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Inter-American Development Bank
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Preventing Crisis and Contagion: Fiscal and Financial Dimensions

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MARCH 1999

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Preventing Crisis and Contagion: Fiscal and Financial Dimensions

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March 1999

Recent economic developments highlight Latin America's vulnerability to economic and financial turmoil that is triggered by events in distant corners of the globe. The Asian financial crisis that began in 1997 and the more recent Russian crisis have left the region profoundly shaken, and living in fear of a full-scale collapse. This "contagion" has occurred through a number of channels. The collapse of Asian demand has contributed to the recent slide in world commodity prices, cutting into the commodity-dependent region's export income, and undermining the public finances in a number of countries. The Russian devaluation has raised the spectre of sovereign default, making investors around the globe more wary of increasing their cross-border exposure. And the financial crises in Asia and Russia have severely undermined balance sheets of emerging-market investors, reducing their capacity to invest in the region, and forcing them into fire sales of their Latin American investments.

In this paper we lay out the fiscal and financial policies that can help protect economies from the kind of global financial turbulence the world is now experiencing. Exchange rate policies are discussed in a separate paper.

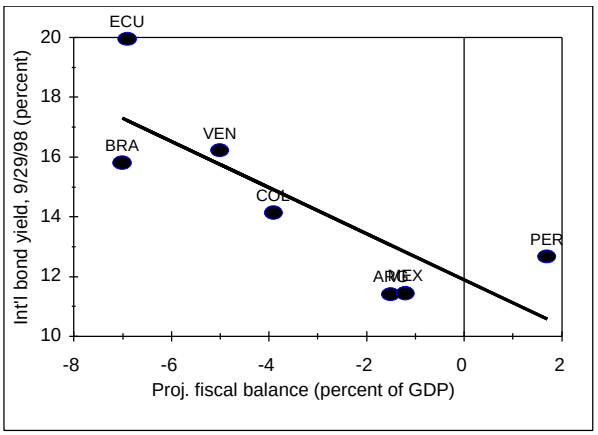
Domestic Policy Makes a Difference

The crisis in which Latin America is now embroiled is a global one. The economic and financial strains that were generated by the Asian crisis that began last year, and that have intensified with the more recent Russian collapse, have spread seemingly without discrimination, leaving no region and indeed no major economy of the world unscathed. It seems not to matter whether the economic and financial fundamentals are sound, as they are in most of Latin America, or unsound. The economies of Latin America do not suffer from the underlying weaknesses that brought down Thailand, Korea, or Russia, and yet the entire region suffered a collapse in asset prices as investors flee, and the international financial markets are essentially closed for all of the region's borrowers. In light of this, it might well be asked - is there any real point in discussing domestic policies other than, perhaps, those that seek to completely isolate the economy from the vagaries of the international financial system?

Although sound domestic policies have not insulated Latin American economies from the current international financial turmoil, it would be a mistake to conclude that policies are utterly irrelevant. Even if financial markets were completely undiscriminating, treating well- and poorly-managed countries identically, the impact of the financial disruption on the local economy will depend upon the domestic policy regime.

Furthermore, though they have seemed to act without discrimination during periods of extreme turbulence or panic, financial markets do seem to discriminate between countries on the basis of macroeconomic fundamentals once the panic begins to subside. There is some evidence for this in Figure 1, in which we plot the September 29 yield on countries' long-term dollar debt (in most cases a global bond of roughly 30 years' duration, where this was not available, a Brady bond) against an estimate of the countries' overall fiscal balance in 1998, measured as a share of GDP.[1]

Figure 1
International Bond Yields and the Fiscal Balance



We see a strong negative correlation between the fiscal balance, an imperfect but relevant indicator of the strength of domestic policy fundamentals, and the bond yield. The relationship suggests a significant payoff to sound fiscal policies; while a balanced budget is associated with an international bond yield of about 12 percent, a deficit of six percent of GDP is associated with a yield of over 16 percent.

None of this is to suggest that fundamentals such as the fiscal policy stance explain all, or even most, of the contraction in international credit that now afflicts Latin America as a whole. After all, the region's fiscal and other fundamentals were much the same in, say, July of 1998 as they were in August and September. But, whereas asset prices were relatively high and the markets were open for the region in July, bond yields skyrocketed and the financial markets slammed shut for the region in August. However, Figure 1 supports the idea that, as markets return to some semblance of normality, countries with better economic fundamentals will be among the first to return to the market, and will therefore be better placed to avoid major economic disruption.

