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Preventing Financial Crises in Developing Countries

FINANCIAL CRISES OCCUR WHEN FINANCIAL SYSTEMS BECOME ILLIQUID or insolvent. Such crises have recurred throughout the history of capitalism. A collapse in investor confidence, usually after a period of market euphoria, marks such crises—examples include the Dutch tulip mania crisis of 1637–38, the Indian cotton futures market crash of 1866, and the Great Depression of 1929. When foreign lenders are involved, cross-border payments problems arise as well.

The East Asian crisis belongs to the class of twin financial crises, involving both banking and currency problems. According to modern economic theory, information asymmetries and financial market failures are central in explaining macroeconomic fluctuations and financial crises.[1] Because lenders know less than borrowers about the use of their funds and cannot compel borrowers to act in the lenders' best interests, lenders can panic and withdraw their funds when they perceive increased risks, in the absence of adequate public regulation and safeguards. That can trigger

much wider financial crises, with spiraling real-sector effects. The costs can be severe. Such crises can bring down the financial system, cause asset prices to collapse, and bankrupt sound as well as unsound banks and corporations. The East Asian crisis is expected to cause output in Indonesia, the Republic of Korea, and Thailand to drop 12–24 percent in 1998 (from previous trend levels), throwing millions into unemployment and poverty.

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Over the past 100 years industrial countries have reduced the incidence and severity of systemic crises through public policy and institutional reforms. They have not eliminated them entirely, however, as the savings and loan crisis in the United States in the 1980s, the banking crises in Nordic countries in the early 1990s, and the unfolding financial sector problems in Japan illustrate. In developing countries there is often a mismatch between public policies and the institutional structures (which are slow to change) intended to prevent financial crises, and their integration with world financial markets. Thus the number of such crises remains large and their costs have been growing. Reducing their incidence calls for policy and institutional reforms in both national and international settings.

Until the surge in private capital flows in the 1990s, most crises in developing countries (including the sovereign debt crisis of the 1980s in Latin America) stemmed from macroeconomic mismanagement, including excessive public deficits and overborrowing abroad. As evident in the light of recent events in Russia, reforms and policies to avoid such sovereign debt crises are important and still relevant in developing countries. The focus of this chapter, however, is on the type of crisis which involves private-to-private capital flows, and the role of domestic and international financial systems in intermediating such flows. The international setting is important because these crises (East Asia in 1997, Mexico in 1994, and Chile in 1982) are closely connected to rapidly rising cross-border private capital flows. These flows have grown massively in the past decade, but without the improvements in institutions and public regulation needed for their safe management.

The analysis of financial crises and the appropriate policies needed to prevent them highlights the way various factors interact and amplify risks. These include inadequate macroeconomic policies, surges in capital flows, fragility of domestic financial systems, weak corporate governance, and ill-prepared financial and capital account liberalization. Policymakers need to be concerned about these interactions in the sequencing and timing of policy and institutional reforms.

This chapter's key messages:

- *The number and costs of financial crises have risen in developing countries since the 1980s, partly because relatively small economies are more exposed to the risks of international capital flow reversals.* Many recent

crises are in fact both currency and banking crises, including the East Asian crisis (1997) and the Mexican peso crisis (1994). Developing countries have recently been exposed to a wave of capital inflows but have little experience with the institutional and prudential safeguards needed to minimize associated risks. The easier availability of cheap international capital in good times encourages excessive private risk taking, which can turn into a major problem when favorable financial sentiment erodes. The institutions needed to minimize the risks of such crises take a long time to develop, while the political constraints on prompt policy actions to avert them are often severe. However, the building of such required institutions and safeguards needs to proceed vigorously in all countries, so that the potential benefits of globalization can be realized with fewer risks.

- *Poor macroeconomic policies leave a country vulnerable to financial crisis, and prudent policies are the first line of defense. In the presence of large capital inflows and weak financial systems, however, the room for maneuver in setting appropriate macroeconomic policies to control excessive private borrowing and risk taking is constrained because of the presence of numerous tradeoffs and their distributional consequences.* Fixed or pegged exchange rates help anchor expectations and reduce uncertainty. But they may also provide unintended incentives to the private sector to overborrow (as in Thailand), while sterilizing capital inflows may be costly and ineffective and shift the composition to short-term and volatile inflows. Flexible exchange rates help regain autonomy for monetary policy, improve risk perceptions, and reduce incentives for excessive borrowing, but they are not always enough to avoid crises and may result in volatile and misaligned real exchange rates. Countercyclical fiscal policy is important, but it too has tradeoffs (fewer schools and roads, for instance, to accommodate more shopping malls and office towers). What is needed is a multidimensional approach, often with more flexible exchange rates, greater reliance on fiscal policy, and better and tighter domestic financial regulation (and, where necessary, restrictions on capital flows) to reduce excessive capital inflows, domestic lending booms, and risks of financial crises.
- *Financial sector liberalization, which can significantly boost the risk of crisis (particularly in conjunction with open capital accounts), should proceed carefully and in step with the capacity to design and enforce tighter regulation and supervision. At the same time, however, efforts to improve prudential safeguards and banking operations will need to be accelerated.* There is strong evidence of a higher probability of crisis following liberalization without stepped-up prudential safeguards (even in industrial countries). Regulations that increase safety and stability are needed. Banking and capital market reforms, oriented toward better risk management, are critical in any strategy to prevent financial crises. Public policy and institutional reforms that

clamp down on connected bank lending and improve corporate governance are equally essential to support the safety of the financial system.

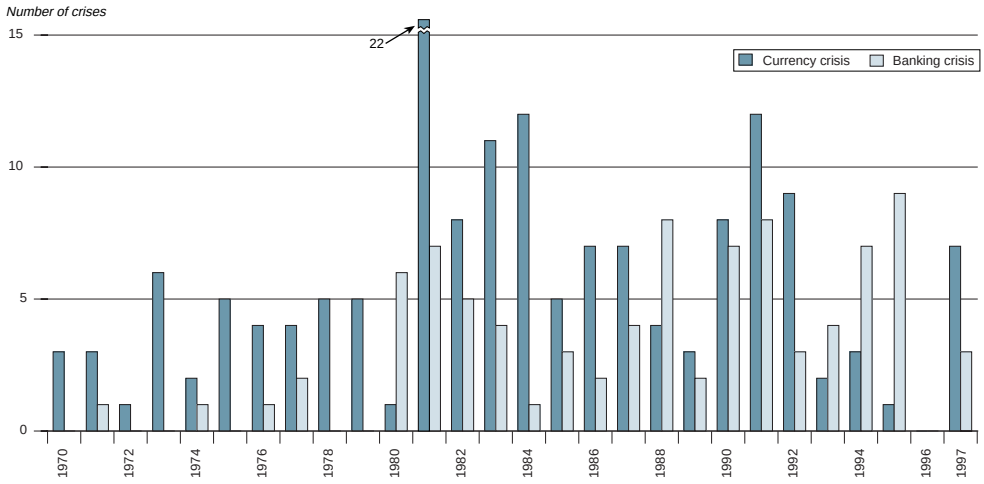
- *Capital account liberalization should also proceed cautiously, in an orderly and progressive manner, given the large risks of financial crises—heightened by international capital market failures—in developing countries*. Benefits of capital account liberalization and increased capital flows have to be weighed against the likelihood of crises and their costs. Clearly the benefits from foreign direct investment (FDI) and longer-term capital inflows outweigh the costs associated with the increased likelihood of financial crisis, and developing countries should pursue a policy of openness. But for more volatile debt portfolio and interbank short-term debt flows and the related policy of full capital account convertibility, there are higher associated risks of financial crisis and greater uncertainty about the benefits. Tighter prudential regulations on banks, and, where the domestic regulatory and prudential safeguards are weak, restrictions on more volatile short-term inflows that minimize distortions and are as market-oriented as possible (through taxes, for instance), may reduce the risk of financial crisis. For countries that are reintroducing such restrictions on capital inflows, these actions will need to be managed carefully so as not lead to a loss of confidence; their reintroduction for capital outflows during a crisis may pose difficult problems (not considered here).
- *Changes are needed in the architecture of the international financial system in view of the excessive volatility (euphoria and panics), strong contagion effects, and increased scope for moral hazard in international financial markets*. The most pressing issue is to develop better mechanisms to facilitate private-to-private debt workouts—including, under some conditions, "standstills" on external debt—and help resume capital flows and increase international liquidity to countries in crisis. Although there are some compelling arguments in favor of a lender of last resort, appropriate burden-sharing, rules for intervention, and moral hazard remain difficult and unresolved problems. Improved regulation by creditor-country authorities and better risk management of bank lending to emerging markets should also help reduce the probability of crisis. More timely and reliable information is desirable, but complete transparency and better information alone will not prevent crises. Still, better use of warning indicators may help governments take corrective actions early enough to reduce the extent and cost of crises. The issues are undergoing debate and consideration in different forums.

Costs and causes of financial crises

Financial crises have become more frequent in developing countries since the start of the 1980s (figure 3-1). They have taken three main forms: currency crises, banking crises, or both. Currency crises are usually attacks on the domestic currency that

Increased incidence of financial crises since the 1980s

Figure 3-1 Incidence of financial crises, 1970–97



Source: Caprio and Klingebiel 1996a; Frankel and Rose 1996; and Kaminsky and Reinhart 1997.

end with a large fall in its value, although they can include speculative attacks that are successfully warded off by the authorities.[2] Banking crises refer to bank runs or other events that lead to closure, merger, takeover, or large-scale assistance by the government to one or more financial institutions.

Sometimes, both currency and banking crises occur around the same time—the so-called twin crises. The 1997 financial crisis in East Asia is the most recent example—with Indonesia, the Republic of Korea, Malaysia, and Thailand all experiencing currency turbulence along with serious banking sector problems. Earlier examples include the Southern Cone countries—Argentina (1981), Uruguay (1982), and Chile (1982). More recently, Mexico (1994), Argentina (1995), and the Czech Republic (1997), as well as Finland, Norway, and Sweden in 1991 and 1992 have experienced similar problems (Kaminsky and Reinhart 1997). While these crises have been associated with large volumes of private-to-private capital inflows, many other currency or twin crises in developing countries, including most recently in Russia, are of the traditional type where excessive public borrowing plays a central role.

Financial crises can entail large costs (in lost output and welfare) and distributional effects, which are substantially magnified in a twin crisis. Banking crises exacerbate the negative impacts on the economy through a reduction in the volume of loans, the misallocation of financial resources, and the ensuing contraction in credit and cutbacks in investment (box 3-1).

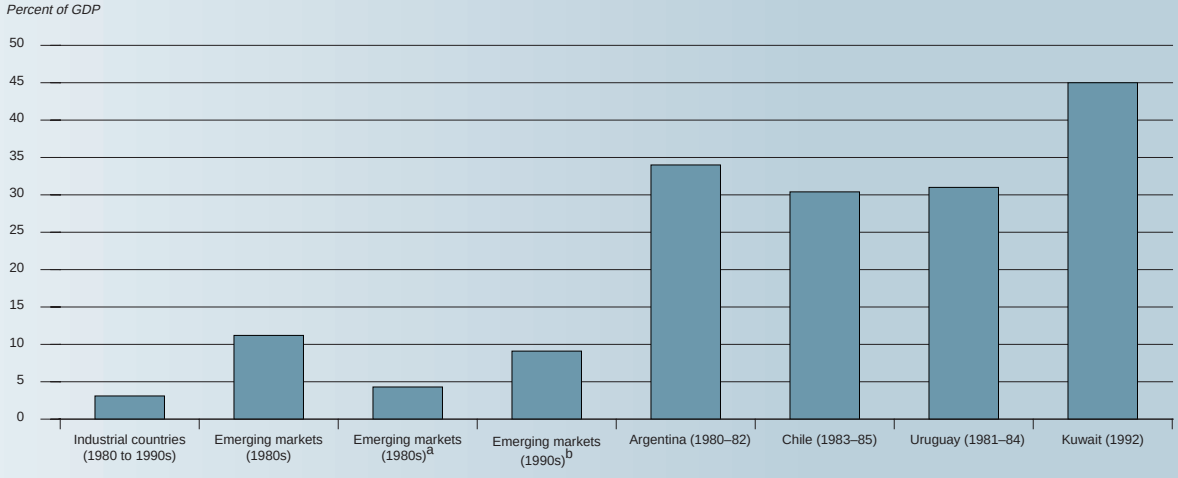
The greater frequency and cost of currency and twin crises have been associated with surges in international capital inflows—especially private-to-private flows—

Box 3-1 Costs of financial crises

A World Bank study found for a sample of 14 banking crises a 5.2 percent average decline in output growth after crisis (World Bank 1997b). Another study found in emerging markets an average cost in lost output (over to trend output) of 14.6 percent of gross domestic product (GDP) per crisis (IMF 1998b). Yet another study found that both output growth and efficiency fall after a banking crisis, with exchange rate volatility and currency crisis common in their aftermath (Lindgren and others 1996). Such crises can also result in significant resolution costs, stretched over many years. A study in Latin America found that at least 4 to 5 years are required to resolve banking crises (Rojas-Suárez and Weisbrod 1996). The direct fiscal or quasi-fiscal outlays for bank restructuring vary between industrial countries and emerging markets and between individual countries from 1.5 percent of GDP for U.S. commercial banks in 1989 to 45 percent for Kuwait in 1995 (box figure

Costs of crises can be huge…

Cost estimates of bank restructuring



Notes: The midpoint cost estimate for each country-episode was selected. The sample includes seven industrial and 34 emerging countries.
a. Excludes Argentina, Chile, and Uruguay.
b. Excludes Kuwait.
Source: World Bank staff estimates based on Caprio and Klingebiel 1996a; Lindgren and others 1996; Rojas-Suárez and Weisbrod 1996; Alexander and others 1997.

to developing countries and the growing integration of these economies with world financial markets (see below and Kaminsky and Reinhart 1997).

Private capital flows have surged

Private capital flows to developing countries rose from about $42 billion in 1990 to roughly $250 billion in 1996. Long-term private capital flows went from less than 1 percent of developing countries' GDP in 1990 to a peak of 3.7 percent in 1993, and about 2.8 percent in 1996 (figure 3-2). The surge in private capital flows is unprecedented (at least since the end of the First World War),[3] being twice as high as the pre-

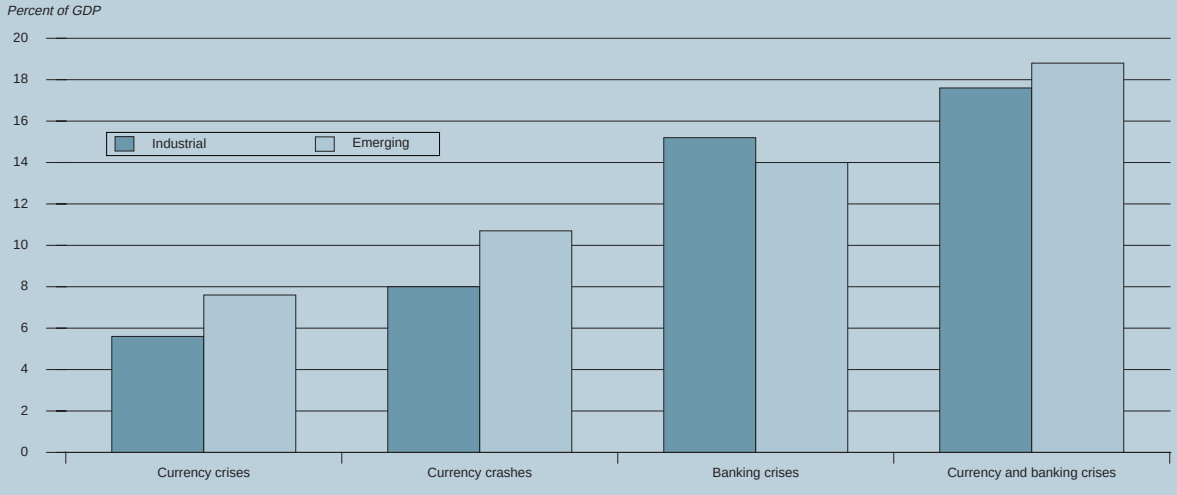
below). In general, restructuring costs are higher in developing countries—where they range between 3 percent and 25 percent in Africa, between 1.8 percent and 13.2 percent in Asia, between 0.3 percent and 41.2 percent in Latin America, and between 1 percent and 15 percent in Europe and Central Asia—than in industrial countries, where they average less than 6 percent.

Costs of currency crises are higher for emerging markets than for industrial countries, and even higher in cases of currency crashes (see box figure below).

These costs are also much higher for twin crises reaching 18 percent of GDP in 26 emerging markets, and for developing countries than for industrial countries. Moreover, the average recovery time back to trend growth rates is longer for such crises (2.6 years, compared with 1.5 years for currency crises and 1.9 years for banking crises). Calculations for selected individual countries (for this report) find that the cumulative loss of output (relative to trend) ranges from a low of 0.2 percent of GDP (Mexico 1976) to a high of 30.6 percent (Chile 1971).

…and are greater in developing countries

Cumulative loss of output per crisis for industrial and emerging economies



Note: Only crises with output losses are represented.
Source: International Monetary Fund 1998b.

vious peak in private capital flows during the oil-boom years (1978–82). Further setting them apart, much of recent capital flows has been private-to-private, rather than private-to-public, flows. Some surges in capital inflows have been particularly massive: in 1989–96 cumulative private capital inflows reached 55 percent of GDP in Thailand and 50 percent in Malaysia; and in 1993–96, they reached 43 percent in Hungary and 35 percent in the Czech Republic. By contrast, the peak for Organisation for Economic Co-operation and Development (OECD) countries in 1989 was 2 percent of GDP per year (on a weighted average basis).

