.

Keynesian theory explains that even bad loans can fuel a boom in the national economy. Spending loan proceeds on any investment project raises current national income by a multiple of the amount spent. This means that — as long as disaster holds off or side payments among bankers, borrower, auditors, and government officials fuel a continued growth in bank lending — the accounting value of the country’s GDP will expand as well.

The problem is that the economic value of the capital put in place ( $K_E$ ) is less than its accounting value ( $K_A$ ). The full amount of  $K_A - K_E$  must eventually be written off some combination of bank, customer, and government balance sheets.

The credibility gap spans two interacting dimensions: the size of unbooked losses on bank loans (UL) and the size of the unbooked tax expenditures ( $G$ ) that implicit and explicit government absorption of bank losses implies. For a time, the

macroeconomic impact of unbooked government support is apt to exceed that of explicit spending due to the formidable difficulties ordinary taxpayers have in calculating the future liabilities the guarantees will impose upon them. Clever depositors who recognize the increase in UL will not be scared away as long as ownership capital and government tax capacity can easily service bank creditors. Bank deposits do not lose credibility for these savvy depositors until the size of the bank's capital shortage creates doubt about whether taxpayers will allow the government to fully back up the banks' losses. A silent run begins when the country's more insightful depositors start to mitigate their exposure to excess losses.

Initially, banks undergoing a silent run can expand their borrowing from abroad. To authorities, the short-term capital inflows foreign-bank loans induce may look like a favorable development. To see the danger signs, authorities must examine how banks are using the liquidity they receive. In the late stages of a silent run, new lending slows to a standstill. The interruption in new lending, by reducing investment and employment sharply slows the growth in GDP. The resulting economic downturn reinforces the downward pressure on domestic deposits. This further intensifies banks' liquidity squeeze, depresses domestic spending, and increases the breadth and depth of customer concern about the banks' ability to redeem their deposit debt.

### *2.1. A present-value formula for unbooked losses in government-assigned loans*

From an opportunity-cost perspective, a politically directed loan that is booked at par is a bad loan. Still, unless and until borrowers fall behind in making contractual payments, accounting schemes treat these "strong-armed" credits as if they were good loans. In this way, accountants routinely cover up the damage that an ongoing credit-allocation program does to bank capital. A straightforward way to estimate the losses inherent in each bank's portfolio of government-assigned loans, and corrupt insider obligations is to treat the interest subsidy the bank agrees to extend on any loan as a "pseudo-default rate" (PDR). The idea is that delivering an interest subsidy to the borrower requires the bank to accept a partial default on funds that the loan's riskiness implies the bank should receive. The subsidy represents value that is due but not collectable by the lender.

In a developing country, the interest-rate subsidy or PDR on a preferred loan can easily run as high as five percentage points. It is easy to show that over time a program of issuing more and more highly subsidized loans would drive the market value of bank loans substantially below the value of deposits and push to higher and higher levels the opportunity cost to the government of supporting whatever explicit or implicit deposit guarantees exist.

The unbooked per-dollar loss ( $U$ ) on each dollar of a preferred  $N$ -year loan is the capitalized value of its annual credit subsidy. Let  $i_C$  be the proper contract interest rate on the loan and assume initially that the loan's principal is expected to

be repaid in full at maturity. In this case, the capitalized percentage loss on subsidized loans may be calculated as

$$U = \sum_{k=1}^N \frac{\text{PDR}}{(1+i_C)^k} = \frac{\text{PDR}}{i_C} - \frac{1}{(1+i_C)^N} \frac{\text{PDR}}{i_C}. \quad (2)$$

As an example, we find  $U$  when  $N = 2$ ,  $i_C = 0.15$ ,  $\text{PDR} = 0.05$ . Eq. (2) tells us that  $U$  may be calculated either as

$$\begin{aligned} U &= \frac{0.05}{1.15} + \frac{0.05}{(1.15)^2} \quad \text{or} \quad \frac{0.05}{0.15} - \frac{1}{(1.15)^2} \left( \frac{0.05}{0.15} \right) \\ &= 0.0435 + 0.0378 \quad \text{or} \quad 0.333 - 0.2520 = 0.0813 \approx 8\% \end{aligned}$$

If we assume instead that the return of principal is expected to be delayed by  $X$  years beyond  $N$  or that the collectable amount will be reduced by a default rate  $D$ , the unbooked loss would be even greater.

