Private capital flows to developing countries have been characterized by surges of inflows followed by financial crises. Explanations for this volatility can be found in the behavior and expectations of investors. However, the challenge is to look for less obvious explanations. In particular, is there a framework that can inform us about the apparently very different events, such as the 1982 debt crisis in Latin America and the 1998 crisis in Russia, without appealing to destabilizing investor behavior? Only ten years ago most "academics" were convinced that crises could be explained by conflicts between exchange rate policies and fiscal policies of emerging market governments. This view has been demolished by the apparent absence of such conflicts preceding recent crises in Asia.

My research strategy has been to propose alternative policy conflicts while retaining the assumption that private financial markets are inherently stable. The foundation of this approach is the well-known moral hazard problem. The idea is that the behavior of private debtors and creditors is influenced by the expectation that, in some circumstances, creditors will be able to sell their claims to a government on terms that are favorable relative to market prices at the time of the sale.

The capital inflow/crisis sequence based on moral hazard can be summarized as follows: the availability of free insurance raises the expected yield on a set of liabilities issued by residents for a predictable time period. The yield differential relative to international returns generates a private gross capital inflow (a sale of domestic liabilities to nonresidents) that continues until the day of attack. When the government's marketable assets are matched by its contingent insurance liabilities, the expected yield on domestic liabilities falls below international rates, and investors sell the insured assets to the government, exhausting its assets.

The idea that moral hazard plays some role in recent financial crises is now widely accepted. However, the possibility that it has been the primary cause of crises remains controversial. My interpretation of the evidence is that the moral hazard approach provides a good basis for understanding and, to some extent, for predicting all of the financial crises that have overtaken developing countries during the past 30 years.

**Collateral and Capital Inflows**

Why do nonresidents lend to sovereign governments when the ability to collect is so much in doubt? I have suggested that creditor and debtor governments' willingness and ability to liquidate (not just to service) private debt is necessary for private capital inflows. Three "fundamentals" must be present in order to generate a capital inflow/crisis sequence. First, a government must have marketable assets and lines of credit available to support new debt. Collateral consists of assets it can sell (usually international reserve assets) or the right to borrow against future tax
receipts at nonmarket rates. This will usually take the form of credit lines from creditor governments and international organizations. One important assumption is that, at the time of a crisis, the debtor government cannot borrow against future tax receipts from a subset of private creditors in order to liquidate the claims of other private creditors. I argue later in this article that private debt contracts are designed to make this "resolution" of a crisis impossible. Second, the government's commitment to exhaust these net reserves to pay off implicit or explicit insurance contracts must be credible. That is, it must be consistent with the government's incentives and ability to mobilize and exhaust its assets after the attack begins. Third, investors must have access to transactions that produce insured losses. That is, they must be able to appropriate the government's assets. For example, governments might instruct banks owned or controlled by the government to lend to firms that do not earn the competitive rate of interest in order to promote exports or employment or to subsidize constituents. More directly, the managers of a bank might book a new loan at more than its market value and invest the difference offshore. (2) A properly functioning regulatory framework is designed to make appropriation unprofitable.

Historical Examples of Capital Inflows

The capital inflow to developing countries that ended in the 1982 debt crisis was the first modern example of an insurance-based inflow/crisis sequence. (3) Following the first oil shock, governments of industrial countries decided that private financial intermediaries would be more efficient than governments at recycling investments from oil producers to developing countries. The private intermediaries of choice were large commercial banks chartered in industrial countries. My interpretation of this episode is that bankers understood the risks they were taking but also knew they were too big to fail and expected their own governments to insure their claims on developing countries.

The inflows ended when the stock of implicit claims on insurance exceeded the expected stock of collateral. In 1982 a dramatic rise in U.S. interest rates generated an immediate increase in the contractual value of floating rate debt of developing countries. The willingness and ability of creditor governments to fill the gap between the contractual value of debt and expected payments by debtors was called into question. The role of insurance in this episode has been obscured by the fact that creditor governments defaulted on their implicit liabilities. Conservative governments in the United States, Germany, and the United Kingdom were not inclined to liquidate their banks' claims on governments of developing countries. My interpretation of this outcome is that the 1982 reversal of capital inflows was both a crisis and default. In the next section I attempt to set out why the default was so costly and difficult to resolve.