High volatility of private capital flows

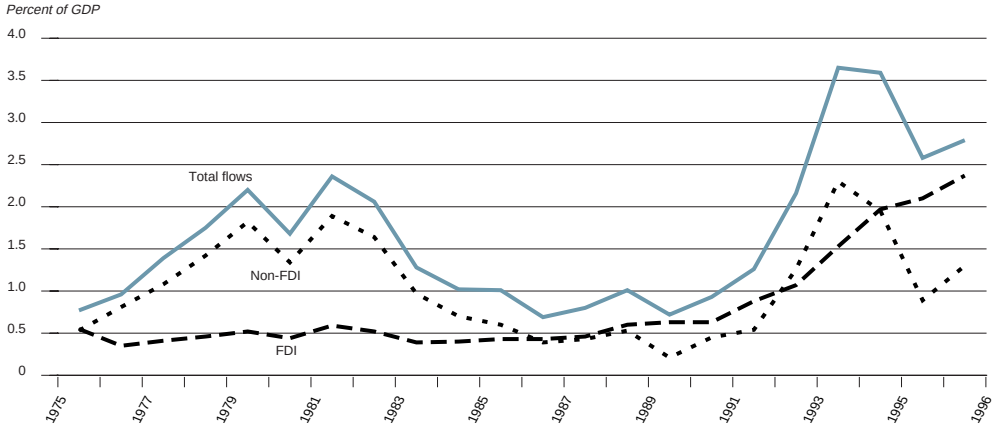
Private capital flows have also been volatile and subject to large reversals. This is seen in the decline during the debt crisis of the 1980s, and in the reversal after Mexico's crisis in 1994, and after East Asia's crisis in 1997. FDI has been more stable and rose steadily throughout the various crises in developing countries (figure 3-2). Thus the recent rapid increases in FDI flows might be construed as being of the "jet-airplane" variety, bringing benefits with fewer risks.[4] Non-FDI flows show far greater volatility, with sudden reversals.[5] Analysis (see below) of non-FDI flows (portfolio equity, bonds and other debt securities, and bank loans) shows that medium-term bank loans have declined and have been replaced by portfolio flows, which show greater volatility than FDI, and sudden reversals, as evident after the 1994 Mexican crisis. Short-term bank loans are even more volatile, as witnessed in the East Asian crisis.

In the context of the increasing integration of developing economies with world financial markets, the fundamental causes of twin crises of the type seen in East Asia lie both in domestic policies and institutions and in international capital market failures. The analysis in the rest of the chapter focuses on these causes of financial crises and appropriate policies to prevent them.[6] The discussion highlights the interaction of these factors, especially the interaction of international capital markets with domestic financial vulnerabilities, which amplify the risks of a crisis:

- Macroeconomic policies may either exacerbate financial risks or fail to prevent boom-bust cycles, often a cause of financial crises.

Private capital flows are volatile, but FDI has been rising steadily

Figure 3-2 Net private capital flows to developing countries, 1975–96



Note: Weighted average.
Source: World Bank 1998c.

- Inadequate prudential regulation and premature liberalization of domestic financial systems (along with poor corporate governance) may create conditions for excessive risk taking by lenders and borrowers.
- These two factors, coupled with short-term private-to-private capital inflows surges (as in East Asia) and premature capital account liberalization, can create even greater risks, and increase the likelihood of financial crises.
- Reliance on capital inflows exposes developing countries to external panics that may cause sudden and massive reversals in capital inflows, deep illiquidity, and strong contagion effects. Minimizing these risks and dealing more effectively with such financial crises would require a better architecture of the international financial system.

Moreover, political economy constraints may also prevent governments from acting decisively to prevent a crisis, even when there are warning signals of vulnerability (often for many variables at the same time) and a crisis is known to be brewing—as in Thailand and Mexico (box 3-2).

Macroeconomic policies to manage capital flows and reduce financial risks

Macroeconomic policies designed to avoid large external and internal imbalances are a first line of defense in the prevention of financial crises. Crises are often a result of boom-bust cycles, with significant interaction between macroeconomic factors and weaknesses in financial and corporate sectors. For instance, an economic boom may result when weak regulation and government guarantees of financial liabilities lead financial institutions to engage in excessively risky lending (Krugman 1998; Corsetti, Pesenti, and Roubini

Box 3-2 Political economy and financial crises

Preventive measures to avert a crisis are obviously preferable to waiting for one to occur. Policymakers, however, often respond to other pressures. Governments may fail to act because politicians give greater weight to short-term costs and less to long-term gains. Bad information and analyses may also play a role. Interest groups likely to lose out from policies that would minimize the risks of crises lobby to protect their interests. For example, measures to correct banking system fragility hurt bank owners, managers, shareholders, and well-connected firms (as in Indonesia) almost immediately, while benefits are long-term and diffused. Countries that have not experienced financial crisis lack a realistic notion of their costs. The lessons of crises influence the behavior of policymakers. The hyper-inflation experience of the 1920s has left German policymakers extremely sensitive to inflationary signs, while policymakers in industrial countries have a strong collective memory of the effects of the Great Depression. Finally, policy conflicts abound, and the process of policymaking within countries is sometimes flawed (in Korea and Thailand, for example, with limited information sharing between the central bank and the Ministry of Finance).

Some of the most effective banking sector reforms have taken place only in the wake of major crises, as in Chile in the 1980s and Argentina after the 1994–95 Mexican crisis. Once the domestic financial system is in deep trouble, with large external borrowing requirements, the conflicts in policy may no longer be manageable. Bailing out domestic banks only results in more pressure on the external situation. A "soft landing" scenario may no longer be practical.

1998). Macroeconomic policies can either lessen or aggravate these risks. Surges in capital inflows can create the conditions for boom-bust cycles and compound macroeconomic and financial management problems—especially in small, open developing economies with fragile financial systems (McKinnon and Pill 1997; Corbo and Hernandez 1996).[7] Moreover, real exchange rate movements affect resource allocation, particularly between tradable (export and import-competing) and nontradable (for instance, real estate) sectors. Loss of competitiveness for tradables and booms in nontradables can contribute to strains in the domestic financial system while aggravating external imbalances.

Sterilization of capital inflows may work in the short term, but it is increasingly costly over time.

Government's room for macroeconomic policy maneuver is often restricted by important tradeoffs and ineffective instruments. Fiscal policy may be too blunt to offset the effects of volatile capital inflows, while reducing public spending may conflict with other goals. Tighter monetary policies and sterilization may even increase capital inflows, particularly volatile short-term flows, while an exchange-rate peg eliminates the effectiveness of monetary policy and increases incentives for private borrowing abroad. A shift to flexible exchange rates increases the latitude in monetary policy maneuver but by itself may be insufficient to control overborrowing and may lead to greater exchange rate volatility. Flexible exchange rates can also result in big losses of competitiveness and misalignments when capital flows surge to high levels.

Fixed exchange rates and sterilization of inflows

Policymakers use fixed or quasi-fixed exchange rates to reduce uncertainty about exchange rates, avoid nominal appreciation and maintain external competitiveness, and provide a nominal anchor to preserve domestic stability.

When private capital inflows surge, however, fixed or pegged exchange rates may become untenable and costly because of the implications for domestic macroeconomic goals (such as reducing unemployment), the inflationary pressures they generate, and the incentives they create for private agents to overborrow. The pursuit of a pegged nominal exchange rate contributed to the East Asian crisis, especially in Thailand.

The typical initial response to a surge in capital flows is to increase official reserves to maintain the exchange rate and guard against sudden reversals. An analysis of 27 episodes of capital inflows shows that, on average over the period of surge, one-third of the capital account surplus was absorbed by reserve accumulation. This ratio rises to 50 percent when the capital inflow is at the lower (0–3 percent of GDP) or the higher range (more than 9 percent of GDP; box 3-3).[8]

Under a currency board arrangement, an extreme form of fixed exchange rate, a country formally gives up its autonomy in monetary policy and strongly anchors its currency to a fixed rate (box 3-4). With a pegged exchange rate, however, the authorities tend to retain some autonomy in monetary policy in the pursuit of domestic objectives. During

Box 3-3 Capital inflows and reserve accumulation

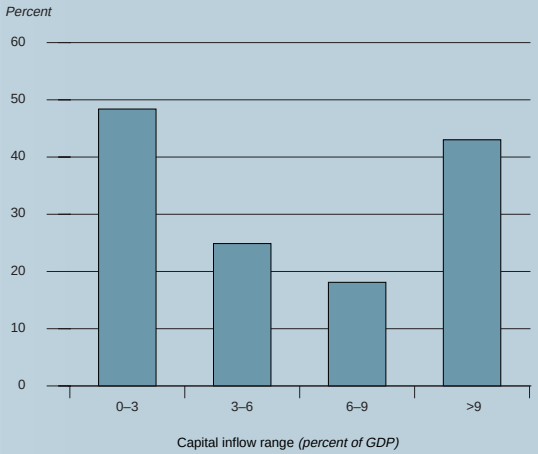
Monetary authorities frequently intervene to increase foreign reserves when capital inflows begin to surge, in order to preserve stability of the exchange rate (when the domestic currency is implicitly or explicitly anchored to an exchange rate peg) and to reduce market uncertainty. When capital began to flow into Morocco in 1990, its foreign reserves were low, and the authorities absorbed 75 percent of the incoming capital in the first three years. Similarly, in the Czech Republic in 1993, the authorities built up reserves of roughly 70 percent of capital surpluses for the following three years. In 27 inflow episodes in 21 developing countries, reserve accumulation absorbed an average of 32 percent of the change in the capital account surplus, with the extent of reserve accumulation depending on the size of flows.

At low levels of capital inflows, reserve accumulation absorbs close to half of the capital account surplus (box figure). This may be due to the buildup of reserves for trade purposes during the initial phase of capital inflows and determination of authorities to defend the exchange rate. At intermediate levels of inflow (3–9 percent of GDP) reserve accumulation falls to about 20 percent of the capital account surplus. When inflows are large (exceeding 9 percent of GDP), the authorities once again intervene aggressively, possibly because of increased perceived risks of reversals. The rate of reserve accumulation is also clearly related to the composition of capital inflows. The larger the non-FDI component of the increase in capital inflows, the higher the reserve accumulation.

Accumulation of reserves has a social cost (different from the cost of sterilization) measured by the difference between the cost of servicing the capital inflow equivalent to the accumulated reserves and the income earned on these reserves. This estimated cost for some East Asian countries (Malaysia and the Philippines) reached about 0.1 percent of GDP a year for many years. But this cost may be significantly higher: it was 0.16 percent of GDP a year for the Czech Republic and 0.12 percent for Peru.

A sizeable share of capital inflows goes to reserve accumulation

Reserve accumulation and capital inflows



Note: Average reserve accumulation as percentage of capital account surplus during inflow surge period.
Source: World Bank staff calculations based on data from IMF *International Financial Statistics.*

the early stages of a surge in capital inflows, the authorities buy foreign exchange (which immediately expands the supply of domestic high-powered money) and simultaneously sell domestic bonds or increase reserve requirements to sterilize the effects of the inflows on domestic money supply. Without such sterilization, capital inflows would expand the domestic monetary base, creating a temporary economic and lending boom and increasing financial system fragility. Economic agents would lose confidence in the authorities' ability to maintain the peg, and expectations of a devaluation would increase, possibly leading to an attack on the currency.

The fundamental problem with sterilization is the "inconsistent trio" or "open economy trilemma": any two, but not all three, features of macroeconomic policy—a fixed exchange rate, full capital mobility,

Box 3-4 Currency boards—when do they work?

Under a currency board, a country gives up its discretionary power over monetary policy, committing itself to issue no money that is not backed by reserves and to tolerate the interest rates that result. The hope is that the very strong commitment to maintaining the value of the currency reduces its susceptibility to attack, helping to sustain a fixed exchange rate and creating greater confidence. But does it work?

A currency board is different from a pegged exchange-rate system primarily because the authorities have chosen—through legislation (Argentina and Estonia) or other arrangements (an automatic link arrangement, as in Hong Kong [China])—to subordinate domestic policy and objectives to policies to maintain a fixed exchange rate. Under a pegged exchange rate, the monetary authority commits to the currency peg as a mechanism to maintain low inflation, but can abandon the peg in the event of a large shock to output (Obstfeld and Rogoff 1996). The authority weighs the costs of maintaining the peg (lower output, higher unemployment) against the costs of abandoning it (loss of credibility, higher inflation).

Speculative attacks on the peg can happen under either arrangement, and the required response to such attacks is to raise domestic interest rates and squeeze domestic credit high enough to stop the attacks. But if the costs to domestic output (primarily in nontradable sectors) are severe—as they tend to be if interest rates remain high for a long period—chances are the peg will be abandoned. By ruling out this possibility a currency board creates greater credibility for the arrangement. Currency boards appear to work best for only two groups of economies: small, open ones with large tradable sectors (Hong Kong [China] and Estonia); and economies that have been extremely unstable, where a currency board would restore badly needed credibility to domestic monetary policy (Argentina and Bulgaria). Other requirements for successful currency board arrangements include tight fiscal policies, with substantial fiscal surpluses and flexibility in fiscal policy; labor market flexibility; successful high interest rate defense against previous attacks (without large residual costs to the economy); and enough initial reserves to make the system credible.

Source: ADB and World Bank 1998; Obstfeld and Rogoff 1996.

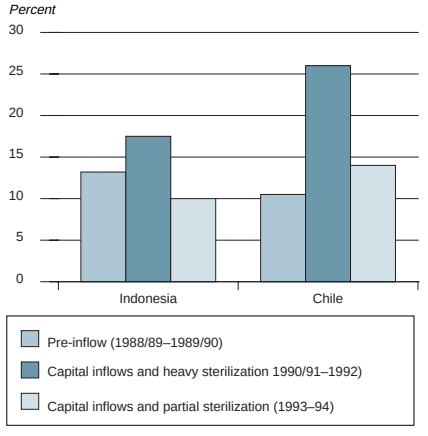
and monetary policy independence—are feasible (Mundell 1963; Wyplosz 1998; Obstfeld and Taylor 1998).[9] Sterilization presupposes that independent domestic monetary policies can be pursued effectively (to control domestic money supply) under conditions of international capital mobility. But when exchange rates are fixed or pegged and there is a large degree of capital mobility (that is, when a country's financial assets issued in its currency are reasonably substitutable (in private portfolios) for other internationally accepted assets), sterilization policies may be ineffective, because any contraction or expansion of the domestic assets of the central bank will give rise to an offsetting capital inflow or outflow (Montiel 1993).[10]

Sterilization may work in the short term, but it is increasingly costly over time. If inflows persist, this strategy becomes even harder to maintain because of rising fiscal costs, reflecting the fact that interest rates on domestic bonds exceed the interest that central banks earn on foreign deposits abroad.[11] Moreover, sterilization leads to higher domestic interest rates, which attract further inflows of capital (figure 3-3). Short-term capital flows—which tend to be the most sensitive to interest rate differentials—increase, raising the vulnerability to liquidity crises (Montiel and Reinhart 1997).

Pegged nominal exchange rates can create unintended incentives to domestic residents to overborrow, thereby fueling surges in capital inflows. Maintaining the peg (as

Sterilization means higher interest rates and more short-term capital inflows

Figure 3-3 Interest rates and sterilization policies, Indonesia and Chile



Source: Asian Development Bank and World Bank 1998.

long as it is credible), as in Thailand prior to the recent crisis and in Chile in the late 1970s, effectively guarantees against any exchange rate risk to domestic borrowers acquiring foreign liabilities.[12] It lowers the cost of borrowing by socializing the exchange rate risk and allowing private borrowing without currency hedging. Normally, a prudent borrower facing exchange rate risks (and without a natural hedge, such as exports) would be expected to partly or fully hedge those risks in forward exchange markets, thereby lowering incentives to borrow abroad.

Shifting to flexible exchange rates

Placing restrictions on capital mobility can return autonomy to monetary policy under a fixed exchange-rate regime. Switching to a flexible exchange rate also returns autonomy to monetary policy and provides incentives that, in a world of greater capital mobility, may reduce the likelihood of crises (Goldstein 1995; Corbo and Hernandez 1996). Flexible exchange rates—whether managed floats, exchange-rate bands (usually with a crawling peg; Williamson 1996), or fully floating exchange rates—offer several benefits. Through nominal and real appreciation, exchange rates take the brunt of the adjustment to large capital flows and allow greater independence for domestic monetary policy (that is, more effective application of sterilization policies) and lower inflation.[13] Unintended incentives to overborrow are avoided because market participants are unsure about the future direction of exchange rates. By minimizing the impact of capital inflows on the external component of high-powered money,[14] flexible exchange rates limit the effects of capital flows on the (potentially fragile) domestic banking system (Goldstein 1995). Malaysia and Chile, for example, managed surges in capital flows better than most other countries because of wider targets for exchange rates and capital controls (Corbo and Hernandez 1996; Goldstein 1995).

While shifting to a floating exchange rate may limit some of the boom-bust effects of capital flows, it may create other problems (Gavin and Hausmann 1996) in the process of reaching equilibrium. Exchange rates and interest rates may become more volatile. A large appreciation will worsen external competitiveness (especially if trade reforms require a depreciation), with potentially severe consequences

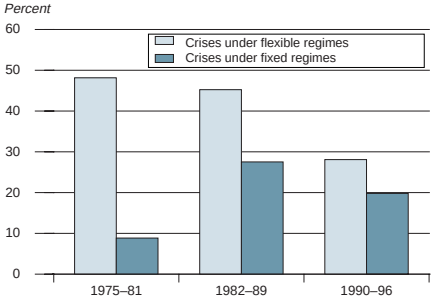
for the sustainability of capital flows in highly open and small economies.[15] Further, when exchange rates appreciate, they feed expectations of a lasting boom, reduce domestic interest rates, boost the demand for credit, lower the costs of—and raise demand for—foreign borrowing (in domestic currency), and raise the returns on domestic assets (stock markets, for instance) to foreign investors, thereby encouraging more capital inflows. All these elements can continue to support a boom-bust cycle.

