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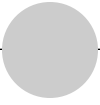
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# Introduction

Michael P. Dooley and Jeffrey A. Frankel

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The management of financial crises in emerging markets is a high-stakes and contentious problem for public policy. Policy interventions must be implemented quickly and under the worst possible economic circumstances. After the dust settles it is difficult to construct a convincing counterfactual in order to evaluate alternative policies.

An example, addressed directly by the first two chapters in this volume, is the debate over the proper use of interest rates to limit exchange rate depreciation in the midst of a crisis. Senior officials of the International Monetary Fund (IMF) and the World Bank have taken different sides in this debate, even though these institutions have not been well known for allowing internal debate to spill into the public press in the past. This public controversy underscores the importance of the issues involved and the depth of the uncertainty within the economics profession concerning the nature of good policy in this area. These problems are not solving themselves. As the papers in this volume were being written, further crises were brewing in Turkey, Argentina, and perhaps elsewhere, and the hot debate about the role of the official sector has intensified.

The papers collected in this volume were presented at a conference in March 2001. The main purpose was to bring together a group of academics, officials in the multilateral organizations, and public- and private-sector

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economists to discuss issues related to the management of financial crisis in the emerging market countries. (A companion conference produced the volume *Preventing Currency Crises in Emerging Markets*, edited by Sebastian Edwards and Jeffrey Frankel.) In commissioning a series of original papers, the editors and Martin Feldstein, the originator of the National Bureau of Economic Research's project on Exchange Rate Crises in Emerging Markets, called on economists who have contributed to the academic literature and, in many cases, have participated in the policy process.

The volume is divided into three parts, which can be viewed almost chronologically, as three phases counting forward from the moment that a country is hit by a crisis: first, the initial attempt to defend the currency; second, the IMF rescue program; and, third, the impact of the crisis and rescue program on the real economy. The first three chapters focus on the immediate defense of the regime under attack. The important issue here is whether unnecessary damage to economies can be avoided by the right response in the first few hours and days of a financial crisis. The next five chapters examine the adjustment programs that follow crises. It is now clear that crises have long-lasting negative effects on economic growth. Adjustment programs supported by financial assistance are designed to shorten the recovery phase and minimize the probability of further difficulties. Finally, the third group of four papers provides empirical evaluation of adjustment programs. Do they accomplish what they are designed to accomplish? Do they impose disproportionate costs on the poorest members of society?

It would be nice to believe that these difficult questions are resolved in the pages that follow. That goal is surely unrealistic. However, we hope that scholars and policy makers will find the work presented useful in thinking about how to reduce the frequency and costs of financial crises in the years to come.

### **The Defense**

In "Interest Rates and Exchange Rates in the Korean, Philippine, and Thai Exchange Rate Crises," Dongchul Cho and Kenneth D. West consider the relationship between exchange rates and interest rates immediately after the onset of a crisis. They propose a two-equation model for exchange rates and interest rates: a monetary policy reaction function, with the interest rate as the instrument, and an interest parity equation. The important identifying assumption is that the currency risk premium depends on the level of interest rates. The effects of interest rates on exchange rates are ambiguous because increases in interest rates can increase a risk premium. Cho and West estimate a special case of the model using weekly data from 1997 and 1998 for Korea, the Philippines, and Thailand. Their results suggest that increases in interest rates following crises led to exchange rate ap-

preciation in Korea and the Philippines but to depreciation in Thailand. Confidence intervals around point estimates are very large, however, and they cannot rule out the possibility that the sign of the actual effect is the opposite of the one estimated.

Alan Drazen's chapter, "Interest Rate Defense Against Speculative Attack as a Signal: A Primer," also deals with an interest rate defense against a speculative attack. He argues that high interest rates per se are unlikely to deter speculators when a discreet devaluation is likely. However, an interest rate defense might nevertheless succeed if high interest rates are a signal of the government's willingness or ability to defend the exchange rate. Drazen explores a class of models in which an interest rate defense alters the speculators' views of the type of government they face. In other words, this model allows for building credibility. The interest rate increase allows the government to distinguish itself from other governments that would not defend. This model presumes that the only available strategy for supporting a peg is an interest rate defense; if, instead, central banks can also run down or borrow reserves, the high interest rate defense may signal low reserves and hence encourage speculation. Drazen argues that empirical work supports both possibilities.