After 1990, collateral again supported capital inflows to developing countries. For middle-income-developing countries with substantial stocks of external debt the missing fundamental from 1982 through 1989 was a stock of marketable assets to support a credible insurance commitment. After 1989, falling interest rates generated capital gains for debtor countries by reducing the value of floating rate debt. At the same time, stabilization programs supported by the International Monetary Fund, privatization, fiscal reform, and trade liberalization allowed Latin governments to accumulate assets and access to official lines of credit. My coauthors and I warned that these changes in the abilities of debtor governments to insure new capital inflows could again support rapid capital inflows and a new round of crises. (4)

For emerging markets in Asia, the binding constraint on capital inflows was not the value of collateral. Instead, these countries had very effectively limited capital inflows by closing their markets to nonresident investors. Liberalization made domestic liabilities available to foreign investors. It also made appropriation profitable because the existing regulatory framework was not adapted to deal with international capital flows. (5) In an interesting historical parallel to the 1970s, credible insurers, in this case emerging market governments in Asia, decided to liberalize capital markets in order to increase the efficiency of credit allocation.

The Crisis Phase

Crises come when liabilities equal assets. Yet, as discussed above, the magnitude of both these aggregates is uncertain, and expectations are subject to change. The trigger for crisis can be
anything that suddenly pushes the expected value of liabilities over the expected value of assets. Thus, the timing of crises is uncertain ex ante but explainable ex post.

For the insurance story to be plausible, there does have to be enough collateral to make expectations of an exchange plausible. For the six countries that have had crises in recent years, rescue packages and reserves covered about two-thirds of the entire gross private capital inflow after 1989. On average, therefore, investors had to expect to recover only 36 percent of the value of their investments to break even. Depending on the measure of liabilities at risk, insurance was either a very important or a decisive factor ex post in allowing private investors to liquidate their claims on emerging markets. It seems quite reasonable to assume that expected insurance was an important factor in generating the capital inflows in the first place.

Private investors will not expect to participate in the asset exchange unless they are a threat to governments at the time of crisis. Hence, investors have to predict how governments' preferences and constraints shape their treatment of various private creditors. One of the interesting implications of this approach is that investors' place in line for the government assets is endogenous. The same credit or creditor will be treated differently depending on the structure of the country's debt and the relative power of other creditors to impose costs on governments. The clear implication is that the structure of debt associated with previous crises will not be informative about the timing or likelihood of future crises. Finally, there are some creditors who are never bailed out -- equity holders are a good example -- but this does not reduce the usefulness of the model. The insurance theory would suggest that these types of claims pay very high returns in order to compensate for their expected junior status in the event of a crisis. In fact, the rates of return on equities in emerging markets prior to crises seem to be consistent with this expectation. A common negative shock to governments' net assets could truncate this process and generate a number of crises at the same time. Thus, a change in a common insurance fundamental might account for a bunching of crises. The crisis in Russia, for example, may have spread to Brazil because both countries had large stocks of domestic currency debt held by nonresidents. Russia's example that such positions were at risk led to a sensible move to reduce similar exposure in Brazil.

**Default and Stagnation**

Why has default been so painful? In a recent paper I argue that the link between financial crises and losses in real output is provided by international debt contracts that are structured to make strategic default unattractive to the sovereign debtor. The mechanism that accomplishes this is the design of contracts that are costly to renegotiate. The inability to renegotiate debt, in turn, guarantees a time interval during which residents of the country in default find it difficult to borrow from one another or from nonresidents. Since renegotiation cannot be conditioned by the reason for default, contracts designed to discourage strategic default will impose unnecessary output losses following unavoidable defaults.

International debt contracts are costly to renegotiate because all of the country's creditors must agree. The important coordination problem is not among banks or bondholders but between private creditors, official creditors, and holders of domestic debt. After a sovereign default there is a high probability that the debt will be restructured again. At the time of a future restructuring, the share of the new debt claimed will be determined by the principal value of the existing claims. If one class of creditors accepts a reduction in the contractual value of its claims, then its share of the new debt issued relative to other creditor groups will be reduced. In the limiting case, it is perfectly rational for creditors to demand average prices from other creditors or the debtor in reducing marginal debt.

Since every creditor must be at the table and write down debt simultaneously, such negotiations will be very difficult and costly.

**Conclusions**

Private international capital flows to and from developing countries are an important and poorly
understood component of the international monetary system. Clearly, emerging market countries’ best, and perhaps only, hope for developing efficient financial systems is to join the very competitive and efficient capital markets available to residents of industrial countries. But my reading of their recent attempts to do so suggests that market participants are also very good at exploiting opportunities for appropriating governments’ assets. The cost of transferring wealth from taxpayers to investors has been considerable, but it pales in comparison to the costs in terms of economic stagnation when investors miscalculate the willingness or ability of governments to deliver on their implicit guarantees.