Indeed, it is the underlying real appreciation (the price mechanism that can operate either through nominal exchange rate changes or through domestic nontradable prices) that puts the boom-bust cycle in place (Corbo and Hernandez 1996). Shifting to a flexible exchange rate does not preclude a crisis (Khatkhate 1998; IMF 1997a). Indeed, crises are as likely to occur under flexible exchange rates as under fixed exchange rates, especially if other conditions, such as adequate prudential and regulatory safeguards on the financial sector are not in place (figure 3-4).

Under flexible exchange rate regimes, the monetary authorities may attempt to sterilize a surge in capital inflows or they may opt not to. If they choose to sterilize flows, domestic inflation is moderated, domestic interest rates do not fall rapidly, and capital flows continue, but the fiscal costs may be high. If they choose not to sterilize, interest rates fall more sharply, reducing incentives for foreign borrowing, but inflation may rise. Often, however, domestic interest rates will remain persistently high in developing countries.[16] The incentive for increased capital inflows thus remains, contributing to vulnerability. There are also other shortcomings with flexible exchange rate regimes, notably the loss of a nominal anchor and lower inflation gains.

Crises are more frequent under flexible exchange rate regimes

Figure 3-4 Frequency of crises under flexible and fixed exchange rate regimes



Note: Ratio of number of crises during period to number of countries with flexible and fixed exchange rates, respectively.
Source: World Bank staff estimates based on data from International Monetary Fund 1998b, and IMF *Exchange Arrangements and Exchange Restrictions*, various issues.

Countercyclical fiscal policy

Given large and potentially destabilizing capital flows, a tightening of fiscal policy can help curb borrowing from abroad and reduce appreciation of the real exchange rate, but only if higher public savings are not offset by lower private savings.[17] In practice, few countries take significant countercyclical fiscal action to temper a capital inflow boom (Schadler et al. 1993). That places too great a burden on monetary policy to restrain aggregate demand, which leads to accumulation of short-term liabilities and increases vulnerability.

Three factors make it difficult to take the required fiscal adjustment measures:

first, the state is to some extent held hostage to private capital inflows; second, the fiscal process is inflexible relative to the volatility of capital flows; and third, demand is not met for many essential public goods and services—often those (such as human resources and physical infrastructure) that might be essential to increase the longer-term efficiency of the economy and the absorption capacity of resources from abroad. The result is that fiscal policy is often procyclical, which makes the situation even worse (as happened in East Asia recently).

Resorting to other instruments

If the surge in capital inflows is large, the standard tools of macroeconomic policy—shifting to flexible exchange rates, avoiding strong sterilization efforts, and implementing strong countercyclical fiscal adjustment—may prove ineffective or impractical. Other instruments may be needed. Indeed, since fragile financial sectors are a prime vulnerability of developing economies, policies should support the conduct of prudent macroeconomic policies by improving and tightening the prudential regulatory framework of the financial system (and implementing other measures related to external financial liberalization).

Financial liberalization, domestic banking reforms, and corporate governance

In the past two decades developing countries have been encouraged to liberalize their domestic financial sectors—lift controls on domestic interest rates and credit allocation, privatize financial institutions, and allow entry and competition from new private institutions. A growing body of evidence shows the importance of strong financial systems and financial deepening for long-run growth and development (King and Levine 1993; Levine 1997; Levine and Zervos 1998). Demirgüç-Kunt and Detragiache (1998) find that moving from financial repression to liberalization of domestic financial systems results in faster long-run growth of almost 1 percent per year.

Domestic financial liberalization

Financial liberalization also requires more—not less—and effective prudential regulation to ensure the safety and soundness of financial systems. It also requires better corporate governance structures and arm's-length relationships between banks and corporations. These arrangements take time to build, and without them, financial liberalization associated with surges in capital inflows often leads to financial crises. These crises are not limited to developing countries—Scandinavian countries that undertook financial liberalization at the end of the 1980s and early 1990s also experienced these problems.[18]

A study of the relationship between banking crises and financial liberalization by Demirgüç-Kunt and Detragiache (1998) for 53 countries between 1980 and 1995 found that crises are more likely in liberalized financial systems[19] (figure 3-5). Several mechanisms link deregulation and liberalization to crisis (Goldstein and Turner 1996):

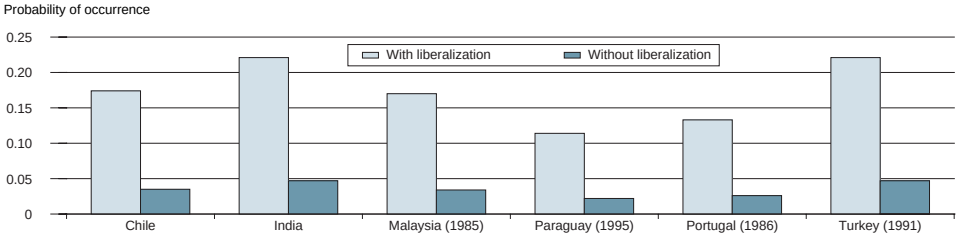
- Increased competition among financial institutions (from existing banks, the entry of new banks, development of nonbanks, and expansion of capital

markets) may lower bank margins, profitability, and franchise values or effective capital base (Asian Development Bank [ADB] and World Bank 1998). Empirical evidence of this effect on franchise values is found by Demirgüç-Kunt and Detragiache (1998; figure 3-6). The decline in bank margins and profits may be an objective of financial liberalization, but if excessive competition leads to sharp declines in franchise values, it may reduce the incentives for prudent banking and lead to excessive risk taking by bank managers. Sheng (1996) finds these factors to be responsible for bank failures in Argentina, Chile, Kenya, Spain, and Uruguay.

- Higher real interest rates often emerge following liberalization (Galbis 1993). If firms are operating with high debt-equity ratios, a hike in interest rates can lead to distress borrowing and an inelastic demand for credit, which perpetuate high interest rates.[20] A bidding up of deposit rates may also weaken banks.
- Rapid credit expansion due to reduced reserve requirements and a larger money multiplier released pent-up demand for credit or easier access to foreign resources, and expanded bank lending to boom-bust prone activities (Caprio, Atiyas, and Hanson 1994). Bank credit managers trained in a controlled environment may not have the skills needed for a riskier environment.
- Freeing deposit rates with weak banks, in developing countries and even more in transition economies, leads to higher deposit and lending rates to reflect the higher risk. This tends to attract riskier investors and increases the overall portfolio risk of banks. An increase in systemic risk further pushes up interest rates (Massad 1994).
- Many episodes of banking crises are associated with the entry of bank owners bent on engaging in risky and questionable activities (as in Chile in the 1970s and many transition economies in recent years).

Banking crises occur more in liberalized financial systems

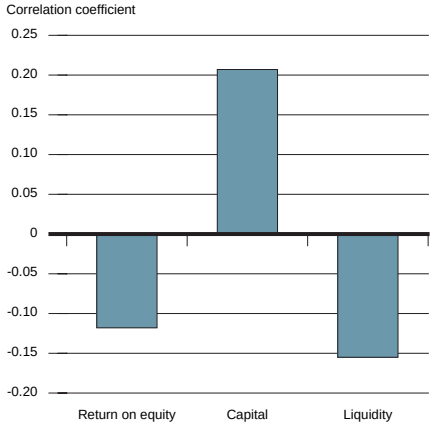
Figure 3-5 Interest rate liberalization and probability of crisis



Note: Countries are classified as crisis cases if the predicted probability is greater than 0.05, which is actual frequency of crisis.
Source: Demirgüç-Kunt and Detragiache 1998.

More competition may lower bank margins and franchise values

Figure 3-6 Financial liberalization and bank franchise value



Note: Pearson correlation coefficient between dummy for financial liberalization and variable (based on Bank-level variables which are averaged by country for the period 1988–95).
Source: Demirgüç-Kunt and Detragiache 1998.

In view of the benefits and risks from domestic financial liberalization, the transition needs to be carefully managed.[21]

Supervisory capacity has to be developed quickly and should precede liberalization. New bank owners and managers need to meet the criteria for prudent professional bankers. Similarly, bank managers, loan officers, and other professional staff need to be properly trained. Entry of foreign banks may help achieve this objective. But lifting restrictions on domestic and foreign entry to increase competition and innovation needs to be monitored to avoid large declines in the franchise values of banks and excessive risk taking.

Authorities should be vigilant in curbing lending booms following liberalization, for example through higher reserve and capital requirements.[22] Developing countries might temporarily impose limits on credit growth to avoid the risks associated with credit booms, especially during rapid transformation of the banking system, when the supervisory system is insufficiently developed.[23] Alternately, countries may wait to lift constraints or decide to impose more stringent and explicit limits and restrictions on risky lending activities (and concentration of risk), such as real estate, securities, and foreign exchange exposure.

Finally, careful sequencing of domestic and external liberalization is called for. Restrictions on the capital account, especially on the more volatile capital flows, should be lifted only after the domestic financial sector has been strengthened.

Supporting the financial system and improving corporate governance

How well the financial system functions also depends on the legal framework to enforce contracts and protect property rights and the state of corporate governance. While these measures are not discussed in detail here, improvements in this area are nevertheless of vital importance. When transparency is lacking and corporate governance is weak, both banking systems and corporate sectors are more fragile.[24] Cozy relations among banks, government, and corporations weaken market discipline, encourage connected lending, increase the scope for moral hazard, and foster inefficient outcomes. Other signs of weaknesses are loose financial accounting and disclosure and high leveraging, which facilitates excessive risk taking. Concentration of

power in family dominated and politically connected companies, with weak protection of minority shareholders, is also common in developing countries.

These factors have contributed to weak performance and banking sector distress in East Asia, their effects intensified by increased access to foreign resources and domestic financial liberalization. Debt-to-equity ratios rose significantly in many countries, and economic efficiency and profitability declined.

Banking reform, strongly oriented toward risk management, is a key ingredient of any long-term strategy to minimize the risks and costs of financial crises.

The policy prescriptions to support development of the financial system and improve corporate governance are straightforward:[25]

- Developing accounting, auditing, and disclosure standards to increase the flow of information, and enhance efficiency by improving the quality of investment, reducing misallocations, correcting mistakes rapidly, and strengthening business risk assessment and the accountability of managers to shareholders.
- Setting up the legal infrastructure—bankruptcy laws, debt workout procedures, enforcement of collateral and guarantees—to write and enforce contracts confidently and to protect and balance the interests of creditors, shareholders, and managers, thereby creating a credit culture in which trust and expectations of repayment and transaction costs are reduced.
- Restricting connected lending practices.

Such policies would also support the development of capital markets and alternatives (equity and long-term debt) to short-term debt finance and reduce the extent of leverage and vulnerability of firms to shocks.[26]

Strengthening domestic banks through better regulation and market incentives

Banking reform, strongly oriented toward risk management, is a key ingredient of any long-term strategy to minimize the risks and costs of financial crises. An efficient banking sector with effective supervision and regulation helps reduce the distortions that increase vulnerability to potential crises.[27] The central aim should be to reduce information asymmetries and develop a risk management culture in the banking sector. Internal systems of risk management have to be developed and strengthened, and best practice techniques used. Bank supervisors tend to prefer ensuring the adequacy of a bank's internal controls to directly assessing financial conditions.[28] This is important in developing countries, since the risks facing the banking sector are especially great because of problems in the state of development and competitiveness of domestic financial markets, corporate law and governance, contract enforcement and bankruptcy, sophistication of bankers and their regulators, extent of political connections between institutions and governments, and susceptibility of the economy to domestic and international economic shocks.[29]

Developing country regulation should take account of the strengths and weaknesses of financial systems and of regulators. Regulations, controls, and restrictions that produce inefficiencies and distortions should be abandoned. However, the vulnerabilities and frequent failures of financial systems indicate that some restraints are needed (World Bank 1998b, chapter 6). For instance, mild restraints on deposit interest aimed at creating franchise value for banks may induce outcomes that are more efficient than financial repression (where interest rates are kept at low negative real levels, inducing inefficient deepening and misallocation of resources) or immediate financial liberalization (Hellman, Murdock, and Stiglitz 1996, 1997; World Bank 1998b). Financial restraint features played a significant role in improving stability in East Asian countries in the past; while some of the other features such as market incentives have been implemented with some success in Chile, New Zealand, and the United States (Nicholl 1997; Caprio and Klingebiel 1996b; Goldstein and Turner 1996).

Banking regulation and supervision. Weak regulation and supervision are the most widely recognized sources of vulnerability in developing countries' banking systems.[30] Most industrial countries subscribe to "Core Principles for Effective Supervision" of the Basle Committee in the design of banking regulation and supervision to reduce vulnerability of the financial system.[31] In addition to macroeconomic stability, the building blocks include:

- Higher standards of competence and integrity of bank management, as well as effective management controls.
- More transparency and adequate information on the soundness of banks.
- Public financial safety nets that boost confidence in the financial system but also limit induced distortions, such as explicit or implicit government guarantees, that encourage excessive risk taking.
- Effective regulatory and supervisory oversight for controlling risk and limiting the adverse impact of official safety nets.
- Transparent ownership structure that enhances competitive behavior, and limits on connected lending.

The Basle committee's core principles can also be extended to include accounting and information disclosure, loan classification, and bankruptcy regimes. International accounting and auditing standards are also available.[32] International financial institutions can help countries adopt and implement these regulations.[33]

Recommending that developing countries build a sound and healthy financial system according to these principles is not sufficient, however. Building such systems takes a long time, and it is hard to determine a minimal requirement for the quality of the banking sector. Also, adjustments are needed to take account of specific features in developing countries.

Incentives and market discipline. Relying heavily on regulation and supervision to control excessive risk taking is of questionable efficacy, particularly for developing countries (Caprio and Klingebiel 1996b; Caprio 1997; Goldstein and Turner 1996). It takes too long to develop supervisory capacity and skills. Moreover, supervisors are often unable to detect risky behavior and take action against troubled

banks, because the kinds of behavior tend to change over time and supervisors are not prepared for them. They may also be prevented by policymakers from taking action.

These factors argue for relying more on market-imposed discipline and improving incentives for prudent banking. In addition to raising capital adequacy ratios, this strategy could include:[34] increasing the financial and personal liability of managers and directors (going to unlimited liability), or introducing mutual liability; requiring a tier of uninsured subordinated debt for individual banks (to increase the incentives for private monitoring of banks); and requiring banks to regularly publish key information, such as credit ratings. Clear exit policies and resolution mechanisms should also be spelled out, covering automatic or structured early intervention and graduated responses by the authorities as bank capital reaches some predetermined thresholds (Caprio 1997).

Volatility and the need for more stringent regulations. Developing countries share structural characteristics that subject them to greater volatility. These include an unstable macroeconomic environment, concentrated economic activity and exports, and susceptibility to greater shocks—terms of trade, weather, interest rates, and policy volatility (figure 3-7).[35]

Vulnerability to external shocks and, especially, to changes in international interest rates, has been shown to be the most important factor in banking crises.[36] A reversal of macroeconomic conditions in capital-exporting countries leads to higher interest rates, curtailed capital inflows, and slower growth of bank lending.

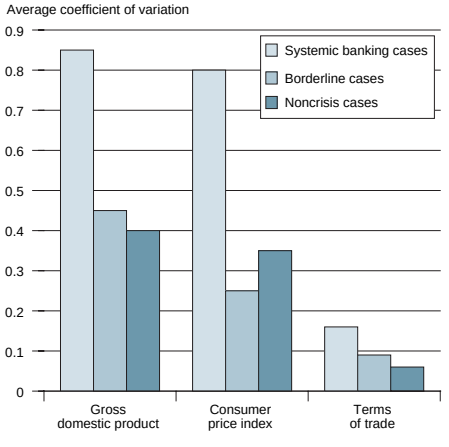
These structural features have implications for the institutional framework of the banking sector in developing countries, such as a need for higher capital-adequacy ratios than the Basle international standard (see Goldstein and Turner 1996; and Honohan 1997) and for more stringent limitations on the concentration of risks (such as loans for real estate or securities).[37]

The role of government, guarantees, and moral hazard. Government often plays a pervasive role in the banking sector in developing countries. This generates serious conflicts, especially moral hazard problems, that are a major underlying factor in risky lending. Necessary reforms include:

- Above all, severely limiting the government's role in directly running and managing banks. This can mean privatization of banks, which has to be handled carefully, especially with respect to

Volatility is linked to banking crises

Figure 3-7 Bank crises and volatility, 1980–94



Source: Caprio and Klingebiel 1996b.

pricing (and its effect on franchise values), treatment of risks, capital adequacy, and management.

- Reducing the government's direct involvement in allocating credit and in providing guarantees to commercial enterprises so as to enhance market-oriented banking behavior. Because of moral hazard, implicit or explicit government guarantees can lead to excessive risk taking. Banks tend to raise money at safe rates and lend at premium rates to finance speculative investments beyond prudent levels (McKinnon and Pill 1997; Krugman 1998).
- Setting up a formal deposit insurance scheme to deal with the negative externalities that individual failures may have on the rest of the banking system. Insured depositors, however, have little incentive to monitor banks, and regulators may engage in regulatory forbearance and delay action against troubled banks. Indeed, Demirgüc-Kunt and Detragiache (1997) find that deposit insurance has a significant positive effect on the likelihood of a banking crisis. Thus, supervision, minimum capital requirements, and mandatory issues of subordinated debt would help reduce moral hazard and induce banks to reduce their risks. In addition, there should be limits on the amounts insured, and co-insurance should be required (that is, covering less than 100 percent of deposits), as well as charging risk-weighted deposit insurance premiums. Policymakers should also consider mutual liability for banks, clear procedures for closing insolvent banks, and possibly private provision and management of the insurance program.