In "Does It Pay to Defend Against a Speculative Attack?" Barry Eichengreen and Andrew K. Rose compare the behavior of failed and successful defenses of currency pegs. They show that the costs of unsuccessfully defending against an attack are large. They are equivalent to approximately one year of economic growth: 3 percentage points of GNP in the year immediately following a crisis and roughly half that amount in the succeeding year. These losses are only evident for short periods. This finding helps to account for a number of observations about the behavior of open economies and their policy makers. Authorities have good reasons for defending currency pegs. International organizations tend to provide generous financial assistance to countries seeking to defend their currencies against attack. Finally, it appears that the V-shaped pattern of recovery from the Asian crisis is quite general—it is the prototypical response of output to a successful attack. These results are robust to the following sensitivity checks: (a) how tranquil versus crisis periods are defined; (b) inclusion of capital control variables; (c) addition of financial variables, or external sustainability variables (like foreign exchange reserves to debt, etc.); (d) exclusion of high inflation countries; and (e) exclusion of OECD countries.

### **The Program**

In "The International Lender of Last Resort: How Large is Large Enough?" Olivier Jeanne and Charles Wyplosz explore the idea that an international lender of last resort would be a useful addition to the international financial architecture. Could an international lender of last resort

(IOLR) function effectively as a fund with limited and predetermined resources? If so, how much resources would it need? Using a model of an emerging economy that is vulnerable to international liquidity crises, the authors find that the required size of the IOLR depends on how its resources are used by the domestic authorities. If the IOLR resources are used to finance foreign exchange intervention by the domestic central bank, the bad equilibrium is not removed, even by an arbitrarily large LOLR. If, in contrast, the LOLR backs a guarantee of the foreign currency liabilities of domestic banks, its resources do not need to be larger than the liquidity gap in the domestic banking sector.

In “Rescue Packages and Output Losses Following Crises,” Michael P. Dooley and Sujata Verma take on several issues. The first is analyzing the role of the IMF in a game theoretic context. The key assumption is that creditors cannot distinguish between nonpayment for liquidity reasons (liquidity defaults) and strategic defaults. In this environment, it may be optimal for creditors to precommit to imposing losses on the debtors by deliberately making the contracts difficult to renegotiate (this entails “excess sanctions” from a first best perspective). In this framework the IMF can have a role by facilitating negotiations so that the proceeds from the assets can still be shared following default. The IMF can also serve a welfare-improving role if it possesses more information than the creditor does about the state of nature facing the debtor.

A second major issue that is explored is why there are large output losses postcrisis. Most first-generation models of currency crises do not predict output losses. Second-generation (multiple-equilibrium) models might predict large output losses; and, in most such models, adding liquidity (increasing the size of the rescue packages) will reduce the output losses associated with crises. The explanation forwarded is an extension of Dooley’s “insurance model.” Capital inflows are “insured” by governments. The extent of the inflow is a function of the amount of insurance available—reserves, liquid assets of the government, credit lines from other governments and international institutions. Hence, in this framework, a crisis is the exchange of assets between the government and private investors. It is differentiated from a default by the fact that, in an uncertain world, guesses about the extent of insurance may be too high. In this case the country must default, and real resources will have to be transferred. A corollary of this is that the default durations will be linked to the size of the rescue packages. The authors provide some empirical evidence suggesting that output losses (a proxy for default durations) are indeed correlated with ex post rescue packages.

In “Financial Restructuring in Banking and Corporate-Sector Crises: What Policies to Pursue?” Stijn Claessens, Daniela Klingebiel, and Luc Laeven examine a micro dataset for 700 companies in nine crisis countries with the objective of identifying what policies are important in minimizing

the costs of the crises. They find that liquidity support early in the crisis and the use of a government-run asset management corporation (AMC) can mitigate the severity of a financial crisis. On the other hand, government guarantees of the banking system's financial liabilities do not appear to be helpful. Finally, the extent and quality of the legal framework are critical factors in determining whether the financial system's recovery from a financial shock is sustained and durable.

In "On the Fiscal Implications of Twin Crises," A. Craig Burnside, Martin Eichenbaum, and Sergio Rebelo explore the implications of different strategies for financing the fiscal costs of twin crises for rates of inflation and currency depreciation. They use a first-generation-type model of speculative attacks that has four key features: (a) the crisis is triggered by prospective deficits; (b) there exists outstanding nonindexed government debt issued prior to the crises; (c) a portion of the government's liabilities is not indexed to inflation; and (d) there are nontradable goods and costs of distributing tradable goods, so that purchasing power parity does not hold. The model can account for the high rates of devaluation and moderate rates of inflation often observed in the wake of currency crises. Their analysis suggests that the Mexican government is likely to pay for the bulk of the fiscal costs of its crisis through seigniorage revenues. In contrast, the Korean government is likely to rely more on a combination of implicit and explicit fiscal reforms.

