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While members of the Program in International Finance and Macroeconomics continue to work on many other topics as well, this article focused on the last four years will concentrate on the emerging markets theme. This research includes a major project, directed by Martin Feldstein and me, on “Financial Crises in Emerging Markets.” This project in turn included eight meetings on crises in specific countries — the Mexican crisis of 1994, the East Asian crises during 1997-8, through Argentina’s crash in 2001 — along with many other conferences. It produced eight NBER books.

Institutions

Economists’ interest in those countries that have become integrated into world financial markets over the last few decades can be seen as part of a larger increase in attention paid to developing countries in general. The field of development economics has recently been granted more of the priority and prestige that it deserves. Why some poor countries have been able to join the ranks of the rich and others have stayed behind is one of the most important questions of our time. Research on the deepest determinants of growth now emphasizes three strong influences: openness to trade; tropical geography; and, especially, the quality of a country’s institutions, such as protection of property rights, efficacy of the legal system, and absence of corruption. Financial market institutions, such as those charged with protection of shareholder rights, receive particular emphasis. Shang-Jin Wei and his co-authors document that corruption in a country makes foreign investors skittish.

Research by members of the IFM Program tends most often to deal specifically with macroeconomic questions, such as the choice of monetary and exchange rate policy, or a country’s decision whether to open its financial markets to international capital flows. But Daron Acemoglu, Simon Johnson, James Robinson, and Yunyong Thaicharoen argue that macroeconomic policies in developing countries are often the manifestation of deeper institutions and interest groups. For example, an IMF requirement that a country devalue in order to raise the domestic price of export commodities may be offset simply by some other policy to restore the preceding political equilibrium. Some of the more interesting findings discussed in this article concern the interaction of countries’ institutions with these macroeconomic decisions.

Exchange Rate Regimes

One major question addressed by IFM members is a country’s choice of currency regime: a fixed exchange rate, a floating exchange rate, or a regime with an intermediate degree of flexibility (such as a target zone). The debate is an old one, but it acquired

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Some new features in the late 1990s. One new development was the decision of some countries to abandon their independent currency for a device to fix its value firmly, such as a currency board or official dollarization. Sebastian Edwards and Igal Magendzo find that dollarization and currency unions have delivered lower inflation, as promised, but with higher income volatility.⁷

One of the arguments for a firm fix was that it would force domestic institutions to evolve in a favorable way, and would help prevent the chronic monetization of fiscal deficits that had undone so many previous attempts at macroeconomic stabilization.⁸ Argentina’s currency board, for example, appeared to work very well during most of the decade. It was believed that this “convertibility plan” had encouraged reforms that by the late 1990s had turned Argentina’s banking system into one of the best among all emerging markets.⁹ But when Argentina’s crisis crested in 2001, neither the supposedly deep pockets of foreign parents that had been allowed local bank subsidiaries¹⁰, nor any of the country’s other innovative reforms, were able to protect its banking system. This outcome can only have had the effect of reducing the earlier enthusiasm for currency boards.¹¹

But countries that proclaimed they were moving to a free float have generally not long stuck with that regime either. They exhibit “fear of floating,” and intervene substantially to dampen fluctuations. In the context of large capital inflows to emerging markets post-2001, this has meant large increases in holdings of foreign exchange. Dani Rodrik (“The Social Cost of Foreign Exchange Reserves,” NBER Working Paper No. 11952, Jan. 2006,) shows that reserves held by developing countries have now climbed to almost 30% of GDP, or 8 months of imports. Income loss due to low returns is close to 1 percent of GDP. Rodrik concedes that these high reserve holdings could be justified as insurance against financial crises, but not if the alternative is reducing short-term liabilities, achieving the same liquidity at lower cost.

Another new argument for monetary union has been the influential empirical findings of Andrew K. Rose and his co-authors that the boost to bilateral trade has been significant, and larger (as large as a threefold increase) than had been assumed previously.¹² Many others have advanced critiques of the Rose research, but the basic finding has withstood perturbations and replications remarkably well, even though the estimated magnitudes are sometimes smaller.¹³ Some developing countries seeking enhanced regional integration may now try to follow Europe’s lead.¹⁴

There are plenty of arguments in favor of floating currencies as well, and most of the victims of the last eight years of crises in emerging markets have responded by increasing exchange rate flexibility. One advantage that is beginning to receive renewed emphasis is that floaters are partially insulated against fluctuations in the world market for their exports.¹⁵