Benefits and associated risks of capital account liberalization

Capital account (or external) liberalization and financial integration with world capital markets can potentially bring large benefits, and both have been advocated for developing countries for that reason.[38] Letting domestic agents trade financial assets with foreign economic agents may increase access to capital and lower its cost. Productivity improvements, risk diversification, and consumption-smoothing are other potential benefits.

Many developing countries have liberalized capital accounts in the past decade (box 3-5), but recent experience suggests that such liberalization and increased financial integration can sharply raise the risks of financial crisis (box 3-6).

Many developing countries have liberalized capital accounts in the past decade, but recent experience suggests this can sharply raise the risks of financial crisis.

In fact, the duality of benefits and risks of international capital mobility is inescapable in a world of asymmetric information (Obstfeld 1998), where lenders do not know as much as borrowers about the uses of their money and are therefore prone to panic. Thus, the benefits of capital account liberalization and increased capital flows have to be weighed against the likelihood of such crises and their costs. Recent discussions at international forums have heightened the recognition of the issues, especially in relation to volatile short-term flows.

Box 3-5 How far has capital account liberalization progressed?

The OECD's Code of Liberalization of Capital Movements of 1961 (extended to include all capital account transactions by 1989) and the European Union's 1988 Second Directive on Liberalization of Capital Movements were milestones in the liberalization of industrial countries' capital accounts. It is only since the late 1980s and early 1990s that most industrial countries have accelerated the pace of capital-account liberalization. The number of industrial countries with neither separate exchange rates nor restrictions on payments for capital transactions increased from 3 in 1975 to 9 in 1985 and 21 in 1995. The number increased in developing countries as well, from 20 in 1975 to 31 in 1995.

Most industrial and developing countries still had some type of capital controls at the end of 1997, mainly on direct investment (143 countries), real estate transactions (128), and capital market securities (127). In addition, most countries implement provisions specific to commercial banks and other credit institutions (152).

Only a few industrial countries (Luxembourg and the Netherlands) and developing countries (Armenia, Djibouti, El Salvador, Panama, and Peru) report no capital controls, and a few report just one type of control (Canada, Denmark, Mauritius, Uganda, and Paraguay).

Most countries still have some form of capital controls

Controls on capital-account transactions, year-end 1997

	Total	Developing countries	Industrial countries
Number of IMF member countries	184	157	27
Controls			
Capital-market securities	127	112	15
Money-market instruments	111	102	9
Collective investment securities	102	97	5
Derivatives and other instruments	82	77	5
Commercial credits	110	107	3
Financial credits	114	112	2
Guarantees, sureties, and financial backup facilities	88	86	2
Direct investment	143	126	17
Liquidation of direct investment	54	54	0
Real estate transactions	128	115	13
Personal capital movements	64	61	3
Provisions specific to:			
Commercial banks and other credit institutions	152	137	15
Institutional investors	68	54	14

Sources: Quirk and others 1995; Mathieson and Rojas-Suárez 1993; International Monetary Fund 1996, 1997b, and 1998c.

Evidence suggests that for FDI and similar long-term foreign capital flows, the benefits are significant and the risks low. The benefits of capital account openness to short-term debt and other volatile non-FDI flows are less certain; the greater volatility of such flows is strongly associated with financial crises. While the clear demarcation between these two categories of inflows is not watertight (see further below), in practice, the effects are clearly differentiated. There are larger benefits and fewer risks for FDI-type flows, which tend to be more resilient in times of crises and to carry important benefits beyond finance, than for short-term flows. Thus, developing

countries should tailor their openness to their capital inflow needs and their ability to bear the risks.

In addition to foreign direct investment and trade credits, capital flows can range from pure debt such as short- and medium-term bank loans, to long-term bonds, very long-term debt (century and perpetual bonds), quasi-equity (such as convertible bonds), and portfolio equity flows. The extent of use of these financial instruments by developing countries reflects investors' preferences in terms of risk sharing between the parties in the source and destination countries, currency exposure and maturity risk to the developing country firm, and extent of diversity of sources of finance using the instrument (table 3-1).

Derivatives can also reduce the cost and risk developing country firms face in accessing international capital markets. For example, through interest rate swaps, borrowers can assume the kind of liability they prefer (fixed or floating rate) at a lower interest rate than through regular borrowing. Currency-swaps enable borrowers to match the currency composition of assets and liabilities.

The analysis below highlights the evidence for the benefits and risks of capital flows, differentiated mainly by FDI and non-FDI flows. While it is simplified, it illustrates the major issues and their policy implications, which in practice have to take account of the variety of financial instruments, the mechanisms of their intermediation, and the use of the associated resources.

Benefits of capital account liberalization and capital flows

The theoretical benefits from capital account liberalization include increased access to capital and faster productivity growth, risk diversification, and consumption smoothing.[39]

Capital accumulation and growth. Benefits include increased investment and more efficient allocation of resources, which result from taking advantage of differences among countries in the productivity of capital and opportunities for risk diversification. Incomplete risk markets discourage investors from undertaking risky projects, many of which have high potential returns. By allowing more risk diversification, more of these projects will be undertaken, leading to higher expected returns. The

In capital markets, the risk depends on the type of borrowing

Table 3-1 Financial instruments and their risks

Instrument	Risk sharing	Currency exposure	Maturity risk	Diversity of sources
Borrowing facilities	Low	High	High	Low
Syndicated bank loans	Low	High	Moderate	Low
Straight bonds	Low	High	Moderate/low	High
Leasing	Moderate	High	Moderate	Low
Limited recourse financing	Moderate	Moderate/low	Moderate	Low
Quasi-equity instruments	Moderate	Moderate	Moderate	High
Portfolio equity investment	High	Low	Low	High

Source: World Bank.

Box 3-6 Are capital flows the main culprit?

Fragile domestic financial systems are often the root cause of a financial crisis, and while capital inflows are also blamed, they are but one element. Risks carried by capital inflows and excessive borrowing are important. In the Republic of Korea, excessive domestic financial risk taking—including low equity and heavy bank borrowing—was a long-standing practice. What may have tipped the balance in the 1997 crisis, however, was capital flows: when in the context of its entry into the OECD, Korea liberalized the ability of its banks to borrow (short-term) abroad (instead of tightening safeguards), there was a massive surge in such inflows; their reversal subsequently precipitated the crisis. The problems may have been aggravated by Korea's retaining tight controls on FDI inflows, preventing precisely the type of flows that it should have encouraged—more stable, longer-term flows that would have brought equity, technology, and better risk management.

expected results are higher capital accumulation and productivity growth. Benefits vary by type of flow.

For FDI and similar long-term, relatively stable, flows the benefits are well documented. FDI flows accounted for 5–6 percent of aggregate investment in developing countries in the 1990s, above the 1–2 percent of the previous 15 years (World Bank 1997a). FDI also tends to "crowd in" more domestic investment: every $1 of FDI in developing countries is associated with $0.50–$1.30 of additional domestic investment. While it is difficult to establish causality, increased FDI flows are generally associated with faster aggregate long-run growth (and total factor productivity growth), with each percentage point increase of FDI in gross domestic product (GDP) associated with a 0.3–0.4 percentage point faster growth in per capita GDP (Wacziarg 1998).

For non-FDI—particularly short-term debt and more volatile flows—the benefits are less certain.[40] Among 18 countries that received significant private capital flows in the late 1980s and early 1990s, the surge in such capital flows was associated with increased investment, as expected; each $1 of non-FDI inflows appears to be associated with just $0.60 of additional investment, however. One reason is that a significant share of such inflows goes into reserve accumulation and results in a net social loss, rather than a gain (see box 3-3).[41] Prudent behavior also implies that short-term financial resources should not be used to finance long-term investment projects. Taking this into account, and using the sample average capital-output ratio of 2.5 and elasticity of output with respect to capital stock of 0.4, a 1 percentage point increase of non-FDI capital inflows in GDP would be expected to generate additional growth of only about 0.10 percent of GDP in gross terms and less in net (GNP) terms.[42] Some benefits on productivity could also be expected, especially in low-savings countries where non-FDI inflows might make possible highly productive investments. Again, while there are direction of causality issues and results should be interpreted with caution, simple correlation on a sample of countries showed little evidence of a significant positive association between non-FDI inflows and productivity growth; in the one case that showed statistically significant association—the subsample of low-savings countries—the association was strongly negative (figure 3-8).

Benefits depend on the policy environment. The opposing signs and different values of correlation shown in figure 3-8 imply that the impact of non-FDI capital flows and capital account openness may depend more on the economic and policy environment in individual countries than on the extent of capital account openness and flows themselves. This is the case for FDI inflows (World Bank 1997b) and official aid flows (Dollar 1998), for both the size and direction of impacts on productivity depend on the policy environment.

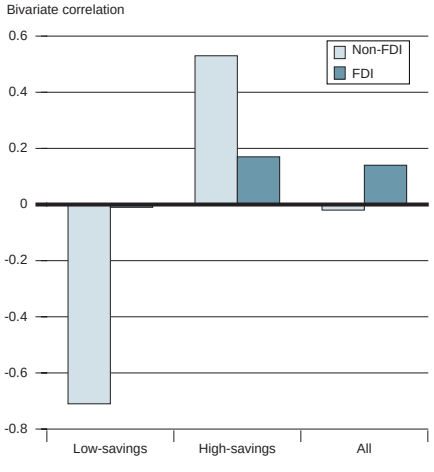
Some indirect evidence about the benefits of non-FDI inflows can also be inferred by looking at the counterfactual case: are there significant losses in terms of slower growth when countries have capital controls, especially on short-term and portfolio flows? Based on the experience of 20 OECD countries in 1950–89, Alesina, Grilli, and Milesi-Ferretti (1994) find no negative impact of capital controls on GDP growth. Using a simulation model, Razin and Yuen (1994) show that the long-run effects of liberalizing capital flows are very modest. Rodrik (1998) uses a GDP per- capita growth equation and a simple index of capital account openness with a sample of almost 100 industrial and developing countries for 1975–89 and finds that capital account convertibility has no significant effect on growth once other effects are taken into account (figure 3-9). Carrasquilla (1998) finds similar results for 1985–95 for 19 Latin American countries using more direct measures of capital controls (figure 3-10).

Risk sharing and consumption smoothing. In developing countries characterized by a concentration of exports and economic activity, allowing domestic banks to diversify their portfolio helps reduce their vulnerability to external (terms of trade) and internal output shocks. The scope for gains from open capital accounts may also arise from risk sharing and asset diversification. The evidence for such gains is based on simulation models whose results are mixed. Obstfeld (1995) estimates that the potential gains may be very significant, while Tesar (1995) finds them small. Levine and Zervos (1998) find no evidence of significant effects on growth of international risk sharing through increased integration of stock markets.

Another potential source of welfare improvement from capital flows is increased opportunities for consumption

There is little connection between non-FDI inflows and productivity growth

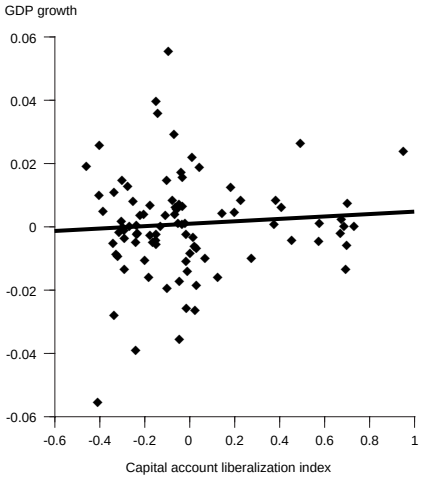
Figure 3-8 Correlation between capital inflows and total factor productivity growth in low- and high-savings countries



Note: Sample of 18 countries receiving substantial capital inflows in the late 1980s and early 1990s.
Source: World Bank staff estimates.

There is no evidence…

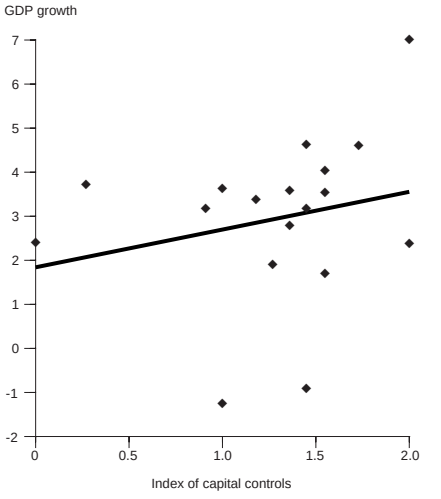
Figure 3-9 Economic growth and capital account liberalization in 100 countries, 1975–89



Note: The figure is a partial scatter plot (controlling for per capita income, secondary education, quality of governmental institutions, and regional dummies for East Asia, Latin America and the Caribbean, and Sub-Saharan Africa).
Source: Rodrik 1998.

…that capital controls slow growth

Figure 3-10 GDP growth and capital controls in Latin America, 1985–95



Source: Carrasquilla 1998.

smoothing in the presence of high income volatility.[43] A country that is isolated financially would have to accommodate any external shock through changes in consumption and investment. In contrast, a country that is well integrated with world financial markets can lend and borrow and thus maintain consumption and investment close to desirable levels—even when national income is fluctuating. The gains may be larger for developing countries with more income volatility.[44] The general observation, however, that capital flows tend to be procyclical in developing countries indicates that consumption smoothing is not significant.[45] More detailed evidence also suggests that while capital inflows may have reduced the volatility of consumption relative to that of income, on average they are associated with increased volatility. Results for a sample of 17 countries that gained significantly greater access to private capital flows show that volatility during the inflow surge remained higher for consumption than for income, with the difference increasing in 10 countries. Thus, the gains from consumption smoothing appear uncertain and limited.

Risks associated with capital account openness

The risks associated with capital account liberalization and capital flows for a developing country depend on the ability of policymaking institutions as well as the financial and corporate sectors to adjust to shocks

and absorb risk, as well as on its own volatility. Various financial assets traded internationally differ in their volatility and implications for increased vulnerability to crisis,[46] but three arguments link financial integration and increased risks of financial crises.

The first is that openness to capital flows may increase the risk of currency crises if surges and reversals of capital flows (and crises) occur independently of a country's policies and actions. [47] When international interest rates rise, international investors are likely to cut back their financing to developing countries. At the same time, the capacity of developing country banks, firms, and governments to service debt is reduced. There is strong empirical evidence that international interest rates are a major determinant of non-FDI capital flows,[48] and are a big factor in the probability of crises (Frankel and Rose 1996; Kaminsky and Reinhart 1997). Foreign interest rates and a volatile external environment have also been found to be significant determinants of banking crises and, therefore, indirectly of currency crises (see discussion of domestic financial sector).

A second argument against financial integration is that international capital market failures can aggravate domestic financial weaknesses and have contagion effects. A third is that integration, while not the root cause of financial crises in emerging markets, may contribute to crises whose origin is domestic—especially given weak financial systems and inappropriate macroeconomic policies.[49]

While there is little direct evidence of the role of capital account liberalization or capital inflows in financial crises, there is some indirect evidence. Since the 1980s there has been a negative correlation between capital flows and the lifting of capital controls (IMF 1997a). At the same time, currency crises have increased, which may indicate causality between capital account liberalization and currency crises (Wyplosz 1998). Most empirical analyses, however, have failed to find statistical evidence linking the volume of capital inflows to crises (Sachs and others 1996). An exception is Radelet and Sachs (1998), who find some evidence of a relationship between crises and capital account deficits (but not current account deficits). Frankel and Rose (1996) also find that higher FDI flows (relative to debt) are associated with a lower probability of crises.

There is additional indirect evidence linking capital flows with crises for a sample of 27 capital inflow surges in 21 countries (table 3-2). In 1996 these countries accounted for 69 percent of private flows to developing countries (or 83 percent, when China is excluded). The mean ratio of total private-to-private capital flows to GDP over the inflow periods ranges from 2.2 percent to 11.8 percent. The composition of these inflows varies considerably, with the mean ratio of FDI to non-FDI private-to-private flows ranging from a negative 0.1 to 3.4. In about two-thirds of the cases, there was a banking crisis, currency crisis, or twin crises in the wake of the surge.

The risks associated with capital account liberalization depend on a developing country's ability to adjust to shocks and absorb risk, and on the volatility of flows.