Two more examples:

$$\begin{aligned} \text{If } N + X = 5 \text{ years: } U &= \frac{0.05}{0.15} - \frac{1}{(1.15)^5} \left( \frac{0.05}{0.15} \right) \\ &= 0.3333 - 0.1657 = 16.8\%. \end{aligned}$$

$$\begin{aligned} \text{If } N + X = 5 \text{ years and } D = 0.20: U &= \frac{0.05}{0.15} - \frac{0.8}{(1.15)^5} \left( \frac{0.05}{0.15} \right) \\ &= 0.3333 - 0.1326 = 20.1\%. \end{aligned}$$

Let us suppose that the average bank in a given country holds  $S\%$  of its assets in loans whose opportunity-cost value lies  $W\%$  below their book value. If  $A$  is the book value of bank assets, the market value of assets ( $A_M$ ) would be only:

$$A_M = A - (S)(W)A. \quad (3)$$

If  $S = 0.50$  and  $W = 0.10$ ,

$$A_M = A - 0.05(A) = 0.95A.$$

It is reasonable to assume that, if the supervisory regime remains unchanged,  $W$  and  $S$  will increase over time. For a given amount of accounting net worth, the higher either  $S$  or  $W$  becomes, the less reasonable it becomes for knowledgeable depositors to expect the bank to be able to repay its deposit debt out of its own resources. When unbooked losses ( $A - A_M$ ) exhaust the bank's accounting capital, it becomes economically insolvent.

A bank that operates in an economically insolvent state resembles in two ways a rampaging horror-movie zombie. First, the bank's ability to forestall a fatal depositor run depends on the black magic of a presumed government bailout. Second, managers of a deposit institution that loses its stockholder-contributed

capital are apt to lose their social conscience at the same time. The longer a bank spends in a zombie condition, the more its managers are tempted to loot the bank and to waste the risk capital supplied by government guarantees in fueling a false boom of go-for-broke lending.

Owners of a zombie bank have exhausted their liability for further losses. This exemption from new losses attracts them toward forms of risk-taking so imprudent that they cannot offer a positive risk-adjusted return. The attraction of such deals is simply that they offer the zombie bank a small chance of making a killing big enough to restore the bank to economic solvency.

Even if these last-ditch, long shot bets do not miraculously payoff, a silent run on a nation's banks can still be averted as long as sophisticated observers can be convinced that government finances are strong enough to protect depositors from the zombies' growing capital shortage. This means that governments that appear to keep the rest of their fiscal obligations in order can keep zombie banks in play longer than governments that run frequent and substantial budget deficits (cf. Krugman, 1979). Nevertheless, the larger a government's role in bank credit allocation becomes, the more zombie banks will emerge and the more likely a system-wide silent run will become. A silent run turns into open crisis when it reveals the fragility of the banking system to be larger than the government can effectively make taxpayers support.

### **3. Costs and benefits of regulatory efforts to support zombie banks <sup>1</sup>**

A regulation-induced banking crisis traces to authorities' efforts to use banks as vehicles for delivering subsidies to favored sectors and individuals through government-enforced credit-allocation programs. Unless the opportunity losses these programs impose on the banks are counterbalanced by offsetting government favors, participating banks are bound to lose their viability.

In recent years, outside pressures forced the financial regimes of crisis countries to liberalize. Previously, officials could generate countervailing subsidies by enforcing deposit-rate ceilings and restricting entry into banking markets. For many years, the present value of unbooked subsidies from anticompetitive regulatory restrictions were more than able to offset the unbooked losses that below-market lending imposed on the economic net worth of crisis-country banks.

During the last decade, however, the growing contestability of financial markets around the world eroded the ability of local authorities to control deposit interest rates and to enforce entry restrictions on offshore banks (Baumol et al.,

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<sup>1</sup> This section draws on Kane (1998, 1999a).

1986; Claessens et al., 1997). Changes in technology enabled depositors to shift their accounts to offshore institutions and changes in the regulatory schemes of other nations encouraged it. This *de facto* entry into local markets simultaneously led foreign banks to lobby to free up *de jure* entry and encouraged local banks to lobby for selective relaxations in deposit-rate ceilings.

In the more competitive Asian banking environments of the 1990s, financial repression could no longer generate subsidies large enough to offset the value banks lost through government-directed lending. In liberalizing regimes, the capitalized subsidy that could keep undercapitalized banks in play came instead from allowing them to expand rapidly and to take aggressive positions that exploited the risk capital they received from implicit and explicit government guarantees.

The 1997–1998 banking crises in East Asia are best understood as open struggles over how much different economic sectors will be made to contribute to paying off the opportunity losses previously rung up by a country's zombie banks. Table 2 summarizes the losses experienced in these crises.