A relatively new realization is that attempts to categorize countries’ choice of regime (into fixed, floating, and intermediate) in practice differ from the official categorization.¹⁶ Countries that say they are floating, for example, in reality often are not.¹⁷ Indeed, neat categorization may not be possible at all. That Argentina was in the end forced to abandon its currency board, in 2001, also dramatizes the lesson that the choice of exchange rate regime is not as permanent or deep as had previously been thought.¹⁸ The choice of exchange rate regime is more likely endogenous with respect to institutions, rather than the other way around.¹⁹ The “corners hypothesis” — that countries are, or should be, moving away from the intermediate regimes, in favor of
either the hard peg corner or the floating corner — became fashionable in the late 1990s; but it is now another possible casualty of the realization that no regime choice is in reality permanent, and that investors know that.\textsuperscript{20}

If a country decides against setting a target for the exchange rate, that still leaves the question of what alternative target or targets will guide monetary policy instead, as Lars E. O. Svensson has emphasized. Setting a target for the money supply is no longer in fashion, for good reason.\textsuperscript{21} One popular alternative is inflation targeting.\textsuperscript{22} Another is the Taylor rule.\textsuperscript{23} An open area for research is whether and how such rules can be adapted for the special circumstances facing emerging market countries, such as lower credibility of their monetary institutions.\textsuperscript{24}

\textbf{Opening up Financial Markets}

Another major question that a country must decide is whether to liberalize financially. Do the advantages of open financial markets outweigh the disadvantages?\textsuperscript{25} There are many potential gains from international trade in financial assets, analogous to the gains from international trade in goods. Peter B. Henry and Anusha Chari have shown that when countries open their stock markets, the cost of capital facing domestic firms falls (stock prices rise), with a positive effect on their investment and on economic growth.\textsuperscript{26} Controls designed to moderate capital inflows thus may raise the cost of capital and slow growth. They may have a particular impact on small firms.\textsuperscript{27}

Nevertheless, financial liberalization has often been implicated in the crises experienced by emerging markets over the last ten years. Certainly a country that does not borrow from abroad in the first place cannot have an international debt crisis. Perhaps, then, there is a role for capital controls. Dani Rodrik finds that Malaysia’s decision to impose controls on outflows in 1998 helped it weather the Asia crisis.\textsuperscript{28} But Johnson and Todd Mitton find that Malaysian capital controls mainly worked to provide a screen behind which politically favored firms could be supported.\textsuperscript{29} Research more often has been sympathetic to a specific kind of capital control — Chile-style penalties on short-term capital \textit{inflows} — under the theory that they tilt the composition in favor of more stable long-term inflows.\textsuperscript{30} Ranciere, Tornell and Westermann (2006) find that countries that have experienced occasional financial crises have, on average, grown faster than countries with stable financial conditions.\textsuperscript{31}

A blanket indictment (or vindication) of international capital flows would be too simplistic. Some of the most interesting research examines the circumstances under which financial liberalization is more likely to be good (or bad) for economic performance. One claim is that financial opening lowers volatility and raises growth only for rich countries, and is more likely to lead to market crashes in lower-income countries.\textsuperscript{32} A second claim is that capital account liberalization raises growth only in the absence of macroeconomic imbalances, such as overly expansionary monetary and fiscal policy.\textsuperscript{33} A third important finding is that institutions, such as shareholder protection and accounting standards, determine whether liberalization leads to development of the financial sector, and in turn to long-run growth.\textsuperscript{34} A related finding is that corruption tilts the composition of capital inflows toward the form of banking flows (and away from foreign direct investment), and toward dollar denomination (versus denomination in domestic currency), both of which have been associated with crises.\textsuperscript{35} The implication is
that financial liberalization can help if institutions are strong and other fundamentals are favorable, but can hurt if they are not.

All of these findings are consistent with the conventional lesson about the sequencing of reforms: that countries will do better in the development process if they postpone opening the capital account until after other institutional reforms. Of course, the observable positive correlation between the opening of capital markets and growth could be attributable to reverse causation — that rich countries liberalize as a result of having developed, not because of it — but Hali Edison and her co-authors conclude from their own tests that this is not the case.

Origins of Currency Crises

What are the sources of crises in emerging markets, and why have they so often led to sharp recessions? Levels of debt that would not necessarily seem high by the standards of rich countries get some “debt-intolerant” developing countries into repeated trouble. When a poor country runs into difficulty, the international financial community demands that it cut its deficits, while rich countries tend to elicit the opposite response. What explains the key difference between global investors’ treatment of developing versus developed countries? The traditional explanation is macroeconomic fundamentals. But this does not seem to fit for some of the recent crises, inspiring models with multiple equilibriums (a country may get shifted to a crisis equilibrium even if its leaders do not initiate unsound economic policies). There are also models that feature herding, bubbles, and a particular role for mutual funds and other large investors in speculative attacks.