Volatility of non-FDI and portfolio flows. The risks associated with capital account liberalization hinge on the volatility of capital flows and the risks of reversal during bad times, when access to additional financing is especially important. For FDI flows, the risks are small because these flows respond more to longer-term considerations than to short-term international interest rates, and because they interact less with domestic financial markets. The risks of large reversals are even lower because

Indirect evidence links capital inflow surges with crises

Table 3-2 Surges in private-to-private net capital inflows and financial crises

Country	Inflow	Mean ratio of annual capital flows to GDP	Mean ratio of FDI to non-FDI capital inflows	Crisis following inflow episode
Argentina	1991–94	2.5	1.0	1994–95 banking crisis following Mexican devaluation
Brazil	1992–96	3.1	0.2	1995 banking crisis
Chile	1978–81	11.1	0.1	1982–83 currency and banking crisis
Chile	1989–96	5.1	0.7	No crisis
Colombia	1992–96	4.4	1.2	No crisis
Costa Rica	1986–95	5.5	1.0	No crisis
Czech Republic	1993–96	8.3	0.6	1997 currency crisis
Estonia	1993–96	5.4	3.4	1997 near-crisis
Hungary	1993–95	11.8	1.1	1995 crisis
India	1994–96	2.5	0.3	No crisis
Indonesia	1994–96	3.7	1.1	1997 crisis
Korea, Rep. of	1991–96	2.5	–0.1	1997 crisis
Malaysia	1982–86	3.1	(a)	1985–88 banking crisis
Malaysia	1991–96	9.8	2.5	1997 crisis
Mexico	1979–81	2.5	0.7	1982 crisis
Mexico	1989–94	4.5	0.6	1994/95 financial crisis
Morocco	1990–96	3.2	0.6	No crisis
Pakistan	1992–96	3.5	0.4	No crisis
Peru	1988–96	6.9	0.4	No crisis
Philippines	1989–96	4.5	0.5	1997 crisis
Philippines	1978–82	3.0	0.0	1981 banking crisis 1983–84 currency crisis
Sri Lanka	1991–95	5.3	0.3	No crisis
Thailand	1978–84	3.0	0.3	1983 banking crisis 1984 currency crisis
Thailand	1988–96	9.4	0.2	1997 crisis
Tunisia	1992–96	3.6	2.5	No crisis
Venezuela	1992–93	2.2	0.0	1993–94 banking crisis 1995 currency crisis
Venezuela	1976–79	3.9	–0.1	1980 banking crisis

Note: The inflow episodes were selected based on the length (minimum of two years) and the volume of total private-to-private capital flows as a percentage of GDP (minimum ratio of 2 percent).
Total private-to-private capital flows = total private capital flows – public and publicly guaranteed private creditors.
Total private capital flows = total flows – official flows – net use of IMF credit.
Total flows = foreign direct investment + portfolio investment + other investment + net errors and omissions.
Total non-FDI private-to-private capital flows = total private-to-private capital flows – foreign direct investment.
a. The mean ratio is very high and negative, reflecting a very low negative denominator (non-FDI private-to-private capital flows).
Source: IMF *Balance of Payments* 1996 and 1997; World Bank 1998a; Kaminsky and Reinhart 1997.

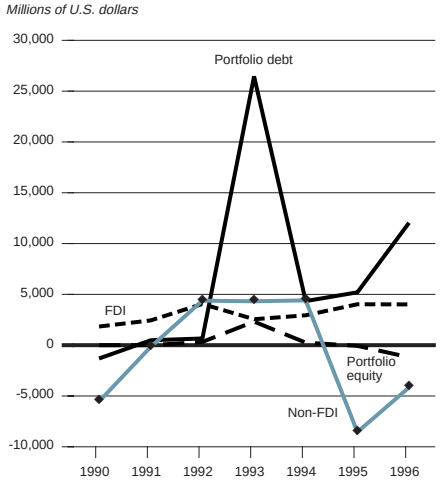
FDI inflows are usually invested in longer-term assets (plant and machinery, and services, for instance) that cannot be liquidated quickly. For non-FDI flows, there are clearly more risks of volatility and reversals, but they may differ according to various categories.[50]

Volatility of non-FDI flows and stability of FDI flows for three countries—Argentina, Mexico, and Hungary—suggest different characteristics and behavior, particularly in times of downturns (figures 3-11 to 3-13). FDI is far less volatile and less subject to reversals.[51] It even continues to increase in downturns. Non-FDI private-to-private flows, in contrast, are much more volatile. Portfolio equity most closely resembles FDI, but is more volatile. Debt portfolio investment (including private-to-public) is volatile and intensifies the severity of financial crises. Non-FDI and debt portfolio flows increase in the years just before a crisis, then reverse sharply after the crisis occurs. These features magnify boom-bust cycles and, hence, the severity of financial crises in small, financially open developing countries.

Volatility of short-term interbank flows. Interbank borrowing also tends to be highly volatile. The reversal in flows from Bank for International Settlements (BIS) reporting banks in Korea and Thailand was dramatic in the second half of 1997 (figure 3-14). The liquidity crisis in both countries largely reflects this reversal, particularly in short-term interbank credit lines. In contrast, FDI flows held up, at least in the first half of 1998 (when they

Portfolio equity flows…

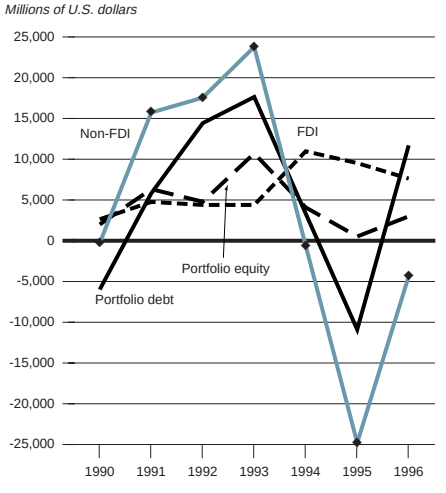
Figure 3-11 Net capital flows to Argentina, 1990-96



Source: International Monetary Fund, World Bank.

…closely resemble FDI…

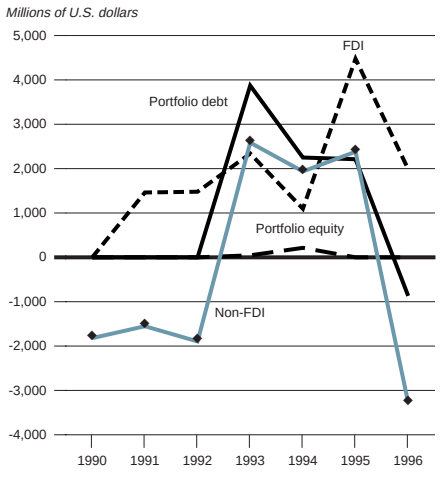
Figure 3-12 Net capital flows to Mexico, 1990–96



Source: International Monetary Fund, World Bank.

…but debt investment is volatile

Figure 3-13 Net capital flows to Hungary, 1990-96



Source: International Monetary Fund, World Bank.

were higher than in 1997), even though the prospects for the following period will also depend on the global situation.

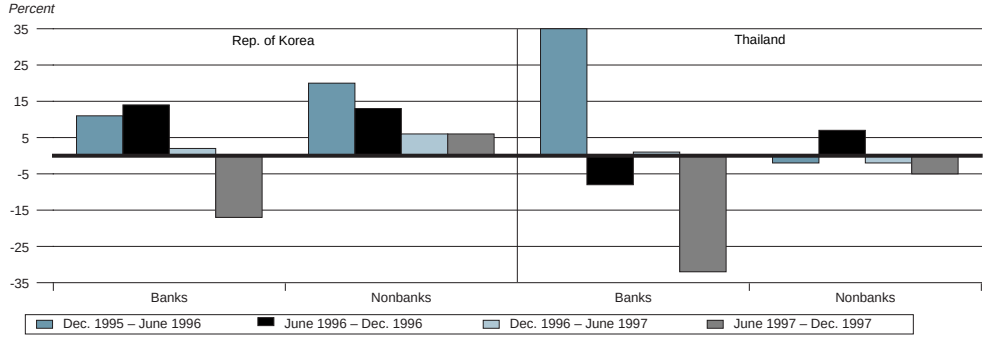
What are the implications?

The larger risks and uncertain benefits of portfolio and short-term flows for countries with weak institutional capability and financial systems suggest proceeding carefully with capital account convertibility. Because the risks stem largely from the distortions and externalities associated with international borrowing and from the wedge between social and private rates of return, and social and private risk, policy should attack distortions at or close to their source. Since the capacity to implement such policies and their effectiveness may not be perfect, this approach must be pragmatic and take account of developing countries' specific conditions.

The first step is to eliminate tax incentives and other distortions that encourage short-term capital inflows. Another is to use prudential regulations on currency and maturity positions by banks. The Basle Core Principles for Effective Banking Supervision recommend only that banking supervisors

The reversal in short-term credit in the second half of 1997 was dramatic

Figure 3-14 Rate of change of total debt outstanding by BIS-reporting banks to banks and nonbanks



Source: Bank for International Settlements.

ensure that bank managers set appropriate limits and implement adequate internal controls on foreign currency exposure. But developing countries should also introduce specific limits on currency and maturity mismatches (for example, requiring minimum liquid foreign currency assets to cover short-term foreign currency liabilities), and prudential regulations limiting the aggregate open currency positions of banks, including derivatives. But because even well-managed firms and financial institutions have run into severe losses through the use of such instruments, there is also a need for better supervision of these regulations and of risk management procedures. Countries may also introduce more stringent liquidity requirements in terms of foreign assets relative to foreign liabilities than for domestic currency liabilities.

Prudential regulations of banks and financial institutions does not resolve the risk of excessive exposure by the corporate sector. Banks may satisfy foreign currency exposure requirements by borrowing in foreign currency and lending in foreign currency to domestic firms. If domestic corporations do not have foreign exchange cover, the currency risk for banks is transformed into a credit risk. Thus, additional measures are needed for domestic corporations. These may include requiring disclosure of short-term and unhedged borrowing, reducing the tax deductibility of such borrowing, and the rating of firms raising funds abroad and listing on the domestic stock exchange.[52]

When the domestic regulatory and supervisory system for banks is weak, controls over corporations are ineffective, and access lender of last resort is uncertain, restrictions on capital flows may be useful. This often implies maintaining or reinforcing capital account restrictions. For countries that are reintroducing such restrictions, this may mean loss of credibility, so such actions have to be managed in a way that does not lead to even greater loss of confidence. The imposition of capital account restrictions, as part of a preventive package to minimize the risks of financial crisis, is concerned mainly with capital inflows. Their reintroduction for capital outflows during a crisis poses many difficult problems, not considered here.

The larger risks and uncertain benefits of portfolio and short-term flows for countries with weak institutional capability and financial systems suggest proceeding carefully with capital account convertibility.

Restrictions on capital flows should minimize distortions and be as market-oriented as possible. One way is explicit taxes or reserve requirements on foreign exchange liabilities according to holding period. In Chile and Colombia implicit taxes have substantially shifted the composition of such flows and discouraged short-term flows without having much impact on the volume of flows (box 3-7; World Bank 1997b; Montiel and Reinhart 1997). Restrictions on capital flows have to reflect specific factors, such as administrative capability, and have to balance the need to be comprehensive in order to minimize distortions and evasions with the need to discriminate between capital inflow categories, according to the benefits and risks associated with such flows.

The international financial system

The international environment plays an important part in financial crises in emerging markets. Volatility in international interest rates and economic growth in industrial countries affect the allocation of assets to emerging markets and create risks of booms and reversals in capital flows. Other characteristics, such as volatility and sudden shifts in market sentiment associated with euphoria, panics, herd behavior, and contagion are also influential. These failures in international financial markets have implications for international financial institutions.

Proposals for reforming the international financial system architecture have been under discussion since the Mexican crisis. A working group, under the auspices of the Group of 10 (G-10) industrial countries, drafted the Resolution of Sovereign Liquidity Crises, which focuses on sovereign bonds.[53] Discussions have gained urgency with the outbreak of the East Asian crisis and its global spread. The Group of 22 countries (G-22) established three working groups on enhancing transparency and accountability; strengthening financial systems; and managing international financial crises. These working groups have now finalized and submitted their reports,[54] and discussions of these proposals in official forums began in early October 1998. The G-7 countries have since agreed on a number of specific initiatives to strengthen the international financial system (Group of Seven 1998). These include, in the immediate context, an enhanced IMF facility to provide a precautionary line of credit and a World Bank emergency facility to provide support to countries at times of crisis for the protection of vulnerable groups and financial sector restructuring; and, in the longer-term, agreement on other principles to strengthen the global financial system, including greater transparency, enhanced surveillance, orderly and progressive capital

Box 3-7 Restrictions on capital flows in Chile and Colombia

Chile introduced restrictions on capital inflows in 1991 through unremunerated reserve requirements (World Bank 1997b). These reserves, which have to be maintained for one year regardless of loan maturity, constitute an implicit tax on foreign borrowing that varies inversely with the holding period. In 1995, reserve requirements were extended to all types of foreign financial investments, including American depository receipts. Colombia introduced capital controls in 1993 through unremunerated reserve requirements on direct external borrowing with a maturity of less than 18 months. These were subsequently tightened, requiring reserves for all loans with maturities of less than five years. Chile has since lowered the reserve requirement to zero.

It is difficult to gauge the effects these restrictions have on the volume of flows, as a change in flows could also be caused by other macroeconomic and financial developments. The restrictions in Chile and Colombia can be thought of as an implicit tax that significantly increased the interest differential between domestic and foreign short-term interest rates. Econometric studies that use this approach to estimate their effects suggest that they substantially changed in the term structure of external borrowing—discouraging short-term inflows—and encouraged equity investment in Chile and Colombia (Cardenas and Barrera 1997; Quirk and others 1995).

account liberalization, orderly resolution of future crises, and the need for good practices in social policy to protect the most vulnerable. Other announcements include the need to pursue further proposals for strengthening prudential regulations in industrial countries to promote safe and sustainable capital flows, strengthening financial systems in emerging markets, and improvements in other related areas. This section considers five main issues that are still evolving and remain subject to some debate.[55]

An international lender of last resort?

Arguments have been advanced for an international of lender of last resort, but such arguments also raise unresolved issues.

The traditional argument concerns the possibility of systemic risk. If a country fails to serve bank debt—whether sovereign or private—it may undermine the liquidity and even the solvency of banking systems in creditor countries. This risk was clearly present during the debt crisis of the 1980s, when BIS reporting banks' direct exposure to major emerging markets exceeded their capital, but it was much weaker in the 1997 East Asian crisis (table 3-3). This argument has lost some of its force with the greater risk diversification by banks and use of non–bank-based financial instruments.[56]

A second argument is based on the absence of an effective national lender of last resort (Mishkin 1998), whether because the country has chosen a currency board or because of the intrinsic difficulty in a small, highly open economy of an internal resolution of the liquidity problems of the domestic financial system.[57]

A third argument is based on the risks caused by contagion and the potential spread of panic among international investors (the Asian crisis provided yet another striking example of this). When a vulnerable currency is attacked, the attack may spread to other countries' currencies, even when their fundamentals are sound. A lender of last resort would provide reserves to emerging markets threatened by speculative attacks and thus prevent a currency collapse.

A final justification for a lender of last resort is on social welfare grounds. While market participants should bear the consequences of their actions and incur the costs of a crisis, some costs are borne by groups not responsible for the crisis, particularly the more vulnerable.

The G-7 adopted the principle of establishing a precautionary bilateral and multilateral line of credit to countries that are at risk and pursuing strong IMF-approved policies—to be drawn only in the event of a

BIS banks' exposure to emerging markets is much less than in the 1980s

Table 3-3 Commercial (BIS-reporting) banks' exposure to emerging markets

(debt as percentage of banks' capital)

	East Asia-5[a]	Latin America-5[b]	Major emerging markets[c]
All BIS-reporting banks			
End 1982	19.1	58.1	101.1
June 1997	18.8	14.2	50.0
German banks	17.0	13.7	
Japanese banks	39.2	5.2	
U.S. banks	6.8	14.5	

a. Indonesia, Republic of Korea, Malaysia, Philippines, and Thailand.
b. Argentina, Brazil, Chile, Mexico, and Venezuela.
c. Major emerging markets: East Asia-5, Latin America-5, China, Colombia, Czech Republic, Hungary.
Source: Bank for International Settlements and Organisation for Economic Co-Operation and Development

liquidity need. This would have potentially important benefits in helping to avert crises by reducing perceptions of uncertainty about international support and securing country policy improvements. There are also potential caveats to the effectiveness of this proposal, the problems being the same as those that apply to a lender of last resort.

Bailouts, moral hazard, and risk and burden sharing

Whether through a formal lender of last resort or *ad hoc* rescue packages, bailouts create moral hazard. Three types are possible: the first type relates to expectations by developing country governments of a bailout, which can reduce incentives to implement better policies. In most circumstances, however, the economic, social, and political costs of a financial crisis are too high for such moral hazard to operate. In fact, governments may delay calling on international financial institutions—despite the fact that a prompt response would reduce the costs of a crisis. A second type of moral hazard can arise because international creditors expect to be protected if a crisis occurs. A third type can arise because banks and private corporations undertaking risky activities expect to be bailed out under workouts of foreign debts, leading to the domestic socialization of these debts.

Whether through a formal lender of last resort or ad hoc *rescue packages, bailouts create moral hazard.*

Hard evidence about the extent of moral hazard in international lending is elusive. It has been argued that the Mexico bailout may have contributed to excessive risk taking in Asia, but the very large generalized decline in spreads on lending during the period preceding the East Asian crisis across all emerging markets may have also owed significantly to a generalized climate of euphoria. Still, it would be hard conclude that moral hazard has not been playing a significant role in influencing investor and borrower behavior in recent times, especially in the case of Russia before the immediate runup to the crisis (when spreads were still moderate). The abrupt cut-off in capital flows and sharply higher spreads to all emerging markets as a risk-class following Russia's collapse may also be partly ascribed to the realization that bailouts were no longer certain.

A supervisory role would be required for an international lender of last resort to minimize moral hazard. This implies using conditionalities for prudent macroeconomic management, implementing institutional reforms to reduce risks of crisis, and supporting measures that reduce incentives for (and introduce restrictions on) excessive risk taking.[58] Imposing this supervisory role on sovereign governments poses many challenges, however (Obstfeld 1998).