In "An Evaluation of Proposals to Reform the International Financial Architecture," Morris Goldstein provides an assessment of some of the leading reform proposals. He uses lending policies and practices of the IMF as an organizing device for discussing selected issues in the reform debate, namely, interest rate increases and reduction of IMF loan maturity, the size of IMF packages, and issues of conditionality. The paper emphasizes the importance of currency mismatches and argues that most of the antidotes for currency mismatching problems proposed so far appear to be either too costly or too drastic. Instead of such antidotes, the paper favors a combination of managed floating and active development of hedging mechanisms. Furthermore, it suggests that every request for an IMF program should contain data on existing currency mismatching by the banking and corporate sectors, analysis of the sustainability of these mismatches, and explicit conditions for reducing the mismatch.

### **The Impact**

In "Recovery and Sustainability in East Asia," Yung Chul Park and Jong-Wha Lee analyze macroeconomic adjustment following the crisis in East Asia from a broad international perspective. The stylized pattern that emerges from the previous 160 currency crisis episodes shows a V-type adjustment of real gross domestic product (GDP) growth in the years prior to

and following a crisis. The adjustment shows a much sharper V-type adjustment in the crisis episodes with an IMF program, compared to those without. Cross-country regressions show that depreciation of real exchange rate, expansionary macroeconomic policies, and favorable global environments are critical for the speedy postcrisis recovery. In this sense, the East Asian process of adjustment is not much different from the previous currency crisis episodes.

However, the degree of initial contraction and following recovery has been far greater in East Asia than what the cross-country evidence predicts. This paper attributes the sharper adjustment pattern in East Asia to the severe liquidity crisis that was triggered by investors' panic and then amplified by the weak corporate and bank balance sheets. They find no evidence for a direct impact of currency crises on long-run growth.

In "A Cure Worse Than The Disease? Currency Crises and the Output Costs of IMF-Supported Stabilization Programs," Michael M. Hutchison concludes that participation in an IMF program is associated with a 0.75 percentage point reduction in GDP growth. He notes, however, that the growth slowdown usually *precedes* participation in an IMF program, suggesting that the relationship might not be causal. On the one hand, participation in an IMF-supported program following a balance-of-payments or currency crisis does not appear to mitigate the output loss associated with such events. On the other hand, Malaysia—the one crisis country in the East Asian episode that did not have an IMF program—suffered more than those countries with programs. Countries participating in IMF programs significantly reduce domestic credit growth, while no effect is found on budget policy. Applying this model to the collapse of output in East Asia following the 1997 crisis, the author finds that the unexpected (forecast error) collapse of output in Malaysia—where an IMF program was not followed—was somewhat larger on average than in those countries adopting IMF programs (Indonesia, Korea, the Philippines, and Thailand).

In "IMF and World Bank Structural Adjustment Programs and Poverty," William Easterly argues that structural adjustment, as measured by the number of adjustment loans from the IMF and World Bank, reduces the sensitivity of poverty reduction to the rate of growth. Growth does reduce poverty, but he finds no evidence for a direct effect of structural adjustment on the average rate of growth. Instead, the poor benefit less from output expansion in countries with many adjustment loans than in countries with few. By the same token, the poor suffer less from an output contraction in countries with many adjustment loans than in countries with few adjustment loans. Why would this be? One hypothesis is that adjustment lending is countercyclical in ways that smooth consumption for the poor. There is evidence that some policy variables under adjustment lending are countercyclical, but there is no evidence that the cyclical component of those policy variables affects poverty. He speculates that the poor may be ill

placed to take advantage of new opportunities created by structural adjustment reforms, just as they may suffer less from the loss of old opportunities in sectors that were artificially protected prior to reforms.

In “Impacts of the Indonesian Economic Crisis: Price Changes and the Poor,” James Levinsohn, Steven Berry, and Jed Friedman provide early estimates of the impact of the July 1997 Indonesian economic crisis on Indonesia’s poor. They find that price increases have affected the cost of living of poor households disproportionately. Just how hard the poor have been hit, however, depends on where the household lives, on whether the household is in an urban or rural area, and on just how the cost of living is computed. What is clear is that the notion that the very poor are so poor as to be insulated from international shocks is simply wrong. Rather, in the Indonesian case, the poor appear the most vulnerable.