Three Objectives for Policy

There are a number of policy arenas in which policymakers must act and dozens of decisions—some large and others small—that affect an economy's vulnerability to

[1] Recently issued global bonds that mature in either 2026 or 2027 were used except for Ecuador and Peru, for which only Brady bonds were available. This may help explain why yields for Ecuador and Peru were higher than would have been expected on the basis of fiscal outcomes.

crisis. Each decision involves a different set of difficult analytical issues, and different economic and political tradeoffs. But despite these complications and heterogeneity, we can organize our thoughts more effectively if we evaluate policy alternatives with three broad policy objectives in mind: (i) Be solvent, (ii) Be liquid, and (iii) Inspire confidence. Often these imperatives involve no tradeoffs but are instead mutually reinforcing. For example, fiscal reforms that reinforce the public sector's solvency are likely at the same time to inspire greater confidence about prospects for the economy. However, in other contexts there may be difficult tradeoffs, as we shall discuss below.

1. Be solvent. Of these imperatives, the first is the most fundamental. If policies imply insolvency or¢ in terms more appropriate for some contexts¢ are not sustainable, then liquidity can do no more than postpone the inevitable. And it goes almost without saying that insolvency precludes confidence. The important point here is that, in the volatile economic and financial environment that faces Latin America, solvency has as much to do with what *might* happen as what is *expected* to happen. That is, in order to protect an economy from financial contagion it is not enough to be solvent under existing circumstances and those that are expected to prevail, it is also important to be solvent under the more difficult circumstances that may very well be down the road if the world financial system comes under unexpected stress.

2. Be liquid. Solvency or 'sustainability' is essential, but it is not enough. It cannot be assumed that international financial markets will always be available for individuals, businesses or countries that are solvent. As is now on vivid display in every corner of the globe, financial markets occasionally seize up and credit vanishes for reasons that have nothing to do with borrowers' actions or circumstances. When this happens, those borrowers who are reliant upon the normal operation of financial markets need to have alternative ways to finance themselves if they are to avoid a disruptive payments crisis. They need sources of liquidity to ensure that they can roll over their debt and finance their deficits during these temporary interruptions of access to financial markets.

Coping with these liquidity shocks is a particularly important challenge for the economies of Latin America, and should be a key consideration in all dimensions of policymaking. For various reasons, including most notably their vulnerability to external shocks, public and private borrowers from the region are considered risky, and only a few countries of the region have investment-grade ratings. Because of regulatory structures in the industrial countries, this leaves Latin American borrowers¢ and borrowers in emerging market economies around the world¢ reliant on a relatively narrow range of potential investors, investors who are themselves highly vulnerable to portfolio shocks in other regions of the world. Thus, the losses inflicted on emerging-market investors by Asia and Russia generated a firesale of Latin American assets and an interruption of normal credit flows to the region, motivated not by a fundamental reassessment of Latin American risk, but by the financial difficulties that faced emerging-market investors in the North. But, while not caused by fears about the region's stability, the interruption of credit carries with it the danger of capsizing those economies without the sources of liquidity required to survive a potentially prolonged period of global financial turbulence.

3. Inspire confidence. It is in almost all circumstances far easier to maintain a stable macroeconomic and financial environment when there is confidence in the credibility of the fiscal and monetary policy framework, and in the robustness of the domestic financial system. In fact, all economies are at least theoretically vulnerable to confidence crises, if only because financial crises can so easily be self-fulfilling. Even the best-run bank would be brought down if depositors lost confidence in the institution and ran. Similarly, even sound and conservatively managed economies would find themselves in a crisis if, for some reason, holders of the public debt lost confidence in the government's ability or willingness to repay and refused to roll it over.

But confidence is essential in other less extreme but no less relevant circumstances. It is, for example, well understood that the inflationary costs of a move in the exchange rate or other inflationary shocks depend upon the credibility of government promises not to accommodate wage inflation. To raise another example that will be discussed in some detail below, we all understand that there are very good reasons to allow the budget to move into deficit during recessions. But financial markets will finance such deficits only if market participants have confidence that when the recession disappears, the government will be able to generate the fiscal surpluses that are required to service the higher public debt.