Bailouts also require dealing with risk and burden sharing issues, which means adopting clear rules to make sure that private operators bear some of the costs of their risky behavior. For domestic debtors, guarantees may be justified only for commercial banks in order to protect the payments system. These guarantees have to be paired with significant debt-reduction concessions by private creditors (Goldstein 1998), which must bear some of the costs of a crisis and

not be the only ones bailed out through the intervention of the lender of last resort.[59]

The size of rescue packages has increased dramatically in recent years. Large amounts are thought to be necessary to quiet down markets as they panic. But such "rescue creep" has risks. No reasonable amount of public money can stop a justified speculative attack. By themselves, larger packages worsen moral hazard problems and may lead to excessively tough conditions, defeating the end objectives.

In the final analysis, recourse to a lender of last resort depends on resolving a series of issues: the political concerns associated with the need to supervise sovereign governments, the tradeoff between the short-run benefits of avoidance or reduction in the severity of crisis and the long-run risks from moral hazard, and the availability of alternatives to official new lending. In the present international architecture, the mandate and corresponding resources to play this role are lacking. Given such limits, better national risk management in private and public spheres will remain a key.

Complements to new official lending, and involvement of the private sector in crisis prevention and resolution

A first cushion against a reversal in capital flows is adequate international reserves, a common but costly policy. Another possibility is to enter into private market arrangements that guarantee liquidity up to a predetermined limit. Argentina has such a contingent repo facility with international banks.[60] Indonesia had standby credit options, but the amounts were far too small to cope with the country's financial crisis in 1997.

Another alternative is to promote debtor-creditor negotiations to reach restructuring agreements allowing rollovers, extension of maturities, and reduction of debt. If clear and predictable, such workouts can help reduce lending distortions and induce better pricing of risk.[61] The main implementation issue is collective action by creditors. Every creditor has an incentive to try to get out first or to "free-ride" on others' acceptance of workout arrangements. Negotiations are difficult to initiate, protracted, and hard to enforce because of information asymmetries and transactions costs (Eichengreen and Portes 1995). The collective action problem is much more challenging in a crisis that involves mostly private-to-private debt (as in East Asia) than in one involving public debt (as in the crisis of the 1980s).[62] Further complicating the process is the much greater number of creditors and debtors than in the past and the centrality of exchange risk, as recent debt workouts in Korea and Indonesia show.

By themselves, larger packages worsen moral hazard problems and may lead to excessively tough conditions, defeating the end objectives.

Three types of contract clauses in debt instruments can be used to improve creditor coordination: collective representation, such as in bondholder councils; qualified majority voting; and sharing clauses that discourage dissident creditors from engaging in disruptive legal proceedings (Eichengreen and Portes 1995, Goldstein 1998).[63]

Debtor and creditor country governments are the central players in orderly workouts of private debts, as well as sovereign debt (Aggarwal 1998). The debtor country usually has primary responsibility for setting negotiations, especially given the adjustment policies they will have to implement. This should not lead to provision of government guarantees and the socialization of private debts, however, which happens frequently (including in the recent Korean and Indonesian agreements) and exacerbates moral hazard. Creditor governments play a crucial role by forcing their financial institutions to the negotiating table, to see that the private sector bears some of the costs of risk taking. International financial institutions, which have restrictions on lending into arrears, need to formalize the conditions for exceptions (which are frequent in practice) if they are to negotiate with private creditors in providing additional liquidity.

The external debt workout must also be properly sequenced with domestic debt restructuring. External creditors should not receive undue precedence or seniority.

The most critical aspect of a debt workout, however, is the temporary suspension of debt payments, which helps stop the decline in the currency and buys time to put in place a credible adjustment program and to organize debtor-creditor negotiations. By allowing an orderly debt restructuring, it could result in better outcomes for both the debtor country and creditors.

To be effective, however, the standstill has to come at the right time. That timing has to take into account three factors: one is that governments may delay declaring a debt standstill, fearing a loss of confidence and credibility and thereby greatly reduce the benefits. This seems to have been the case in East Asia in 1997. A second consideration is the need to prevent debtor governments with weak reputations from making excessive use of standstills; debt standstills should be possible only under exceptional circumstances and in extreme distress. The third is the need to get a standstill in place at the earliest possible date, so that all (or at least most) creditors share in the costs of restructuring.

Improved regulation and stepped-up supervision on bank lending in creditor countries

Asymmetric informational problems are more acute in cross-border lending and can lead to less discriminating and more risky lending. This was the case in the runup to the debt crisis in the 1980s, and seems to have occurred in the East Asia crisis. Witness the dramatic drop in spreads for Korean and Thai private borrowing, with spreads between bank and corporate borrowers nearly equalized by 1996–97 (figures 3-15 and 3-16).

Improved prudential regulation and stepped-up supervision of internationally active banks in creditor countries can help reduce these risks.[64] One proposal is to require a higher risk weight (than the 20 percent under the Basle rule) for lending to emerging markets,[65] based on the assessment of the country's financial system. This would raise the cost of borrowing to many developing countries,[66] but by improving the pricing of risk, it should reduce the incidence of crisis and the volatility of lending and interest rate spreads, and increase incentives for reform.

Information about and assessment of national financial systems, including the

quality and effectiveness of supervision and implementation of domestic regulations or global standards, may be valuable. Market participants may make use of it, and regulators in creditor countries may require its use in risk management by lending banks under their supervision.

Information and monitoring of vulnerabilities

More good information is always better than less. At the same time, complete transparency does not exist, and better information (recognizing the limits of costs in compiling such information) will not necessarily prevent crises. Even with elaborate disclosure rules, information asymmetry remains, as recent crises in industrial countries (for example, Republic Bank and Orange County bankruptcies in the United States, and financial crises in a number of Scandinavian countries) demonstrate. Still, there are potential benefits to better information and disclosure and there are two different sets of issues under discussion: improvements in information and disclosure standards, and better use of information to assess national vulnerabilities and undertake measures to forestall crises.

Transparency and accountability. As in the Mexican crisis in 1994, the East Asia crisis highlighted weaknesses in the coverage, frequency, and timeliness of information available to assess vulnerabilities. Before the onset of the Asian crisis, and for several weeks (if not months) after, the amounts of foreign liabilities to which the countries were exposed were not precisely

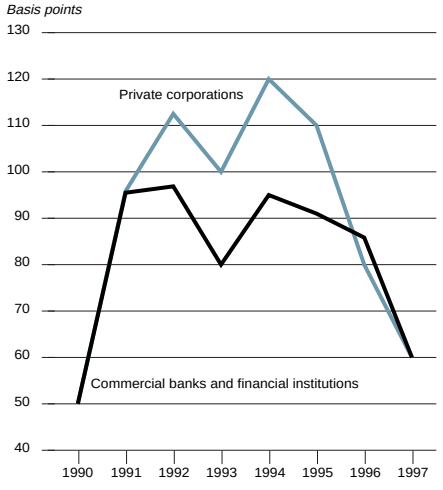
Spreads dip in Korea…

Figure 3-15 Spreads between corporate and bank borrowers in the Republic of Korea, 1991–97

Source: Euromoney (loanware).

…and in Thailand

Figure 3-16 Spreads between corporate and bank borrowers in Thailand, 1990–97



Source: Euromoney (loanware).

known. Uncertainty about short-term debt and foreign exchange reserves exacerbated the financial panic and crisis. The East Asian crisis has illustrated the role of private position-taking by nonfinancial firms, which are difficult to monitor in a liberalized environment. Questions have also been raised about the disclosure of information and transparency of international agencies themselves. Accordingly, improvements are needed on information and disclosure at all levels (private sector, national authorities, and international financial institutions), but international standards need to be applied carefully and progressively over time, recognizing constraints and costs.

Warning indicators are unlikely to predict crises, particularly their timing, but they can provide timely and better information about impending problems so that policymakers can take preventive actions.

Following the Group of Seven (G-7) Halifax proposals, international financial institutions, in conjunction with national authorities, are working to improve the quality and timeliness of information on central bank reserves, short-term foreign currency debt (including central bank derivatives transactions), and domestic financial sector indicators (such as nonperforming loans and short-term debt).[67] For national authorities, better disclosure and accounting standards, especially about foreign exchange liquidity positions, with respect to their financial institutions and private corporations, are also important. For international institutions, the presumption is toward greater release of information to the public, except in clearly defined cases where confidentiality requirements override the gains from making information public.

More and better information can also be made available from creditor country sources and from the BIS. This information can be used to improve risk assessment. There is also a case for better private efforts at collecting information, despite the failure of rating agencies to adequately assess risks in Asian countries during the runup to the crisis.[68] The G-22 working group on transparency and accountability has also recommended that modalities for compiling and publishing data on international exposure of investment banks, hedge funds, and other institutional investors be examined.

Warning indicators and manifestations of vulnerability. Warning indicators are unlikely to predict crises, particularly their timing, but they can provide timely and better information about impending problems so that policymakers can take preventive actions. The literature has used two approaches. The first, the signals approach, aims at determining characteristic and abnormal behavior of a set of variables—leading indicators—preceding crises, relative to tranquil periods. The indicators that predict the most actual crises and produce the least false alarms are used as leading indicators. The second is the regression approach, which looks at the statistical significance of various indicators in models of crisis determination.[69] Warning indicators of vulnerability usually flash positive signals for many variables at the same time. There is, however, no uniform, well-defined

set of indicators. Country conditions tend to be crucial in determining the significance of specific indicators (IMF 1998b; Goldstein and Reinhart 1998). Almost all studies have found that traditional indicators of vulnerability—notably those relating to indebtedness, fiscal policy, sovereign risk ratings, and interest spreads—have failed to send useful warning indicators of currency crises.

Vulnerability indicators of currency crises. The most important signals of a currency crisis are real exchange rate appreciation; international illiquidity, as measured by the ratio of short-term liabilities to reserves, money stock to reserves, or foreign assets to liabilities (of banks); and lending booms financed by foreign borrowing. Other significant indicators are slower GDP and export growth, higher foreign interest rates, deteriorating terms of trade, a decline in equity prices, and a banking crisis (Kaminsky and Reinhart 1997; Goldstein and Reinhart 1998).

The indicator most commonly associated with currency crises is the size of the current account deficit.[70] Empirical work has generally failed to find current account deficits helpful by themselves in predicting crisis, however (Frankel and Rose 1996; Sachs and others 1996; Milesi-Ferretti and Razin 1996; Radelet and Sachs 1998). An exception is Goldstein and Reinhart (1998), who find that ratios of current account deficit to GDP and to investment top the list of leading indicators of currency crises. In any case, current account deficits remain important in assessing vulnerability if complemented by analysis of the causal factors. Large or fast-increasing deficits should always be monitored, since they usually reflect rising capital inflows. Deficits should also be carefully monitored if spending is going to consumption rather than investment—particularly in the tradables sector—since there is presumption of lower risks (because of faster growth of GDP and exports). The East Asian crisis has shown that the allocation and efficiency of the increased investment is also relevant.

Warning indicators of banking crises. Most indicators of banking crises are macroeconomic, and closely related to those for currency crises (Goldstein and Turner 1996; Demirgüç-Kunt and Detragiache 1997; Kaminsky and Reinhart 1997). Work is being done on developing structural or microeconomic warning indicators. Relevant variables include spreads between deposit and lending rates, access to interbank loans, changes in the ratio of capital to risk-weighted assets, the loans-to-deposits ratio, foreign currency exposure, government ownership, and the proportion of lending at the discretion of banks and directed by government (Honohan 1997; Rojas-Suárez 1998).

Notes

1. Greenwald, Stiglitz, and Weiss (1984); Greenwald and Stiglitz (1993); Mishkin (1991, 1997); Stiglitz (1998b, 1998c).

2. Many empirical studies consider currency crises to be episodes of large devaluations (Edwards 1989; Edwards and Montiel 1989; Frankel and Rose 1996). In contrast, Eichengreen, Rose, and Wyploz (1995) and Kaminsky and Reinhart (1997) favor a broader approach, focusing on devaluations as well as episodes of unsuccessful speculative attacks. Otker and Pazarbasioglu (1996) regard crises as including cases of devaluation, increases in the rate of crawl, and shifts to a more flexible exchange rate system.

3. During 1870–1913 a number of then-emerging economies also received large amounts of capital

inflows. For 1870–89 and 1890-1913 the largest volumes (mean absolute value of current account as percentage of GDP) were respectively: 18.7 percent and 6.2 percent for Argentina, 8.2 percent and 4.1 percent for Australia, and 7.0 percent and 7.0 percent for Canada (Obstfeld 1998).

4. Stiglitz (1998a); Summers (1998).

5. Kumar, Moorthy, and Perraudin (1998) find that a decline in portfolio flows has a stronger impact on the probability of crisis than a decline in FDI.

6. Other factors include the greater degree of inherent risks present in developing countries, due to their narrower economic bases (smaller economies specialized in fewer economic activities).

7. Surges in capital inflows can occur either *exogenously*, because of events in the world economy outside the control of policymakers of the economy in question, or *endogenously*, because of changes in country policies and circumstances (Hernandez and Rudolf 1995; Gavin et al. 1995; Montiel and Reinhart 1997). They also respond to the macroeconomic policy mix of the capital importing country, as well as the capital market structure (Montiel and Reinhart 1997).

8. Fernandez-Arias and Montiel (1995) also find that in half of a sample of 12 countries experiencing the largest inflows relative to the size of their economies, reserve accumulation accounted for about 40 percent of the inflows.

9. In Corsetti, Pesenti, and Roubini (1998) this inconsistency is between fixed exchange rate, government bailout guarantees (and their implication for monetary policy), and foreign debt accumulation and current account deficits (or capital mobility).

10. There is evidence showing a significant degree of both openness and capital mobility in developing countries. It is based on interest parity tests: Edwards and Khan (1985); Khor and Rojas-Suárez (1991); Haque and Montiel (1991); Reisen and Yèches (1993); Robinson (1991); and Dasgupta and Dasgupta (1995); and correlation between savings and investment: Dooley, Frenkel, and Mathieson (1987); Wong (1988).

11. The cost of sterilization may be significant: from 0.5 to 2 percent of GDP per year in Chile and Colombia in the 1990s (Williamson 1996), and 0.3 to 0.75 percent of GDP per year for Malaysia, Thailand, and Indonesia in 1990–96 (ADB and World Bank 1998).

12. Private borrowers in Latin America in the 1990s generally displayed a far greater willingness to hedge their foreign exchange liabilities, while borrowers in East Asian countries generally avoided them—partly because historical nominal exchange rate volatility (and the volatility of financial prices) was much higher in Latin America than in East Asia.

13. The changes in the real exchange rate are particularly welcome if they reflect price adjustments in response to fundamental factors such as a permanent transfer of resources from increased capital inflows, shifts and gains in productivity following reforms, improved terms of trade, correction of earlier excessive depreciation, or increased levels of consumption to equilibrium levels consistent with higher permanent income (and the need to incur current account deficits).

14. The impact is minimized even in the absence of sterilization simply because, as the currency appreciates, the extent of the impact on domestic money is reduced by that exact amount of appreciation.

15. Assuming that the prevailing conditions do not justify a rise in long-term equilibrium exchange rates. Measuring whether prevailing exchange rates are misaligned with fundamentals is, however, notoriously difficult. In particular, relative purchasing power parity movements may not always provide the correct picture of misalignments from equilibrium exchange rates, and there may be other, better measures (Broner, Loayza, and Lopez 1998).

16. Schadler et al. (1993) and Dasgupta and Dasgupta (1995) find such evidence. This may be due to lack of credibility of low-inflation programs (Kaminsky and Leiderman 1998), to a rise in credit demand, or to increased riskiness of the financial sector.

17. The forms of such tighter fiscal policy may have differential effects. An adjustment that curbs spending or raises taxes on nontradables would reduce domestic inflation and interest rates. Alternatively, one that curbs spending or raises taxes on tradables would improve the current account deficit and reduce borrowing from abroad. Cutting spending would have a more direct and immediate effect on aggregate demand than raising taxes, because of lags.

18. Kaminsky and Reinhart (1997) find that more than half of the 26 banking crises they studied were followed by a balance of payments crisis within three years. Conversely, only about 1 in 10 of the balance of payments crises were followed by banking

crises within three years. Also, regression of the measure of banking crises against the balance of payments measure indicates that balance of payments crises do not help predict banking crises. Sachs, Tornell, and Velasco (1996) find that banking sector fragility is a major determinant of currency crisis. Milesi-Ferreti and Razin (1996) show that the banking sector plays an important role in determining current account sustainability.

19. However, Eichengreen and Rose (1998) find no evidence for a role of domestic financial fragility in predicting banking crises.

20. Sundarajan and Balino (1991) provide evidence of this effect in the case of the crises in the Southern Cone countries during the 1980s: Chile (1981–83), Argentina (1980–82), and Uruguay (1982–85).

21. In addition to any measures and regulations on foreign currency exposure and access to foreign borrowing by banks, discussed below.

22. There is some disagreement as to the effectiveness of higher reserve requirements as an instrument for restraining lending booms.

23. Honohan (1997); Caprio, Atiyas, and Hanson (1994). Such limits may be set at high levels that would not normally be reached, but restrain occasional bursts of overexuberant and risky expansion (World Bank 1998b).

24. The contributions of weak corporate governance and transparency to the East Asian crisis are analyzed in ADB and World Bank (1998).

25. World Bank (1998b). Also, work on developing standards for corporate governance is being undertaken within the OECD.

26. For extensive discussion see World Bank (1997b) and ADB and World Bank (1998).

27. See also the G-22 working group report on strengthening financial systems, October 1998.

28. An example is the more recently developed value-at-risk techniques for risk management.

29. These factors determine the balance of benefits (in terms of efficiency and stability) according to the type of banking system structure, ranging from "narrow banking" to "universal banking" (Kaufman and Kroszner 1997).