One prime culprit is the inability of developing countries to borrow internationally in terms of their own currency, termed by Barry Eichengreen and Ricardo Hausmann the problem of “original sin.” Firms or banks that incur liabilities in dollars or other foreign currencies while their revenues are primarily in domestic currency face the problem of currency mismatch; this in turn can lead to insolvency and contraction when the domestic currency devalues sharply. These balance sheet effects are at the center of many analyses.

Banks, in particular, have been implicated in most crises, usually because of the acute problem of moral hazard created by the prospect of government bailouts. Foreign direct investment is a less risky source of capital inflow than loans; the same is true of equity flows.

IFM researchers have devoted a lot of attention to the observed correlation of financial volatility across emerging markets. Part of the correlation can be explained by common external shocks, such as variation in U.S. interest rates. But some of the correlation is what is often called contagion of crises. Jessica Tjornhom Donohue and Kenneth A. Froot note the high persistence of portfolio flows of institutional investors across emerging markets and individual investment funds, and decompose the source of this persistence into a cross-country, cross-fund component, which might arise from contagion, versus other components. Graciela Kaminsky and Carmen M. Reinhart find that when contagion spreads across continents, it passes through major financial centers along the way. Kristin Forbes finds that contagion also spreads along the lines of trade linkages.
Response to Crises

Once a country is hit by an abrupt cut-off in foreign willingness to lend — a “sudden stop” — it hardly matters what the cause was. The urgent question becomes: what is the appropriate policy response? Often the loss in foreign financing must be taken as given. Thus there must be a reduction of the same magnitude in the previous trade deficit. How can the adjustment be accomplished? Is a sharp increase in interest rates preferable to a sharp devaluation? Many victims of crises in the late 1990s had to experience both. Regardless of what mix of policies has been chosen, recessions have been severe. Further questions of interest include: Is the output loss smaller if the country goes to the International Monetary Fund? What are the impacts of IMF and World Bank programs on income distribution? What are “best practices” for domestic financial restructuring?

Even though many currency crises over the last ten years have led to larger than expected output losses, one encouraging pattern has been that inflation usually has responded to devaluations much less than expected. The traditional view had been that countries, especially small countries, experience rapid pass-through of exchange rate changes into import prices, and then to the general price level. But this assumption appears to have become less valid. Ariel Burstein, Martin S. Eichenbaum, and Sergio Rebelo find that the price indexes are kept down by substitution away from imports toward cheaper local substitutes. The pass-through debate recently has focused on a comparison of the alternatives of producers pricing in their own currency versus local currency, in the context of the new open economy macroeconomic models, where all decisions are based on optimizing behavior. Charles Engel has questioned the validity of the assumption of producer-currency pricing, and in turn questioned the validity of the role of the exchange rate as an effective mechanism of trade balance adjustment. But Maurice Obstfeld argues that even if consumers face prices that are unchanged in local currency, devaluations spur adjustment through other channels, such as firms’ decisions to switch their source of imported inputs.

The question of whether to adjust to a current account deficit by devaluing or by other means takes the necessity of adjustment as given, a consequence of the sudden stop in foreign financing. But what if the magnitude of the loss in foreign financing is not a given? Alternatives include default, debt-reduction, forgiveness, rescue packages by the IMF, and arm-twisting of private investors to continue their exposure (called Private Sector Involvement). In this case, policy decisions made by the U.S. government and other members of the G-7 are central. On the one hand, the IMF moderates the severity of crises by acting as a kind of international lender of last resort, even though its resources are proportionately far smaller than the traditional domestic lender of last resort. On the other hand, IMF bailouts often are criticized for making the problems worse in the long run, because of moral hazard. IMF plans to institute a Sovereign Debt Restructuring Mechanism — a sort of international bankruptcy court — recently have succumbed to strong resistance. Instead, some prominent emerging market countries have added “Collective Action Clauses” to their bond contracts, inspired in part by Eichengreen’s arguments that this is a realistic way to accomplish private sector involvement without the worst of the moral hazard problems of IMF bailouts.
Debt-reduction\textsuperscript{78} seemed to help many developing countries put the 1980s debt crisis behind them (the Brady Plan of 1989). Can it do the same today?\textsuperscript{79} A recurrent puzzle is why more countries don’t default on their debts.\textsuperscript{80} Rose finds that bilateral debt reschedulings lead to losses of trade along corresponding bilateral lines estimated at 8 percent a year for 15 years, from which he infers that lost trade is the motivation debtors have to avoid such defaults.\textsuperscript{81} Michael Dooley has suggested provocatively that deep recessions, which most observers consider an undesirable effect of crises, exist for a reason: they are the system’s way of assuring investors that debtors have an incentive to avoid default.\textsuperscript{82} Despite the usual view that the global system has a long-run interest in punishing defaults, recent developments in Iraq have led Michael Kremer to propose an exception: if it can be impartially ascertained what ruler (like Saddam Hussein) constitutes an oppressive tyrant, then the international community could encourage successor regimes to default on the debt that their countries inherit; such a system would work to reduce the credit access of future tyrants.\textsuperscript{83}