What is required to inspire the confidence needed to maintain economic stability in a volatile environment? Certainly the solvency or sustainability of the current policy stance, and sufficient liquidity to survive periods of international financial turbulence are necessary conditions for such confidence. But they may not be sufficient. The public needs to worry not only about current but also future policies, and in the absence of the right institutional framework policymakers have no way to commit themselves, much less future policymakers, to a given course of action. This means that policy actions and institutional structures need to be established with an eye toward inspiring confidence, as well as ensuring solvency and liquidity.

Arenas for Policy Action

These general objectives must guide action in two key arenas in which policymakers must make decisions: fiscal policy and policies toward the financial system. This paper will concentrate on the first two of these policy arenas, leaving exchange rate policy for a separate discussion (see Hausmann, Gavin, Pages-Serra and Stein, 1999). While this may exclude some relevant areas of policy, it allows us to cover most of the key decisions, and to highlight the ways in which decisions may affect solvency, liquidity and confidence. In Table 1, we summarize the discussion that follows, highlighting the solvency, liquidity and confidence problems that need to be addressed in each area, and potential responses to those problems.

The Fisc

Although both the Tequila crisis of 1995 and the ongoing crisis in Asia demonstrate that a responsible fiscal policy is no guarantee of economic stability, few would deny that incautious fiscal policies increase vulnerability at least, and if carried too far, will be an independent source of economic instability. The most obvious problems arise

from insolvency, when fiscal imbalances are large enough to generate doubts about the public sector's actual or prospective capacity to repay the debts implied by current and anticipated future imbalances. When these doubts become severe enough, financing for the deficits vanishes and the government is forced into either a fiscal adjustment or inflationary finance.

But this extreme situation of insolvency is not the only, or even the most important challenge faced by Latin American governments, almost all of which have debts and deficits that are manageable, and perceived to be so, in normal times. Problems arise during bad economic times, when the economy decelerates, fiscal revenues decline, and a previously manageable deficit begins to grow. It is widely understood that such an increase in the fiscal deficit is stabilizing and desirable, as long as the bad times are expected to be transitory. And, if holders of the government's debt had confidence that these transitory deficits would be followed by surpluses sufficiently large to service the implied debt, all would be well. But this confidence is often lacking, because policymakers cannot commit themselves (or future governments) to running the requisite future surpluses. The result: non-inflationary finance often vanishes just when it is most needed, and governments are forced into high destabilizing fiscal contractions just when a more stabilizing fiscal policy would be most valuable.[2] The interaction of solvency and confidence problems thus generates a highly destabilizing fiscal response to adverse economic shocks.

Liquidity concerns pose an additional challenge to fiscal policymaking. No matter how small the fiscal deficit, any government with an outstanding stock of debt needs to roll its debt over as it matures. The amount of debt that needs to be rolled is normally large, in the sense that generating a fiscal surplus sufficient to redeem the debt as it comes due would be economically and socially difficult and often politically impossible. This renders even solvent governments highly reliant upon the normal operation of financial markets. But as we have seen, the financial markets upon which Latin American governments must depend are not completely reliable, and have in recent years suffered periodic breakdowns, during which Latin American governments' access to finance temporarily vanishes. Unless governments of the region plan for these episodes, they may find themselves forced to take highly disruptive, emergency fiscal measures, and even these may be insufficient to generate the resources required to redeem the debt that cannot be rolled over.

How can the region's governments address these problems? To promote solvency, governments can do at least three things:

> *Run very small deficits or precautionary fiscal surpluses during normal times.* These reduce the precariousness of the region's access to credit by lowering, over time, the public debt and thus improving over time the public sector's perceived capacity to run deficits during bad times. More immediately, a precautionary fiscal

[2] Gavin, Hausmann, Perotti and Stein (1996) and Gavin and Perotti (1997) provide evidence that, in sharp contrast to the industrial economies, fiscal policy has been highly procyclical in Latin America, particularly during 'bad times' (roughly speaking, recessions).

surplus provides a fiscal 'cushion' so that the budget can absorb an adverse economic shock without generating a deficit large enough to be perceived as threatening.[3]