30. Caprio and Klingebiel (1996b) find faulty supervision and regulation to be significant in 26 of 29 bank insolvency cases. Poor bank management is a factor in 20 cases.

31. This consensus also constitutes the core of the IMF (1998a) guidelines.

32. Published by the International Accounting Standards Committee (IASC) and the International Federation of Accountants (IFAC). The International Organization of Securities Commissions (IOSCO) is also working on establishing universal principles for securities market regulations, improving disclosure requirements, and developing standards for cross-border offerings.

33. Some may also argue the usefulness of competition in setting standards as against harmonization.

34. More radical options would entail the abolition of deposit insurance, the adoption of narrow banking, or the adoption of free banking; see Caprio and Klingebiel (1996b).

35. Goldstein and Turner (1996); Sundarajan and Balino (1991); Kaminsky and Reinhart (1997); Caprio and Klingebiel (1996b); Demirgüç-Kunt and Detragiache (1997); Gavin and Hausmann (1996).

36. Eichengreen and Rose (1998) find a highly significant correlation between changes in industrial country interest rates and banking crises in emerging markets. Also, Kaminsky and Reinhart (1997) find that foreign-domestic interest rates signaled crises in all 20 cases for which data are available.

37. Banking consolidation, which at first sight should allow pooling and diversification of risks, does not necessarily do that: larger banks may still take on excessive risks without an adequate management structure in place. Bank supervision in the past conventionally focused on balance sheets, but much more attention is now devoted to the soundness of banks' management processes in assessing and managing risks (Mishkin 1996).

38. The ability of foreign financial institutions to enter domestic markets, which may be part of external financial liberalization but not formally part of capital account liberalization, also contributes to financial integration and provides benefits similar to those of trade liberalization, in terms of competitive effects and improved quality of services and reduced prices. Claessens, Demirgüç-Kunt, and Huizinga (1997) provide empirical evidence that broader foreign ownership of banks renders domestic banking markets more competitive and reduces domestic bank costs. Also,

foreign banks that are internationally and in terms of their activities more diversified help strengthen the domestic financial system. The reverse implication is that the franchise value of domestic banks may fall, inducing more risk taking. While this negative impact is real and the ensuing risk should be managed, on balance the benefits and risks of foreign entry are the same as those associated with FDI (in the financial sector) and warrant similar treatment.

39. World Bank (1997b) discusses these benefits at length. Another benefit sometimes cited is that financial openness submits governments to the hard scrutiny of international markets and would restrain any tendencies for mismanagement. Also, financial deepening through increased capital flows helps develop capital markets and allows more banking system intermediation, which are shown to affect growth positively (Levine and Zervos 1998). Increased international competition also enhances the quality of the financial system.

40. Of course the associated benefits of some flows such as trade credit which are closely related to trade should not be assessed only within this framework.

41. In capital inflow surges the increase in total inflows is due mainly to non-FDI flows, and the contribution is larger when the size of capital inflows is large (greater than 9 percent of GDP). As seen in box 3.3, reserve accumulation is also larger.

42. Because these flows have to be serviced, the net gains are a fraction of the gross. FDI flows too have to be serviced through profit repatriation, but a significant part of such profits are reinvested, consistent with the long-run nature of such inflows.

43. Low-income developing countries may also benefit from long-term consumption smoothing. They may borrow and increase their consumption now in view of increased income in the future.

44. The precise welfare improvement associated with increased consumption smoothing depends on a number of factors, such as the time-preference and the shape of the utility function, as well as assumptions about market structure, country size, and technology. The estimates of utility benefits from consumption smoothing vary widely, from nearly 0 percent of lifetime consumption (Backus, Kehoe, and Kydland 1992; Cole and Obstfeld 1991; Tesar 1995) to a very significant (15 percent) fraction of lifetime consumption (Obstfeld 1995; van Wincoop 1994). Typically, models that allow income growth to endogenously depend on diversification appear to arrive at higher estimates of gains than models where income is fixed. The alternative sets of assumptions also have differing degrees of ability to account for the stylized facts about consumption volatility.

45. This ignores longer-term consumption-smoothing effects, which are important.

46. Sachs and others (1996) find that countries with large short-term, variable, interest and foreign currency–denominated debt are more prone to crisis. Radelet and Sachs (1998) find that the ratio of short-term debt to reserves is strongly associated with the onset of crisis, whereas the ratio of long-term debt to reserves is not. Frankel and Rose (1996) find that the lower the reliance on FDI flows (compared to total debt), or the greater the reliance on more volatile capital flows, the higher the probability of crisis.

47. Models of self-fulfilling expectations of currency crisis imply that the intrinsic instability of the international financial system is a major contributor to currency crisis and, therefore, complete openness of the capital account implies greater risks for developing countries. This issue is discussed below.

48. The evidence is discussed in World Bank (1997b), chapter 2. See also Montiel and Reinhart (1997).

49. For instance, McKinnon and Pill (1997) model how excessive foreign borrowing can take place in a recently liberalized domestic financial system with inadequate supervision, and the presence of moral hazard, possibly due to government guaranties, in the context of unrestricted access to external finance.

50. Some argue, however, that such distinctions are not operational, that is, that volatility of flows cannot be distinguished among capital account categories, due to a high degree of substitution among these categories. Claessens and others (1995) researched capital inflows to five developing and five industrial countries over a 15-year period (or longer) and found no evidence of patterns in the volatility among components of the capital account. Specifically, long-term flows were as likely to be volatile as short-term flows. Similar research was later conducted by Chuhan and others (1996), who also found that various types of capital flows behave similarly. However, they rejected the notion that flows are essentially the

same. They focused on interrelationships of the behavior of flows, that is, on the relative responsiveness of one flow to changes in another. They determined that the composition of capital flows does matter, specifically that short-term inflows are more responsive to a change in FDI than the reverse and, therefore, suffer much more from contagion effects. Some have also argued that multinational corporations, for instance, hedge long-term FDI by rolling over opposite short-term currency positions, but there is little empirical evidence to support that view.

51. This may be partly due to lags in the measurement of FDI, with disbursement for new investments spread over many years.

52. A more difficult and controversial measure is to set prudential ratios for firms borrowing abroad—such as a minimum equity to liability ratio, maximum foreign to domestic liability ratio, and maximum open foreign exchange position.

53. The so-called Rey Report (May 1996), which recommends that financial systems in emerging markets be strengthened, that collective action clauses be added to bond contracts to facilitate orderly workouts, and that international financial institutions consider "lending into arrears" on sovereign debt owed to private creditors.

54. The three working groups, established by the Finance Ministers and Central Bank Governors of 22 systemically significant economies included senior officials from these countries and international financial institutions, focused on: increasing transparency and disclosure; strengthening financial systems; and improving the management of international financial crises. Three reports of the working groups were published in October 1998. Also the G-7 summit (Birmingham, May 1998) has considered ways to strengthen the global financial architecture.

55. Another issue concerns regional arrangements. Contagion tends to have, at least initially, a strongly regional character as demonstrated in both the Mexican and East Asian crises. These "neighborhood" spillover effects may be due to underlying linkages or regional similarities as perceived by investors. This provides an argument for institutional arrangements of a regional character to improve monitoring and surveillance and help initiate and implement policies to prevent financial crises. Regionally coordinated (and pooled) intervention may also be useful in responding to crisis.

56. There may be increased bank exposure, however, to the extent counterparty risks have increased in recent years with the proliferation of hedge funds and investing on margins.

57. An expansionary monetary policy or lender of last resort activity to contain financial crisis and provide liquidity is often counterproductive. Such a policy would cause expected inflation to rise and the domestic currency to depreciate. The depreciation of the currency would aggravate the domestic financial crisis, since it leads to a deterioration in the balance sheets of domestic banks and firms that have debt denominated in foreign currency. It may also lead to a jump in expected inflation, which would cause interest rates to rise, worsening the balance sheets of firms and households and potentially causing greater losses to banking institutions. The total net result is a worsening of the situation. An international lender of last resort would help overcome these problems and contain the domestic crisis.

58. These include the various rules discussed above: adequate disclosure requirements for banks, adequate capital standards, penalties and sharing in the costs by managers and shareholders, careful monitoring of banks' risk management procedures, prompt corrective action, and so on.

59. The U.S. Shadow Financial Regulation Committee (1998) has proposed a mandatory loss-sharing system imposing "haircuts" on foreign lenders who withdraw or fail to roll over their claims before IMF loans are paid back.

60. The facility allows the Central Bank of Argentina the option of issuing short-term dollar-denominated government bonds and provincial loans totaling $6.7 billion to international banks subject to a buyback clause. It pays a fee as long as the facility is available, and a spread is determined if it is used. The mechanism allows the Central Bank to act as a lender of last resort without resorting to domestic money creation, which is not possible under the currency board arrangement.

61. International debt workouts are usefully complemented by strong domestic bankruptcy laws and systems of debtor-creditor workouts.

62. The case of sovereign debt is discussed in the Rey Report of the G-10.

63. In order to avoid the adverse selection effects of such contract clauses, industrial countries should include them in their own government bond contracts.

64. There are also questions about the effects of international hedge funds on the volatility of exchange rates and stock markets in small countries.

65. This proposal was made recently by Alan Greenspan, Chairman of the U.S. Federal Reserve Board, in a speech before the 34th Annual Conference on Bank Structure and Competition of the Federal Reserve Bank of Chicago.

66. The implicit tax is paid by the borrowing country. This is unlike the imposition of taxes on capital flows by the borrowing country, where the tax revenues accrue to the government of the borrower.

67. To this end, the IMF has established the Special Data Dissemination Standards (SDDS) and the General Data Dissemination System (GDDS). See also the recommendations of the G-22 report of the working group on transparency and accountability, October 1998.

68. It has been argued that rating agencies suffer from a conflict of interest, having to respect local sensitivities to gain and maintain a foothold in emerging markets. It is very unlikely that a rating agency will survive if it brazenly misleads its customers.

69. A survey is in IMF (1998b).

70. A rule of thumb is that a current account deficit greater than 5 percent is often an indicator of vulnerability—for sustainability, the growth of that debt which should not exceed the average rate of economic growth.

References

Alexander, William E., Jeffrey M. Davis, Liam P. Ebrill, and Carl-Johan Lindgren, eds. 1997. *Systemic Bank Restructuring and Macroeconomic Policy.* Washington, DC: International Monetary Fund.

ADB (Asian Development Bank) and World Bank. 1998. "Managing Global Financial Integration: Emerging Lessons and Prospective Challenges." Manila (mimeo).

Alesina, Alberto, Vittorio Grilli, and Gian Maria Milesi-Ferretti. 1994. "The Political Economy of Capital Controls." In Leonardo Leiderman and Assaf Razin, eds., *Capital mobility: the Impact on Consumption and Growth.* Cambridge, UK/New York: Cambridge University Press.

Aggarwal, Vinod. 1998. "Exorcising Asian Debt: Lessons from Latin American Rollovers, Workouts, and Writedowns." Paper prepared for a World Bank conference on *The Aftermath of the Asian Crisis.* Washington, DC: World Bank. (May 13–14).

Backus, David K., Patrick J. Kehoe, and Finn E. Kydland. 1992. "International Real Business Cycles." *Journal of Political Economy* 100(4):745–75. (August).

BIS (Bank for International Settlements). *The Maturity, Sectoral, and Nationality Distribution of International Bank Lending.* Basle: Bank for International Settlements, Monetary and Economic Department (various issues).

Bordo, Michael D., Bruce Mizrach, and Anna J. Schwartz. 1995. "Real Versus Pseudo-international Systemic Risk: Some Lessons from History." NBER Working Paper 5371. Cambridge, MA: National Bureau of Economic Research. (December).

Broner, Fernando, Norman Loayza, and J. Humberto Lopez. 1998. "Real Exchange Rate Misalignment in Latin America." Washington, DC: World Bank (mimeo).

Burki, Shahid, and Sebastian Edwards. 1995. "Latin America After Mexico: Quickening the Pace." Washington, DC: World Bank (mimeo).

Calvo, Guillermo A. 1996. "Capital Flows and Macroeconomic Management: Tequila Lessons." *International Journal of Finance and Economics.* 1:207–23.

Calvo, Guillermo A., Morris Goldstein, and Eduard Hochreiter, eds. 1996. *Private Capital Flows to Emerging Markets After the Mexican Crisis.* Washington, DC: Institute for International Economics and Austrian National Bank.

Calvo, Sara, and Carmen Reinhart. 1996. "Capital Inflows to Latin America: Is There Evidence of Contagion Effects?" In Guillermo A. Calvo, Morris Goldstein, and Eduard Hochreiter, eds., *Private Capital Flows to Emerging Markets After the Mexican Crisis.* Washington, DC: Institute for International Economics.

Caprio, Gerard, Jr. 1997. "Safe and Sound Banking in Developing Countries—We're Not in Kansas Anymore." Policy Research Working Paper 1739. Washington, DC: World Bank, Policy Research Department.

Caprio, Gerard, Jr., and Daniela Klingebiel. 1996a. "Bank Insolvencies: Cross Country Experience." Policy Research Working Papers 1620. Washington, DC: World Bank, Policy Research Department, Finance and Private Sector Development Division.

____. 1996b. "Bank Insolvency: Bad Luck, Bad Policy or Bad Banking?" *Annual World Bank Conference on Development 1996*. Washington, DC: World Bank.

Caprio, Gerard, Jr., Izak Atiyas, and James A. Hanson, eds. 1994. *Financial Reform: Theory and Experience*. New York, NY: Cambridge University Press.

Carrasquilla, Alberto. 1998. "On Regulating Capital Account Transactions." Inter-American Development Bank. Paper presented at a World Bank seminar. Washington, DC: World Bank, (June 23).

Cardenas, Mauricio, and Felipe Barrera. 1997. "On the Effectiveness of Capital Controls in Colombia during the 1990s." *Journal of Development Economics* 54:27–57.

Cashin, Paul, Manmohan S. Kumar, and C. John McDermott. 1995. "International Integration of Equity Markets and Contagion Effects." Working Paper WP/95/110. Washington, DC: International Monetary Fund.

Chuhan, Punam, Gabriel Perz-Quiros, and Helen Popper. 1996. "International Capital Flows: Do Short-Term Investment and Direct Investment Differ?" Policy Research Paper 1669. Washington, DC: World Bank, Policy Research Department. (October).

Claessens, Stijn, Asli Demirgüç-Kunt, and Harry Huizinga. 1997. "How Does Foreign Entry Affect the Domestic Banking Market?" Washington, DC: World Bank, (June).

Claessens, Stijn, Michael Dooley, and Andrew Warner. 1995. "Portfolio Capital Flows: Hot or Cold?" *World Bank Economic Review* 9(1):153–74.

Cole, Harold L., and Maurice Obstfeld. 1991. "Commodity Trade and International Risk-Sharing: How Much Do Financial Markets Matter?" *Journal of Monetary Economics* 28:3–24. (August).

Corbo, Vittorio, and Leonardo Hernandez. 1996. "Macroeconomic Adjustment to Capital Inflows: Lessons From Recent Latin American and East Asian Experience." *The World Bank Research Observer* 11 (1):61–85.

Corsetti, Giancarlo, Paolo Pesenti, and Nouriel Roubini. 1998. "Paper Tigers? A Preliminary Assessment of the Asian Crisis." Paper presented at the NBER International Seminar on Macroeconomics, Lisbon. (June 14–15).

Dasgupta, Dipak, and Bejoy Dasgupta. 1995. "Interest Rates in Open Economies: Real Interest Parity, Exchange Rates and Country Risk in Industrial and Developing Countries." Policy Research Working Paper 1283. Washington, DC: World Bank.

Demirgüç-Kunt, Asli, and Enrica Detragiache. 1997. "The Determinants of Banking Crises: Evidence from Industrial and Developing Countries." World Bank Policy Research Working Paper 1828. Washington, DC: World Bank Development Research Group and International Monetary Fund Research Department, World Bank and International Monetary Fund. (September).

____. 1998. "Financial Liberalization and Financial Fragility." Paper presented at the Annual Bank Conference on Development Economics. Washington, DC: World Bank. (April 20–21).

Dollar, David. 1998. "Dividends and Disappointments: Learning from the Success and Failure of Foreign Aid." Policy Research Working Paper. Washington, DC: World Bank.

Dooley, Michael, Jeffrey Frankel, and Donald Mathieson. 1987. "International Capital Mobility: What Do Saving-Investment Correlations Tell Us?" IMF Staff Papers 34:503–30. Washington, DC: International Monetary Fund. (September).

Edwards, Sebastian. 1989. *Real Exchange Rates, Devaluation, and Adjustment*. Cambridge, MA: MIT Press.

Edwards, Sebastian, and Mohsin S. Khan. 1985. "Interest Rate Determination in Developing Countries: a Conceptual Framework." IMF Staff Paper 32:377–403. Washington, DC: International Monetary Fund.

Edwards, Sebastian, and Peter J. Montiel. 1989. "Devaluation Crises and the Macroeconomic Consequences of Postponed Adjustment in Developing Countries." IMF Staff Paper 36:875–903. Washington, DC: International Monetary Fund.

Eichengreen, Barry, and Richard Portes. 1995. "*Crisis, What Crisis? Orderly Workouts for Sovereign*

Debtors." London: Centre for Economic Policy Research.

Eichengreen, Barry, and Andrew K. Rose. 1998. "Contagious Currency Crises: Channels of Conveyance." In Takatoshi Ito and Anne O. Krueger, eds., *Changes in Exchange Rates in Rapidly Developing Countries* (forthcoming).

Eichengreen, Barry, and Charles Wyplosz. 1993. "The Unstable EMS." *Brookings Papers on Economic Activity* 1(1993):51–124. Washington, DC: Brookings Institution.