The flow chart presented in Fig. 1 illustrates how the destructive pressures generated on zombie-bank capital passed through to government regulators. Particularly when financial liberalization is adopted as a last-ditch method for prolonging the life of zombie institutions, a nation is already in a hidden financial crisis and a subsequent transition to open crisis is almost inevitable. This is why — as noted by Diaz-Alejandro (1985) and Demirgüç-Kunt and Detragiache (1998b) — so many efforts to liberalize repressive financial regimes devolve within a few years into an open crisis.

Early in a liberalizing environment, even if insolvent banks are not formally resolved, the zombies can temporarily and perversely recapitalize themselves at taxpayer expense. This is accomplished by paying high interest rates on government-guaranteed deposits and using the funds gathered to book long-shot loans and investments. Auditors and regulators support this go-for-broke strategy when they let the zombies use accrual accounting to book high contract rates of return on these assets. Only if an unrealistically large percentage of these high-risk loans and investments ultimately succeed, can bank insolvencies be permanently repaired and open crisis averted. Unfortunately, the odds are strong that most of the risky projects zombies finance will fail and that the earnings accruals will have to be reversed. In the prototypical case, the zombies end up more insolvent than they were when the liberalization program began.

Financial liberalization is not complete until two things have happened: (1) authorities have confronted and resolved lender and borrower insolvencies fostered and concealed by the repressive past regime, and (2) implicit subsidies engendered by government credit allocation and restrictions on entry and exit no longer dictate the market structure of the banking industry. In the model described in this paper, financial repression causes both financial fragility and financial liberalization, and liberalization reveals and intensifies pre-existing financial fragility. Of course, this

Table 2  
 Size and scope of 1997–1999 East Asian banking crises  
 Source: Caprio and Klingebiel (1999).

Country	Scope of crisis	Estimate of total losses/costs
Indonesia (1997–ongoing)	As of March 1999, Bank of Indonesia had closed down 61 banks and nationalized 54 banks, of a total of 240. Estimates of nonperforming loans (NPLs) for the total banking system range from 65–75% of total loans.	Fiscal costs estimated to range from 50–55% of GDP.
Malaysia (1997–ongoing)	Finance-company sector is being restructured and number of finance companies is to be reduced from 39 to 16 through mergers. Two finance companies were taken over by Central Bank including MBf Finance, the largest independent finance company. Two banks, deemed insolvent, accounting for 14.2% of financial system assets, are to be merged with other banks. Overall, at end 1998, NPLs estimated between 25–35% of total banking system assets.	Net loss estimated at USD 14.9 bn, or 20.5% of GDP by 1999.
Philippines (1998–ongoing)	Since January 1998, one commercial bank, seven out of 88 thrifts and 40 out of 750 rural banks have been placed under receivership. Banking system NPLs reached 10.8% by August of 1998 and 12.4% by November 1998. Expected to reach 20% in 1999.	Net loss estimated at USD 4.0 bn, or 6.7% of GDP by 1999.
South Korea (1997–ongoing)	By March 1999, two out of 26 commercial banks accounting for 11.8% of total banking system assets nationalized; five banks, accounting for 7.8% of total banking system assets closed. Seven banks, accounting for 38% of banking system assets, placed under special supervision. Overall, banking system NPLs expected to peak at 30–40%.	Fiscal costs of crisis estimated to reach 34% of GDP in 1999.
Thailand (1997–ongoing)	Up to March 1999, Bank of Thailand intervened in 70 finance companies (out of 91) which together accounted for 12.8% of financial system assets or 72% of finance company assets. It also intervened in six banks that together had a market share of 12.3%. At end 1998, banking system NPLs had reached 46% of total loans.	Net losses estimated at USD 59.7 bn, or 42.3% of GDP in 1999.