Because these surpluses are difficult to sustain in a competitive political environment in which fiscal decision making is plagued by the well-known traps associated with the process of social choice, it may be desirable to *develop appropriate rules for the conduct of fiscal policy*. The logical basis for such rules is the same as the case for an independent central bank, or autonomous regulatory authorities, and lies in the distortions inherent in the process of collective choice about aggregate spending or borrowing decisions. These distortions imply that outcomes can be systematically improved if participants in the decision-making process agree ahead of time to bind themselves to a set of rules.[4] Simple balanced-budget rules are highly inappropriate for the region, as they would essentially legislate the pro-cyclicality that we seek to eliminate. But rules that are expressed in terms of fiscal balance that is adjusted for the "cycle," or other economic factors such as a key commodity price, may improve matters.

Where the public finances are highly reliant upon certain key commodity prices, governments can also *develop well-designed fiscal stabilization funds*, which combine a fiscal rule for spending commodity-based income with an investment policy for the excess of actual commodity-based revenue over that which is spent in a given year. Once it has accumulated a sufficiently large balance, the stabilization fund not only promotes solvency, but also provides a stock of liquid assets that may be used to address liquidity problems created by a temporary loss of access to financial markets. Stabilization funds can also be complemented with policies to *use financial markets to insulate the budget from fluctuations in commodity prices.* While financial markets as they now stand provide only limited protection, this is no reason not to take advantage of the protection that they offer.

As we have noted, solvency is a necessary, but not a sufficient condition to prevent crises. Even solvent governments can experience liquidity problems, either because of an unjustified (but self-fulfilling) panic, or because international financial markets temporarily freeze up for reasons completely unrelated to the country involved. This means that, to decrease an economy's vulnerability to financial shocks, governments should concern themselves with liquidity, as well as solvency. Potential responses to this objective include:

Avoid short-term debt. Of course, this is easier said than done when economies come under stress and the market for medium- and long-term public debt begins to evaporate. Under these conditions, there is a strong case for indexing or

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[3]Gavin and Perotti (1997) provide evidence that Latin American countries that entered a period with a relatively small fiscal deficit tended to exhibit less pro-cycliclity than countries that entered the period with relatively high deficits.

[4] Eichengreen, Hausmann and von Hagen (1996) discuss in detail the distortions inherent in collective decision making about fiscal policy, and explain why imposing some constraints on the process may improve outcomes.

dollarizing the public debt, if by doing so governments can issue longer term debt and thus reduce rollover risk, and if the public sector is solvent. If the public sector is not solvent, then issuing indexed debt merely postpones the inevitable adjustment, and will make the adjustment much more expensive if the resolution of the unsustainable fiscal position involves, as it often does, a major move of the exchange rate, prices and interest rates.

Issue debt in advance of cash-flow needs, even if this means paying a significant difference between the cost of borrowing and the return that can be earned on deposits. Insurance is never free, but the security that is provided when the public sector's cash flows are covered for several months, even if financial markets vanish, may prove highly valuable. This insurance policy is particularly crucial around the time of elections, which have tended to be problematic periods for fiscal policymakers, and in which uncertainty about the nature of the future government may reduce fiscal policymakers' access to financial markets.

Seek contingent sources of credit. Last year, the Mexican Government entered into an agreement with 33 international banks that committed them to provide the government with a total of roughly US$2.7 billion should the financial environment deteriorate for Mexico. Recently, the government drew upon that line of credit. This was somewhat to the dismay of the banks involved, but the experience shows that insurance policies against international liquidity crises can be purchased in the market, at least in limited quantities.

Finally, fiscal policymakers need to inspire confidence. Achieving solvency and ensuring adequate liquidity will obviously go a long way here, but they may not be enough, because investors need to be confident not only that the current fiscal stance is adequate, but also that future fiscal policies will be adequate to service the debt the government is trying to issue. It is difficult for governments to create this confidence, if only because they cannot commit the actions of future governments. Thus, to increase confidence in fiscal stance, it may be desirable to:

Implement institutional reforms to buttress confidence in fiscal management over the medium term. Fiscal rules are one way to do this. But confidence can also be created through reforms of the budgetary process that provide for greater transparency, and ensure that the budgetary debate will not be skewed by unclear or flawed assumptions, or by misleading fiscal accounting. Policymakers could think about going further, and creating an autonomous scorekeeping institution with responsibility for ensuring adequate fiscal accounting, forecasting fiscal developments under alternative policy assumptions, and perhaps for making recommendations about the appropriate fiscal stance.