\textsuperscript{1} For reports on these meetings and the rest of the project, go to http://www.nber.org/crisis/.
\textsuperscript{2} See http://www.nber.org/crisis/#books.


Barry Eichengreen and Alan M. Taylor argue that the true lesson of EMU is that monetary unions are adopted for political reasons, not economic. See “The Monetary Consequences of a Free Trade Area of the Americas,” NBER Working Paper No. 9666, May 2003.

Among peggers, terms-of-trade shocks are amplified and long-run growth is reduced, as compared to flexible-rate countries, according to S. Edwards and E. L. Yeyati, “Flexible Exchange Rates as Shock Absorbers,” NBER Working Paper No. 9867, July 2003.


The answer of David Laxton and Paolo Pesenti answer that central banks in emerging market countries (such as Czechoslovakia) need to move the interest rate more strongly in response to movements in forecasted inflation than a rich country would. See “Monetary Rules for Small, Open, Emerging Economies,” NBER Working Paper No. 9568, March 2003. In A. Fraga, I. Goldfajn, and A. Minella, “Inflation Targeting in Emerging Market Economies,” NBER Working Paper No. 10019, October 2003, the authors consider what emerging market central banks can do in light of lower credibility and larger external shocks than are faced by their counterparts in rich countries.


27 Kristin Forbes finds that Chile's famous controls on capital inflows raised the cost of capital for small firms in particular. See “One Cost of the Chilean Capital Controls: Increased Financial Constraints for Smaller Firms,” NBER Working Paper No. 9777, June 2003. For Carmen Reinhart and Todd Smith, the main problem is being able to remove the controls at the right time. See “Temporary Controls on Capital Inflows,” NBER Working Paper No. 8422, August 2001. On the other hand, Ross Levine and Sergio L. Schmukler, looking at 55 countries, find that when some firms are able to raise equity capital abroad, the remaining firms lose liquidity. See “Migration, Spillovers and Diversion: Impact of Internationalization on Stock Market Liquidity,” NBER Working Paper No. 9614, April 2003.


The phrase is from Carmen Reinhart, Kenneth Rogoff, and Miguel Savastano, in “Debt Intolerance,” NBER Working Paper No. 9908, August 2003; they attribute the problem to a country’s history of default and inflation.

For example, Roberto Rigobon finds that Mexico’s susceptibility to international contagion diminished sharply, after it was upgraded by Moody’s in 2000. See “The Curse of Non-Investment Grade Countries,” NBER Working Paper No. 8636, December 2001.


The IFM program, and the entire economics profession, suffered the tremendous loss of Rudiger Dornbusch in 2002. He had given us, among much else, such concise contributions to international finance as the phrases “overshooting,” “news,” and “sudden stops.” Rudi continued his characteristic hectic pace up until the end. One of his last articles summed up his wisdom on the balance sheet issues: “A Primer on Emerging Market Crises,” NBER Working Paper No. 8326, June 2001, published in Edwards and Frankel, *op.cit.*


R. J. Barro, “Economic Growth in East Asia Before and After the Financial Crisis,” NBER Working Paper No. 8330, June 2001. He estimates that the combined currency and banking crises in East Asia in 1997-8 reduced economic growth in the affected countries over a five-year period by 3 percent per year, compared to 2 percent per year for more typical crises.


High pass-through especially characterizes developing countries that are (unofficially) dollarized in the sense that a high percentage of assets and liabilities are denominated in dollars. See C. M. Reinhart, K. S. Rogoff, and M. A. Savastano, “Addicted to Dollars,” NBER Working Paper No. 10015, October 2003.