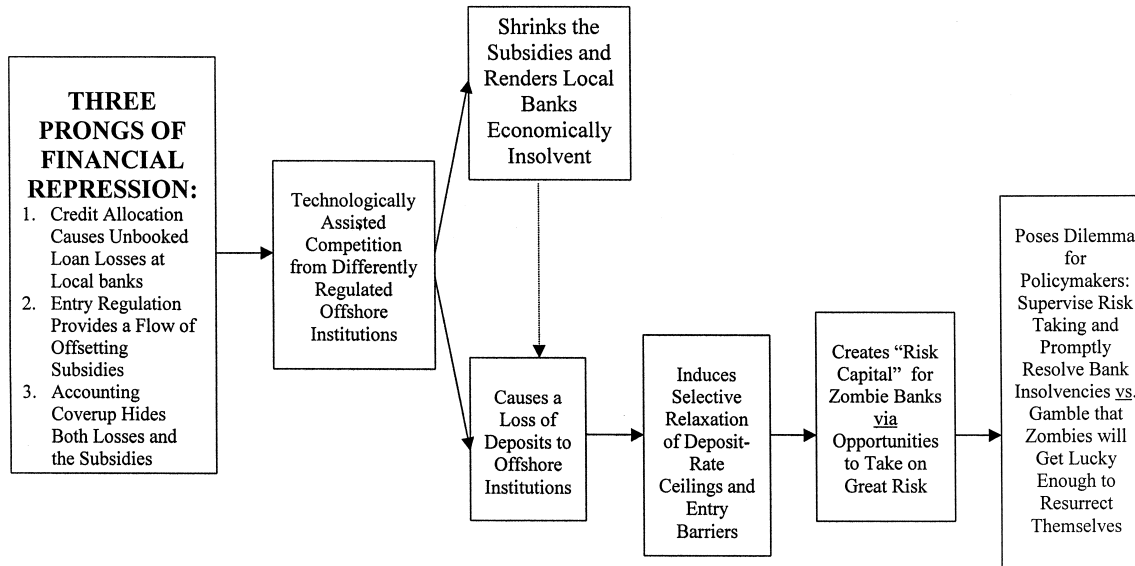


Fig. 1. Schematic diagram of how financial repression leads to foreign-bank entry and interest-rate liberalization that pose a crisis-generation *G* policy dilemma.

does not mean that liberalization causes financial crises. To the contrary, liberalization staves off open crisis until the zombies become so insolvent that the government's ability to raise the resources to bail out the depositors falls into serious doubt.

Bad loans are like termites that infest wooden buildings. They eat away at the crossbeams that support neighboring banks. The vulnerability of these structures to financial winds or tremblors develops slowly and unseen over time. Liberalization unleashes pressures that eventually reveal the longstanding failure of regulators to spot and remedy the infestation. In turn the clumsy and ad hoc nature of government efforts to manage and resolve the insolvency of zombie banks reveals the inadequacy of disaster-planning.

The maximum welfare loss a country experiences from undergoing an open banking crisis is limited by the amount of intangible social capital the country has previously invested in its banking sector. The larger is this amount, the more social capital authorities are apt to destroy if they strive to keep zombie institutions in play. This implies that when a country has only a rudimentary banking sector, liberalization might as well take the rapid "big-bang" approach. On the other hand, in countries such as Japan or Korea where substantial going-concern value exists in the banking sector, liberalizing authorities should be careful not to squander social capital by embracing supervisory strategies that allow zombie institutions to fuel false booms of go-for-broke lending.

"Silent runs" do not begin when individual banks become zombies. They begin when shrewd large-denomination depositors decide that officials cannot or will not continue to pay the tab that zombie banks are accumulating. Runs by sophisticated large depositors occur "silently" because these depositors benefit individually from minimizing adverse publicity. A rational silent run on a country's banking system resembles irrational herding behavior because it is stimulated by the spread of common doubts. These doubts reflect the breakdown of disinformational efforts to hide the costs taxpayers face for clearing the debts of the country's collection of zombie banks. The triggering condition is that the aggregate cost ( $G$ ) of supporting the system of implicit and explicit bank guarantees soars so high that taxpayer protests are expected to develop. Political resistance grows with  $G$  and compromises authorities' ability to raise the funds needed to pay the zombies' bill in full and without delay.

A silent run manifests a growing increase in each zombie bank's funding costs. In most countries, a zombie banking-system's first line of defense against a silent run is to arrange loans from relatively well-informed foreign banks. As would informed local depositors, foreign banks demand higher interest rates and increased collateralization for their claims. Net outflows of domestic deposits during a silent run are financed by a combination of sales of good assets and flotations of high-rate new debt. In choosing to finance a silent run, foreign banks may count on the IMF, their host government, and their home governments to protect them against defaults by host-country banks. Foreign banks may also hope to take over

insolvent banking franchises or to use the information they acquire in lending to zombie banks to speculate profitably against the local currency in offshore derivatives markets.

A silent run on a zombie banking system is apt to escalate into crisis unless bank regulators can increase the credibility of their guarantee system. Zombie banks' asset sales and funding-cost increases make their financial weakness more visible by lowering the accounting values of income and net worth. As a zombie bank sells good assets at market value,  $S$  rises. When  $S$  rises, the unbooked losses on the subsidized loans become a larger proportion of the bank's balance sheet. The more liabilities that a zombie bank books at increased interest rates, the more painfully its accounting and economic profits are going to be squeezed.