The Banks

It is only a slight overstatement to say that, during the 1990s, the conventional wisdom shifted from "It's mostly fiscal" to "It's mostly financial." We have learned that fragile banking systems can act as powerful amplifiers of external shocks. And because domestic banks are an important interface between the international financial system

and the domestic economy, the banking system is particularly exposed to international financial turbulence.

When the banking system is fragile, an economic or financial shock can lead to a loss of confidence in the system's stability, which can generate a disruptive flight from the banking system. A robust banking system is thus built upon the same three pillars: solvency, liquidity, and confidence. Policy choices are somewhat more complex than in the case of fiscal policy, because policymakers' influence over these is more indirect. There is, nonetheless, much that can be done.

Solvency of the banking system is a concern because the volatile macroeconomic environment in which Latin American banks must operate creates major shocks to the profitability of banks' borrowers, and therefore the quality of the banks' portfolio. Here it is worth noting that banks do not benefit when their borrowers experience a positive shock, because for the most part they make loan rather than equity investments but banks do lose when their borrowers experience an adverse shock large enough to result in default. However, solvency can also be threatened by good times, such as when a surge of capital inflows is intermediated by the banks, creating a lending boom that results in impaired balance sheets and a vulnerable financial system.[5] Finally, ensuring that banks remain solvent is more difficult in Latin America because supervisors must work with a weaker information base, and the scarcity of relevant skills undermines the effectiveness of bank supervision and regulation. What can be done to ensure that banks are solvent, and will remain solvent even after the economy is hit by a significant shock? Governments can:

Counteract bank lending booms by 'leaning against the wind' with countercyclical liquidity requirements.

Impose significantly higher capital adequacy ratios than may be appropriate for banks located in less volatile environments. The 8 percent capital adequacy ratio that was enshrined in the Basel accord was designed for major, internationally active banks operating in industrial economies. Banks operating in highly volatile environments like Latin America need more capital; luckily this is being recognized in many countries of the region, such as Argentina where the requirement of 11 percent is more attuned to the economic and financial environment in which the country's banks must operate.

Institute mechanisms to promote market discipline of domestic banks. Market discipline is no cure-all, but in an environment that is relatively information-poor, it is particularly useful to complement official supervision with the efforts of informed investors who have a financial stake in the soundness of the bank. In this regard, the requirement that a significant portion of a domestic bank's capital base be in the form of subordinated debt is particularly noteworthy. This structure creates a set of informed investors who have an incentive to monitor the behavior of the

[5]Gavin and Hausmann (1996) argues that bank lending booms have preceded every major banking crisis in Latin America and the industrial countries, and provide reasons to believe that the lending boom contributed to the subsequent crisis.

banks in which they are investing, thus complementing the efforts of the official regulatory apparatus.

Internationalize the domestic banking system. Banking firms are national not because national borders define natural market limits, but simply because bank charters are granted by national authorities, so that they can regulate the activities that take place within the country's borders. Internationally active banks promote robustness because they are diversified geographically, which makes them less vulnerable to country-specific macroeconomic and financial shocks. When they are hit by such a shock, local branches or subsidiaries of major international banks have access to the parent company's stock of capital. Furthermore, international banks from well-supervised financial systems with well-functioning capital markets bring with them the supervisory efforts of the world's most effective regulators, and the market discipline imposed by the world's most demanding capital markets.[6]

But solvency is not sufficient to protect the domestic financial system, for banks are preeminently vulnerable to liquidity crises, generated by runs by the bank's depositors, or by reserve outflows associated with an interruption of international capital flows during a temporary breakdown of the international financial system. Liquidity shortages caused by these events may force banks abruptly and unexpectedly to contract credit, putting both their borrowers and the economy under strain, and eventually undermining the stability of the financial system.