Eichengreen, Barry, Andrew K. Rose, and Charles Wyplosz. 1995. "Exchange Market Mayhem: the Antecedents and Aftermath of Speculative Attacks." *Economic Policy: A European Forum* 21:249–312. London: Centre for Economic Policy Research. (October).

____. 1996. "Contagious Currency Crises." *Scandinavian Economic Review* 98 (4):463–84. Also reprinted in Torben M. Andersen and Karl O. Moene, eds., *Financial Liberalization and Macroeconomic Stability*. Malden, MA: Blackwell.

Fernandez-Arias, Eduardo, and Peter J. Montiel. 1995. "The Surge in Capital Inflows to Developing Countries: Prospects and Policy Response." Policy Research Working Paper 1473. Washington, DC: World Bank, International Economics Department, International Finance Division.

Flood, Robert, and Peter Garber. 1984. "Collapsing Exchange-rate Regimes: Some Linear Examples." *Journal of International Economics* 17:1–13.

Frankel, Jeffrey, and Andrew K. Rose. 1996. "Currency Crashes in Emerging Markets: An Empirical Treatment." *Journal of International Economics* 41:351–66.

Frankel, Jeffrey, and Sergio Schmukler. 1996. "Crisis, Contagion, and Country Funds: Effects on East Asia and Latin America." Working Paper Number PB96-04. San Francisco: Federal Reserve Bank of San Francisco.

Galbis, Vicente. 1993. "High Real Interest Rates Under Financial Liberalization: Is There a Problem?" IMF Working Paper 93/7. Washington, DC: International Monetary Fund. (January).

Gavin, Michael. 1998. "Fiscal Policy in Emerging Market Economies." Paper presented at the *Capital Flows* Seminar at College Park, MD, May 1998. Economic Development Institute (World Bank) and University of Maryland.

Gavin, Michael, and Ricardo Hausmann. 1996. "The Roots of Banking Crises: The Macroeconomic Context." Working Paper 318. Washington, DC: Inter-American Development Bank. Also appeared in Ricardo Haussman and Liliana Rojas-Suárez, eds., *Banking Crises in Latin America.* Washington, DC: Inter-American Development Bank

Gavin, Michael, Ricardo Hausmann, and Leonardo Leiderman. 1995. "The Macroeconomics of Capital Flows to Latin America: Experience and Policy Issues." Working Paper 310. Washington, DC: Inter-American Development Bank. (October).

Glick, Reuven, and Andrew Rose. 1998. "Contagion and Trade: Why are Currency Crises Regional?" Prepared for a Centre for Economic Policy Research/World Bank Conference Financial Crises: Contagion and Market Volatility, London. (May).

Goldstein, Morris. 1995. "Coping with Too Much of A Good Thing: Policy Responses for Large Capital Inflows in Developing Countries." Policy Research Working Paper 1507. Washington, DC: World Bank, Policy Research Department.

____. 1998. "Limiting the Moral Hazard in International Financial Rescues." Prepared for a Brookings symposium. Washington, DC: Brookings Institution. (June).

Goldstein, Morris, and Carmen Reinhart. 1998. "Forecasting Financial Crises: Early Warning Signals for Emerging Markets." Washington, DC: Institute for International Economics (forthcoming).

Goldstein, Morris, and Philip Turner. 1996. "Banking Crises in Emerging Economies: Origins and Policy Options." BIS Economic Papers No. 46. Basle: Bank for International Settlements. (October).

Greenwald, Bruce, and Joseph E. Stiglitz. 1993. "Financial Market Imperfections and Business Cycles." *Quarterly Journal of Economics* 108 (1): 77–114.

Greenwald, Bruce, Joseph E. Stiglitz, and Andrew Weiss. 1984. "Informational Imperfections in the Capital Markets and Macroeconomic Fluctuations." *American Economic Review* 74 (22): 194–99.

Group of Seven. 1998. G-7 Leaders' Statement on the World Economy and Declaration of G-7 Finance

Ministers and Central Bank Governors, October 30.

Haque, Nadeem U., and Peter J. Montiel. 1991. "Capital Mobility in Developing Countries: Some Empirical Tests." *World Development* 19:1391–98. (October).

Hellman, Thomas, Kevin Murdock, and Joseph E. Stiglitz. 1996. "Deposit Mobilization through Financial Restraint." In N. Hermes and R. Lensink, eds., *Financial Development and Economic Growth: Theory and Experiences from Developing Economies.* London: Routledge.

____. 1997. "Liberalization, Moral Hazard in Banking, and Prudential Regulation: Are Capital Requirements Enough?" Research Paper No. 1466.

Hernandez, Leonardo, and Heinz Rudolf. 1995. "Sustainability of Private Capital Flows to Developing Countries: Is a General Reversal Likely?" Policy Research Working Paper 1518. Washington, DC: World Bank, Policy Research Department.

Honohan, Patrick. 1997. " Banking System Failures in Developing and Transition Countries: Diagnosis and Prediction." BIS Working Papers No. 39. Basle: Bank for International Settlements, Monetary and Economic Department. (January).

International Monetary Fund. 1996. *Exchange Arrangements and Exchange Restrictions, Annual Report*. Washington, DC.

____. 1997a. *International Capital Markets.* Washington, DC. (November).

____. 1997b. *Exchange Arrangements and Exchange Restrictions, Annual Report.* Washington, DC.

____. 1998a. *Toward a Framework for Financial Stability.* Prepared by a Staff Team led by David Folkerts-Landau and Carl-Johan Lindgren. World Economic and Financial Surveys series. Washington, DC: International Monetary Fund. (January).

____. 1998b. *World Economic Outlook*. Washington, DC: International Monetary Fund. (May).

____. 1998c. *Exchange Arrangements and Exchange Restrictions, Annual Report* (forthcoming).

Jeanne, Olivier. 1997. "Are Currency Crises Self-Fulfilling: A Test." *Journal of International Economics* 43(3/4):163–86.

Kaminsky, Graciela L., and Leonardo Leiderman. 1998. "High Real Interest Rates in the Aftermath of Disinflation: Is it a Lack of Credibility?" *Journal of Development Economics* 55:191–214.

Kaminsky, Graciela L., and Carmen Reinhart. 1997. "The Twin Crises: The Causes of Banking and Balance-of-Payments Problems." Working Papers in International Economics 37. College Park, MD: University of Maryland, Center for International Economics, Department of Economics. (December).

Kaufman, George G., and Randall S. Kroszner. 1997. "How Should Financial Institutions and Markets be Structured? Analysis and Options for Financial System Design." Inter-American Development Bank, Working Paper Series 338. Washington, DC: Inter-American Development Bank. (February).

Khatkhate, Deena. 1998. "Chasing Shadows: East Asian Financial Crisis and the IMF." Lecture to Bank Negara Malaysia.

Khor, Hoe Ee, and Liliana Rojas-Suárez. 1991. "Interest Rates in Mexico: the Role of Exchange Rate Expectations and International Creditworthiness." IMF Working Paper WP/91/12. Washington, DC: International Monetary Fund, Research and Western Hemisphere Departments.

King, Robert G., and Ross Levine. 1993. "Finance and Growth: Schumpeter Might be Right." *Quarterly Journal of Economics* 108(3):717–37.

King, Mervyn, and Sushil Whadwhani. 1990. "Transmission of Volatility between Stock Markets." *Review of Financial Studies* 3 (1):5–33.

Krugman, Paul. 1996. "Are Currency Crises Self-Fulfilling?" *NBER Macroeconomics Annual 1996:* 345–506. Cambridge, MA/London: MIT Press.

____. 1998. "What happened to Asia?" in Paul Krugman's web page (http://web.mit.edu/people/krugman/index.html).

Kumar, Manmohan S., Uma Moorthy, and William Perraudin. 1998. "Determinants of Emerging Market Currency Crises and Contagion Effects." Paper presented at the Centre for Economic Policy Research. Financial Crises: Contagion and Market Volatility: a CEPR/World Bank Conference. London. (May).

Levine, Ross. 1997. "Financial Development and Economic Growth: Views and Agenda." *Journal of Economic Literature*: 688–726. (June).

Levine, Ross, and Sara Zervos. 1998. "Stock Markets, Banks, and Economic Growth." *The American Economic Review.* (June).

Lindgren, Carl-Johan, Gillian Garcia, and Matthew I. Saal. 1996. *Bank Soundness and Macroeconomic Policy*. Washington, DC: International Monetary Fund.

Massad, Carlos. 1994. "Financial Reforms, Opening Up and Stability: Policy Issues and Sequencing Considerations." In Shakil Faruqi, *Financial Sector Reforms, Economic Growth, and Stability.* Washington, DC: World Bank.

Masson, Paul. 1998. "Contagion: Monsoonal Effects, Spillovers, and Jumps Between Multiple Equilibria." Prepared for a CEPR/World Bank Conference on Financial Crises: Contagion and Market Volatility. London. (May).

Mathieson, Donald J., and Liliana Rojas-Suárez. 1993. "Liberalization of the Capital Account: Experiences and Issues." IMF Occasional Paper 103. Washington, DC: International Monetary Fund. (March).

McKinnon, Ronald I., and Huw Pill. 1997. "Credible Economic Liberalizations and Overborrowing." *American Economic Association Papers and Proceedings of 109th Annual Meeting.* (January).

Milesi-Ferretti, Gian Maria, and Assaf Razin. 1996. "Current-Account Sustainability." *Princeton Studies in International Finance 81*. Princeton, NJ: Princeton University, Department of Economics. (October).

Mishkin, Frederic S. 1991. "Asymmetric Information and Financial Crises: A Historical Perspective." In R.Glenn Hubbard, ed., *Financial Markets and Financial Crisis.* Chicago: University of Chicago Press.

____. 1996. "Bank Consolidation: A Central Banker's Perspective." NBER Working Paper 5849. Cambridge, MA: National Bureau of Economic Research.

____. 1997. "Understanding Financial Crises: A Developing Country Perspective." *Annual World Bank Conference on Development Economics 1996.* Washington, DC: World Bank.

____. 1998. "Systemic Risk, Moral Hazard and the Lender of Last Resort." Prepared for a World Bank/Reinventing Bretton Woods Committee Conference on the *Aftermath of the Asian Financial Crisis*, Washington, DC. (March 13–14)

Montiel, Peter J. 1993. "Capital Mobility in Developing Countries: Some Measurement Issues and Empirical Estimates." Policy Research Working Paper 1103. Washington, DC: World Bank, Policy Research Department.

Montiel, Peter J., and Carmen M. Reinhart. 1997. "The Dynamics of Capital Movements to Emerging Economies during the 1990s." Paper prepared for the UNU/WIDER project on Short-term Capital Movements and Balance of Payments Crises.

Mundell, Robert A. 1963. "Capital Mobility and Stabilization Policy Under Fixed and Flexible Exchange Rates." *Canadian Journal of Economics and Political Science:* 475–85. (November).

Nicholl, Peter. 1997. "Market-Based Banking Regulation." In Suman K. Bery and Valeriano F. Garcia, eds., *Preventing Banking Sector Distress and Crises in Latin America.* Proceedings of a Conference held in Washington, DC. April 15–16, 1996.

Obstfeld, Maurice. 1986. "Rational and Self-fulfilling Balance of Payments Crises." *American Economic Review* 76: 676–81.

____. 1995. "Risk-taking, Global Diversification and Growth." *American Economic Review* 84(5): 1310–29.

____. 1996. "Models of Currency Crises with Self-fulfilling Features." *European Economic Review*: 1037–47. (April).

____. 1998. "The Global Capital Market: Benefactor or Menace?" NBER Working Paper 6559. Cambridge, MA: National Bureau of Economic Research.

Obstfeld, Maurice, and Kenneth Rogoff. 1996. *Foundations of International Macroeconomics.* Cambridge, MA: MIT Press

Obstfeld, Maurice, and Alan Taylor. 1998. "The Great Depression as a Watershed: International Capital Mobility over the Long Run." In Bordo, Michael D., Claudia D. Goldin, and Eugene N. White, eds., *The Defining Moment: The Great Depression and the American Economy in the Twentieth Century*. Chicago: University of Chicago Press.

OECD. *Financial Markets Trends.* Paris: Organisation for Economic Co-operation and Development (various issues).

Otker, Inci, and Ceyla Pazarbasioglu. 1996. "Speculative Attacks and Currency Crises: The Mexican Experience." *Open Economies Review* 7 (Sup. 1): 535–52.

Quirk, Peter J., Owen Evans, and others. 1995. *Capital Account Convertibility: Review of Experience and Implications for IMF Policies.* IMF Occasional Paper 131. Washington, DC: International Monetary Fund. (October).

Radelet, Steven, and Jeffrey D. Sachs. 1998. "The East Asian Financial Crisis: Diagnosis, Remedies and Prospects." Cambridge, MA: Harvard Institute for International Development. (April 20).

Razin, Assaf, and Chi-Wa Yuen. 1994. "Convergence in Growth Rates: a Quantitative Assessment of the Role of Capital Mobility and International Taxation." In Leonardo Leiderman and Assaf Razin, eds., *Capital Mobility: the Impact on Consumption, Investment and Growth*. Cambridge, UK: Cambridge University Press.

Reinhart, Carmen. 1998. "Capital Flows and Contagion: Causes, Consequences, and Policy Responses." Paper presented at the *Capital Flows* Seminar at College Park, MD, May 1998. Economic Development Institute (World Bank) and University of Maryland.

Reisen, Helmut, and Hélène Yèches. 1993. "Time-Varying Estimates on the Openness of the Capital Account in Korea and Taiwan," *Journal of Development Economics* 41:285–305.

Robinson, David. 1991. "Thailand: Adjusting to Success-Current Policy Issues." IMF Occasional Paper 85. Washington, DC: International Monetary Fund.

Rodrik, Dani. 1998. "Who Needs Capital-Account Convertibility?" Symposium paper to appear in *Princeton Essays in International Finance*.

Rojas-Suárez, Liliana. 1998. "Early Warning Indicators of Banking Crises: What Works for Emerging Markets? With Applications to Latin America." Washington, DC: Inter-American Development Bank.

Rojas-Suárez, Liliana, and Steven R. Weisbrod. 1996. "Banking Crises in Latin America: Experiences and Issues." In Ricardo Haussmann and Liliana Rojas-Suárez, eds., *Banking Crises in Latin America.* Washington, DC: Inter-American Development Bank.

Sachs, Jeffrey D., Aaron Tornell, and Adrés Velasco. 1996. "Financial Crises in Emerging Markets: The Lessons from 1995." *Brookings Papers on Economic Activity* 1(1996):147–215. Washington, DC: Brookings Institution.

Schadler, Susan, Maria Carkovic, Adam Bennett, and Robert Kahn. 1993. "Recent Experiences with Surges in Capital Inflows." IMF Occasional Paper 103. Washington, DC: International Monetary Fund.

Sheng, Andrew. 1996. *Bank Restructuring: Lessons from the 1980s*. Washington, DC: World Bank.

Stiglitz, Joseph E. 1998a. "Boats, Planes, and Capital Flows." *Financial Times*. March 21.

____. 1998b. "Knowledge for Development: Economic Science, Economic Policy, and Economic Advice." *Annual Bank Conference on Development Economics*. (April 20–21).

____. 1998c. "The Role of the Financial System in Development." Presentation at the Fourth Annual Conference on Development Economics in Latin American and the Caribbean. El Salvador. (June).

Summers, Lawrence. 1998. "Deputy Secretary Summers' Remarks before the International Monetary Fund." (March 19). Available at http://www.treas.gov/press/releases/pr2286.htm

Sundarajan, Vasudevan, and Tomas J.T. Balino. 1991. *Banking Crises: Cases and Issues*. Washington, DC: International Monetary Fund.

Tesar, Linda L. 1995. "Evaluating the Gains from International Risksharing." *Carnegie-Rochester Conference Series on Public Policy* 42(1995): 95–143. Amsterdam: North-Holland.

Valdès, Rodrigo O. 1996. "Emerging Market Contagion: Evidence and Theory" (mimeo). Massachusetts Institute of Technology.

Wacziarg, Romain. 1998. "Measuring the Dynamic Gains from Trade." Policy Research Working Paper 2001. Washington, DC. (November).

Williamson, John. 1996. *The Crawling Band as an Exchange Rate Regime: Lessons from Chile, Colombia, and Israel*. Washington, DC: Institute for International Economics. (October).

van Wincoop, Eric. 1994. "Welfare Gains from International Risk-Sharing." *Journal of Monetary Economics* 34:175–200. (October).

Wolf, Holger C. 1997. "Regional Contagion Effects In Emerging Stock Markets." *Working Papers in International Economics* G-97-03:1-18. Princeton, NJ: Princeton University, Department of Economics, International Finance Section. (October).

Wong, David Y. 1988. "What Do Savings-Investment Correlations Tell Us About Capital Mobility?" Working Paper 88-10. Philadelphia, PA: Federal Reserve Bank of Philadelphia. (May).

World Bank. 1997a. *Global Economic Prospects and the Developing Countries*. Washington, DC.

____. 1997b. *Private Capital Flows to Developing Countries: The Road to Financial Integration*. A World Bank Policy Research Report. New York: Oxford University Press.

____. 1998a. *Global Development Finance*. Washington, DC.

____. 1998b. *World Development Report 1998/99: Knowledge for Developmen*t. New York: Oxford University Press.

____. 1998c. *World Development Indicators*. Washington, DC.

Wyplosz, Charles. 1998. "International Capital Market Failures: Sources, Costs, and Solutions." Background Paper for *Global Economic Prospects and the Developing Countries 1998*. Washington, DC: World Bank.