When a silent run becomes systemic, the information it produces challenges bank and regulatory disinformation. The expanding credibility gap clarifies that zombie banks are benefitting from informal and formal government guarantees in ways whose costs other parties — stronger banks and general taxpayers — will eventually be made to absorb. As this information takes hold, the willingness of taxpayers and stronger banks to tolerate the current regulatory and supervisory status quo falls apart.

When a silent run escalates, bank profit margins eventually turn negative. Negative profits spread zombieness to stronger banks and reveal disturbing information about the depth of individual zombies' capital shortages. The benefits zombies are extracting from taxpayers and viable banks become more obvious the longer a silent run proceeds. Regulatory efforts to retard the exit of inefficient and insolvent deposit institutions destroy the profit margins that strong banks can earn on deposit funds. As a result, the prospective costs of supporting zombie banks surge far above the value of the guarantees that the strong institutions receive.

Fig. 2 breaks the evolution of a regulation-induced banking crisis into six stages. The banking crises that transpired in Japan, Mexico, Korea, the Philippines, Malaysia, Indonesia, Thailand, and Brazil during the 1990s illustrate the first three and one-half stages of this model. Authorities resist moving beyond stage 4A unless and until half-hearted efforts at partial recapitalization result in renewed crisis.

The incompletely resolved crises that rolled around the world prior to 1997 taught financially sophisticated depositors and taxpayers at least three lessons. First, numerous banks profited temporarily from booking potentially ruinous risks. Caprio and Klingebiel (1996, 1999) cite 93 countries in which during the last two decades the net worth of the banking system was largely or entirely eliminated. Second, in country after country, domestic (and sometimes foreign) taxpayers were billed to bail out banks, depositors, and deposit-insurance funds. Caprio and Klingebiel report that taxpayers' bill for making good on implicit and explicit guarantees typically ran between 1% and 10% of GDP. The size of these bailouts shows how effectively poorly supervised bankers can shift the deep downside risk of their operations to taxpayers.

1. Generation of Multiple Zombies
  - Transition Via Government-Directed Lending and Subsidies to Risk Taking
  - Transition to Zombieness is Apt to Be Particularly Rapid at State-Owned Banks
2. Escalating Silent Runs Driven by Size of Unbooked Losses Test Strength of Government Commitment to Support Zombies
  - Regulatory Reliance on Disinformation and Coverup
  - Difficulty for Banks of Weathering Runs Rises Over Time
3. Palpable Bureaucratic Breakdown in Government's Guarantee Support Mechanisms
4. Recapitalization of Government Stabilization Funds
  - A. Stopgap Partial Recapitalization: Back to Stage 2
  - B. Full Taxpayer Bailout or Explicit Nationalization
5. Clean-Up of Zombie Institutions
6. Blame Distribution and Substantial Change in the Banking-Policy Regime

Fig. 2. Six stages of a regulation-induced banking crisis.

The final and most controversial lesson is that, in country after country, authorities deserve substantial blame for the size of the bills taxpayers have been made to pay. Officials actively encouraged loss-causing patterns of credit allocation and compounded the damage from credit losses by not resolving individual-bank insolvencies until their situations had deteriorated disastrously.

In an opportunity-cost sense, most of the losses that surface during a regulation-induced banking crisis were incurred long ago. The lack of timely accountability both for loan losses at banks and for poor supervisory performance at government regulatory enterprises foster patterns of bank lending that waste economic capital on projects that cannot earn returns large enough to repay the debt the projects spawned. The extent of bank losses indicates how costly it is to let financial regulation and the flow of aggregate investment be corrupted by influence peddling.

In the real sectors of Asian crisis countries, labor and capital had to shift from domestic investment (especially construction) to export production. The increased competitiveness of crisis-country exports spread exchange-rate pressure to other countries such as Taiwan, China, and Japan, who responded to the pressures in different ways. With a well-supervised and strongly capitalized banking system, Taiwan let its currency float lower to maintain its exports. Saddled with an insolvent state-owned banking system whose portfolios are loaded with nonperforming loans (Caprio and Klingebiel, 1999), China chose instead to defend its exchange rate and to keep its zombie institutions in play. Japan followed an intermediate path. It resolved some of its insolvent banks and intervened at times to soften its currency's downward float.

By definition, the risk capital in Chinese and Japanese zombie banks comes from the taxpayer. Implicit and explicit guarantees leave the government holding the entire downside of these banks' returns, but only some of the upside. This uneven division of potential earnings perverts bank governance and risk-taking incentives. It leads zombie-bank managers and owners to pursue opportunities that offer very large upside returns, even if these opportunities have only a tiny chance of generating the results desired.