In the relatively tranquil economic and financial environment of the industrial countries, where official safety nets are relatively broad and strong, these runs have become a subject of interest mainly to economic historians, and if bank reserve or liquidity requirements are thought of at all, they are considered mainly as tools to improve monetary control. But in the more volatile Latin American context, the risks of systemic illiquidity in the banking system are much more real, and are far more difficult to handle. In the event of a run on the banking system, depositors are likely to flee into a foreign currency, which the authority cannot print, rather than the domestic currency that it can.

How can authorities minimize the risks of systemic illiquidity in the banking system? They can:

Build bank liquidity requirements as an essential element of the prudential regulatory framework, whether they are needed for purposes of monetary control or not. Where the volatility of the demand for bank deposits is high, liquidity requirements should also be high. And to prevent these requirements from unnecessarily raising the cost of credit, they should be remunerated. A substantial portion of the reserves should be in the form of liquid foreign currency assets that can satisfy the sudden demand for international liquidity in the event of a shock.

Discourage intermediation of short-term capital inflows by requiring that banks hold substantial reserves against all of their short-term liabilities, foreign and

[6] Gavin and Hausmann (1997) discuss these ideas at substantially greater length.

domestic. If international deposits are more volatile than domestic, they should attract higher reserve requirements.

Encourage the development of international standby credit facilities. Although there is no true international lender of last resort, the banking system can protect itself from the danger of systemic liquidity crises by entering into contracts with private international lenders that provide a source of contingent credit in the event of a liquidity crisis in the domestic banking system. Argentina has created a Contingent Repo Program, which gives the Central Bank the right to obtain short-term credit from a collection of 13 international banks in the event of a liquidity crisis such as the one that hit the country in 1995. It is an innovative example of ways in which markets can be utilized to protect the financial system from liquidity shocks. Such programs need not be limited to the Central Bank, but could also be extended to domestic banking institutions.

Finally, the domestic banking system needs to inspire confidence. Solvency and liquidity are essential elements, but they may not be enough, for even the most prudently run bank could be brought down by a bank-run. To promote confidence in domestic banks, governments can also:

Promote transparency by setting high standards for bank disclosure and working with the private sector to improve accounting standards.

Create adequate safety nets so that small depositors will be relieved of worries about the safety of their deposits, and will therefore be less reluctant to flee on the basis of vague anxieties or wild rumors. Certainly such safety nets create potential problems of moral hazard, which must be controlled through the prudential regulatory and supervisory framework. But, in our view, the costs of such moral hazard are easily overstated, and are almost certainly very small by comparison with the costs of a bank-run that could have been prevented.

Table 1
Overview of Policies to Promote Economic and Financial Stability

	Be solvent	**Be liquid**	**Inspire confidence**
The fisc	**Problem:** Precarious access to noninflationary sources of financing creates the need for a large and destabilizing fiscal adjustment during bad times. **Response:** Run a precautionary fiscal surplus in good times. Introduce fiscal rules or stabilization mechanisms to cope with large fiscal shocks.	**Problem:** Need to refinance existing debt stock creates 'rollover risk' if financial markets disappear. **Response:** Issue debt well in anticipation of cash-flow needs, especially around the time of elections. Avoid short-term debt. If necessary to extend the maturity of the debt, and if the public sector is solvent, issue indexed debt.	**Problem:** Inability to credibly commit to future surplus undermines confidence in medium-term fiscal viability. Danger of self-fulfilling inflationary expectations. **Response:** Institutional reforms to buttress credibility of medium term fiscal management.
The banks	**Problem:** A volatile macroeconomic environment poses major threats to bank solvency. Large capital inflows may generate bank lending booms that lead to impaired balance sheets and a vulnerable financial system. A weak information base and limited regulatory capacity undermine the effectiveness of bank supervision and regulation. **Response:** Impose capital requirements for credit risk appropriate for the volatile economic and financial environment. Institute mechanisms to promote market-based discipline over banks. Internationalize the financial system.	**Problem:** Volatile money demand creates large liquidity shocks for banks. **Response:** Substantial (and actively managed) liquidity requirements for banks, held in the form of foreign-currency (or backed by high level of international reserves). Discourage intermediation of short-term capital inflows. Encourage development of international standby credit facilities. Internationalize the banking system.	**Problem:** Lack of confidence and limited information create the potential for self-fulfilling panics. **Response:** Create adequate financial safety nets. Promote transparency in the domestic banking system.