For the crisis economies, the boom and bust resembles US experience at the onset of the Great Depression. In both environments, bank loans dominated the flow of aggregate credit. Disturbances in asset markets rocked the banking system, revealing a large number of insolvent banks, choking off funds for real investment and substantially increasing aggregate unemployment. However, a striking difference exists between the Asian Crisis of the 1990s and US experience in the 1930s. The difference is that some of the crisis countries' major trading partners and competitors — particularly the US — have accepted a relative rise in the value of their domestic currencies. Countries that acquiesce in this realignment of exchange rates tolerate a substantial loss of jobs in their own export and import-competing sectors. The willingness of other countries to accommodate crisis-country trade surpluses limited the depth and shortened the duration of the real economic downturns that the Asian crisis countries had to weather.

#### **4. Resolving a banking crisis: The inadequacy of bank bailouts<sup>2</sup>**

The path from financial repression to full financial liberalization is a long and bumpy one. Market and lobbying pressures that relax restraints on bank and nonbank competition for loans and deposits unleash strong counterpressures. In particular, managers and owners of zombie banks inevitably plead for government relief.

These contradictory pressures intensify the conflicts of interest under which regulatory authorities function. How authorities react to bailout pressure from the banking community is strongly influenced by the informational, ethical, and legal environment in which they function (Wall and Eisenbeis, 1999). When a country's laws and norms of personal conduct cannot effectively constrain influence peddling, taxpayers must improve and depend on their ability to observe and deter actions by banks and regulators that harm their interests.

Over time — albeit at different speeds — financial repression causes both financial fragility and financial liberalization. The liberalization process is not complete until two things have occurred: (1) the hidden lender and borrower insolvencies supported by the prior repressive regime have been confronted and

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<sup>2</sup> This sector draws on Kane (1999c).

resolved, and (2) subsidies engendered by government credit allocation and restrictions on entry and exit no longer dictate the market structure of the banking industry.

Although discouraging in some respects, the slow progress in resolving bank insolvencies shown in Table 2 compares favorably with the policies followed in the “noncrisis countries” of China and Japan. Especially in China, regulators continue to dodge taxpayers’ need to control bank risk-taking by resolving pre-existing bank insolvencies. Chinese officials are gambling at long odds that their countries’ zombies can attract enough new funds and put these funds to work successfully enough to resurrect themselves.

We can instructively compare a financial crisis to the collapse of a row of tall buildings in an earthquake. The government’s role in crisis prevention consists of formulating protective standards and backing these standards up by unstinting programs of preventive inspection, stress testing, and enforced correction of the deficiencies they uncover. In banking, crisis prevention begins with policies that extract reliable information on bank risk exposures and on the ability of stockholders and creditors outside the government to cover these exposures. It concludes with protocols for regulatory response that commit policymakers to make sure that capital shortages and imprudent risk exposures at individual banks are corrected promptly and equitably. So that they can handle a crisis efficiently, authorities must also commit themselves to pursuing reasonable insolvency-resolution priorities in the event of disaster and rehearse the application of these priorities in a simulated disaster.

Just as a poorly capitalized builder might benefit from circumventing burdensome features of a country’s building codes, insolvent banks can benefit from circumventing standards of safety and soundness. Similarly, just as the collapse of a block of tall buildings, the surfacing of a horde of zombie banks tells taxpayers that the government’s crisis-prevention program has failed and must be reworked. Finally, authorities that show themselves unable to muster and allocate rescue resources efficiently reveal that they or their predecessors have previously stunted on disaster planning.

In the midst of a disaster the first priorities are rescue and triage. Cleanup comes later. Still, authorities cannot expect to uncover individual casualties and treat them efficiently unless they have formulated an integrated disaster plan and drilled appropriate personnel in the plan’s execution. Regulatory staffs must be trained and empowered to react immediately at the first signs of crisis without having to wait for specific instructions from above.

Besides underscoring the political influence exercised by insolvent banks and borrowers, the crisis-resolution policies actually followed in modern financial crises reveal the absence of disaster planning, a distaste for engaging in triage, and a repulsion against completing the task of cleaning up the disaster.

Bank examiners must be given the data, expertise, and authority to size the depth of emerging insolvencies promptly. Supervisory personnel must be divided

into teams that are trained to determine for every individual institution that suffers an insolvency-revealing run the degree of help that the institution's various stakeholders would require to make them whole. Without this information, higher officials cannot evaluate the reasonableness of asking taxpayers at home or abroad for bailout funds.

In any bank whose net worth is too far gone to have any realistic prospects of repaying an injection of taxpayer loans, supervisors must be taught to regard stockholders' position as moribund. It is easy to see that it makes no sense in the midst of an emergency to divert limited surgical resources to sewing up the wounds or resetting the broken bones of a dying individual. Similarly, officials must be free to explain that in dealing with hopelessly insolvent institutions it makes no sense to open the public purse either to preserve the positions of stockholders and subordinated creditors or to keep paying top managers lofty salaries.

Insured depositors should be granted access to their funds as soon as it is administratively possible and uninsured depositors should be accorded a fair degree of immediate fractional access to their funds. Procedures for setting the transactable fraction of different deposit accounts should be founded in conservative valuation techniques whose application is carefully rehearsed in advance. Examiners should be trained to estimate the minimum percentage of uninsured deposits that could be recovered in an orderly liquidation of the bank's tangible portfolio. The rest of each depositor's balance should be set aside and unfrozen in stages as the depth and intangible elements of each bank's insolvency can be more accurately sized. How fully the positions of other uninsured creditors should be marked down (or "haircut") depends on the depth of — and margin for error in — the loss assessments that the examination team is able to assemble.

A banking panic may be defined by two conditions (Gorton, 1992). First, in a panic, runs become so widespread that affected banks cannot raise funds quickly by selling portfolio assets to other parties at fair prices. Second, institutions not experiencing runs are reluctant to lend enough funds to affected banks to allow them to maintain the convertibility of their deposits into cash.

For authorities, a systemic panic creates an urgent need to deal with a wave of spreading bank illiquidity and financial dislocation. However, the urgency of stopping a panic must not be allowed to over-ride the need to identify hopelessly insolvent zombie institutions and to begin the process of winding up their affairs. Issuing blanket government loans and guarantees to *all* troubled banks implicitly shifts the burden of absorbing the losses imbedded in the portfolios of zombie institutions to taxpayers and relieves managers, stockholders, and creditors from bearing due responsibility for the loss-making decisions they had previously ratified.

To end a panic efficiently, liquidity must be offered only to potentially solvent institutions and control over zombie institutions must be put into new hands. This means that authorities must always stop to take the measure of a troubled

institution's wounds before greatly expanding its access to liquid funds. It should be understood that, during any insolvency-assessment timeout, would-be transactors have strong incentives to use standard and innovative forms of credit to prevent transactions from grinding to a halt. Credit cards and checks can be accepted, along perhaps with other documents, as evidence of personal indebtedness whose collectable value may be supplemented from other sources if the issuing bank is later put into liquidation.

The most straightforward way to preserve the liquidity of bank depositors is to assure insured and uninsured customers that arrangements are being made to let them directly or indirectly borrow central-bank funds against the collateral of their recoverable net claim on each insolvent bank. Preparing examiners to calculate promptly the value at which bank assets could be liquidated in an orderly manner is the key step in enabling supervisors to restore access to depositor funds reasonable promptly.

Once examiners have made these quick-and-dirty calculations, depositors can be granted fractional access to the funds in their accounts. At the same time, the government should establish a formal claim on the equity of each insolvent bank either by completely extinguishing the rights of former shareholders or by taking a warrant position large enough to compensate taxpayers for the administrative and risk-bearing costs of overseeing the bank's recapitalization. In either case, the aim would be to sell the government's equity claim to private parties as soon as fully reliable information on asset values can be developed.

Banking regulators are unlikely to engage in disaster planning unless and until they acknowledge that neither systemic banking crises nor banking holidays are unthinkable events. Nevertheless, any government that takes credit for the rains must expect its citizens to blame it for the droughts. Like the weather, banking crises are part of a repeating cycle: in this case of bank lending to parties whose ability to repay cannot be fully assessed in advance. A banking panic typically occurs when previously hidden weaknesses in borrowers' aggregate repayment capacity surface suddenly. The depth of borrower weakness sizes the losses that need to be allocated across those who own the liabilities that banks issued in the process of funding their troubled loan positions. With the benefit of hindsight, everyone now sees these loans were in fact loss-making activities.

It is unreasonable to expect risky bank lending to generate an endless string of success stories. It is equally unreasonable to suppose that creating no practical alternative to keeping stakeholders in deeply insolvent banks from paying for their mistakes is a desirable public policy. The fundamental question in a crisis is what parts of society should wield the hammer and what parts should be made to act as anvil.

Banks that inefficiently manage their resources destroy their ownership capital. This loss of capital should unleash market forces that promise to transfer the valuable parts of a troubled bank's franchise into better-capitalized and potentially more-skillful hands. In our softhearted times, industry spin doctors try to convince

taxpayers that closing an insolvent bank or assigning its business to a new owner would be a barbarously cruel thing to do. Unless creditors and investors expect inefficient managers and undercapitalized firms to be promptly and appropriately disciplined, the incentives that govern the evaluation and selection of risky investment projects will break down. This is why society must find ways to reward banking regulators for formulating and enforcing meaningful capital requirements and must pound upon regulators that strive to keep zombie banks in play.

Regulators who choose not to develop a plan for allocating losses in a disaster must be held accountable for inefficiencies that emerge in their inevitably hasty and ad hoc response to crisis pressures. During the last 60 years, shortsighted regulators have prototypically acted first and thought about it later. By and large, they have justified their actions by framing each crisis situation as so unique and so dire that indiscriminate use of government guarantees and bailout support serve the public interest not only in the short run, and also over the longer haul.

Crises are not unique events, nor are they isolated in time from the events that precede and follow them. On average, the faster and more fairly an insolvent banking system's losses can be allocated, the quicker socially desirable patterns of bank lending can resume. The more efficiently and more fairly the process of loss resolution can be conducted, the smaller the bill in economic resources and social demoralization that taxpayers will have to pay to make the banking system whole again.

## **5. Summary implications**

Routinely tolerating bank and regulatory disinformation about the value of politically subsidized loans has dire consequences. First, it reduces politicians' accountability for seeking to distribute favors in this economically inefficient way. Second, it encourages regulators to duck the twin tasks of disaster planning and of monitoring bank solvency in cost-efficient ways. Third, these weaknesses in the incentives facing regulatory officials undermine bank solvency and distort the relative price of high-risk and low-risk investment projects. Finally, the resulting misinvestment of aggregate real saving increases the depth and taxpayer cost of eventual financial crises.

Although the inefficient capital investments supported by subsidized bank loans can fuel a durable macroeconomic boom, the capitalized value of the unbooked interest subsidies puts a drain on governmental fiscal capacity and undermines the economic value of bank assets. For any country, the ability to sustain deviations from fair and efficient patterns of regulation is limited by the ease with which its citizens can engage in capital flight. When such deviations exist, incentives for capital flight increase with advances in information technology, with the volatility

of the real economy, and with the fluidity of the political environment (Mei, 1999). The growing weakness of misregulated banks and the globalizing effects of improving financial technology encourage foreign banks to solicit domestic depositors in these countries. Open runs on these nations' currencies and banking systems occur when a continuing flight of large-balance depositors to foreign institutions casts doubt on supervisors' ability or willingness to continue bailing out their insolvent domestic banks.

To fulfill their stabilization and redistributive missions, the World Bank and the International Monetary Fund must refocus both their assistance and their policy advice. First, as Allan Meltzer (e.g., Meltzer, 1998) has emphasized, IMF loans should not support indiscriminate bailouts. Loans to crisis countries should be directed toward demonstrably solvent banks and made on good collateral and at a penalty rate. International institutions should strive to convince authorities in developing countries that the information revolution underway today makes it short-sighted to adopt credit-allocation schemes that decapitalize banks and misallocate a nation's scarce capital. International institutions can reinforce this advice by making it harder for themselves and country governments to cover up evidence of banking weakness.

Second, to attack disinformation at its source, these institutions need to promote reforms in public-service contracting and in the disclosure of financial information. This requires a reorientation of crisis-assistance programs to reward crisis planning and encourage supervisory enforcement of economically meaningful solvency standards. The effectiveness of this reorientation could be greatly strengthened by fostering the development of markets in first-to-default credit derivatives conditioned explicitly on potentially observable default events (or related signals) in crisis-prone countries or regions.

Establishing opportunities to trade in regional or country credit derivatives would have two benefits. The availability of credit-default derivatives would enhance the flow of private funds to developing countries by making it easier for lenders and investors to hedge country risks. Also, fluctuations in the prices at which particular contracts trade would surface information adverse to troubled banks and governments more rapidly and more reliably, creating pressure for emerging banking difficulties to be corrected before they could devolve into crippling financial crises. Trading in such instruments would unleash information that would undermine the credibility of disinformation about asset values in troubled countries before an extensive silent run could deepen the insolvency of the banking system by stripping it of its best assets.

Worldwide, the banking industry needs more *private* capital and the private supervision that accompanies this capital. With more private capital, the world would not have to put as much government risk capital into the industry. Private supervision and credit enhancements would displace the privately insurable part of government safety nets and establish market tests of government regulatory performance.

## Acknowledgements

This article refocuses a report prepared for the International Financial Institution Advisory Commission (Kane, 1999b). The author received valuable suggestions for improvement from Allan H. Meltzer, Bhagwan Chowdry, Anna Schwartz, and Larry Wall.

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