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Introduction

Paul Krugman

There is no generally accepted formal definition of a currency crisis, but we know them when we see them. The key element is a sort of circular logic, in which investors flee a currency because they fear that it might be devalued, and in which much (though not necessarily all) of the pressure for such a devaluation comes precisely from that capital flight. Such crises have been a recurrent feature of the international economy ever since gold and silver coins were replaced by paper; currency crises played a large role in the economic turmoil of the interwar era, in the breakup of Bretton Woods, and in the early stages of the Latin American debt crisis of the 1980s. And since the late 1970s currency crises have also been a major subject of academic study.

But nothing in the past history of the subject prepared economists for the 1990s. Future historians may, in fact, dub this the Age of Currency Crises: never before, not even in the interwar period, have currency crises played such a central role in world affairs. The massive attacks that roiled the European Monetary System in 1992–93 were a high-water mark for currency speculation; but that mark was soon surpassed by the "tequila" crisis of 1995; and *that* mark surpassed by the still-unfolding Asian currency crisis of 1997–98, which at the time of writing seems to be spreading back to Latin America. Currency crises—both crises that actually do happen and the sometimes desperate efforts of national governments and international agencies to head them off before they start—have become a defining force for economic policy in much of the world.

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It might seem that the decision to hold a special conference on currency crises at the National Bureau of Economic Research was a natural response to this vastly heightened importance of the subject. In fact, however, this is only partly true. Martin Feldstein approached me with the idea for such a conference in 1996, when the European and Latin crises had subsided and the idea that something even worse could happen to emerging Asia never even entered people's minds. By the time of the conference in February 1998, of course, what had been conceived as a low-key academic research meeting had acquired enormous salience.

Aside from topicality, however, why was another conference on a well-established research field needed? The answer is that despite two decades of research on the causes and consequences of currency crises, important issues are either unresolved or require a fresh look in the face of new experience. Here is a review of the three main issues that the conference revisited.

What Drives Crises?

Despite the fact that everyone agrees in a broad sense about the nature of currency crises—about the circular logic in which expectations of devaluation make devaluation more likely—the details have long been disputed. In general, this dispute divides researchers along two fault lines.

First, through what channel does speculation against a currency make the devaluation of that currency more likely? In the early currency crisis models, the channel was assumed to be essentially a mechanical linkage: speculation led to a depletion of foreign exchange reserves, which would then force the central bank to give up its defense of the original parity. One can still defend this assumption as a useful first pass at the problem—and in some cases even a reasonably good description of events. However, from the early years of currency crisis research many economists have argued that in the real world governments have much more freedom of action than the stylized models recognized, and that as a result the logic of such crises was more subtle and less mechanical than the existing theory.

Until recently the most influential alternative to the classic foreign-reserve-driven crisis model was what Eichengreen, Rose, and Wyplosz (1996) have dubbed "second generation" crisis models, which emphasize not the mechanical exhaustion of foreign exchange but the problems of macroeconomic policy. Loosely, a second-generation model imagines a government that is physically able to defend a fixed exchange rate indefinitely, say, by raising interest rates, but that may decide the cost of defense is greater than the cost in terms of credibility or political fallout from abandoning the defense and letting the currency float. In this case a currency crisis can develop because doubts about the government's willingness to defend the parity force it to raise interest rates, and the need to

keep interest rates high in turn raises the cost of defending the parity to a level the government finds unacceptable. The second-generation model came into its own in the European crises of 1992–93 and remains an important piece of the research agenda. In chapter 1 Barry Eichengreen and Olivier Jeanne argue that a version of second-generation theory does well at explaining not only recent European experience but also one of the important currency crises of the interwar period: Britain's departure from the gold standard in 1931. Allan Drazen's analysis of contagion, in chapter 2, is also predicated on second-generation logic, in which abandonment of the fixed parity brings macroeconomic gains but political costs, costs that are less if other countries have also faltered.

However, the emerging market crises of 1995 and 1997 do not seem to fit either first- or second-generation logic. After all, according to second-generation models devaluing or floating a currency gives the government freedom to follow more expansionary policies; yet in both Latin America and Asia currency crises were followed by severe recessions. Most researchers have therefore concluded that a different type of model—third generation?—is needed, with most work focusing on the issues involving financial intermediaries and liquidity effects. Guillermo Calvo's chapter 3 offers a rich menu of possible third-generation crisis models; Steven Radelet and Jeffrey Sachs offer an insightful comparison of the "real economy" implications of alternative crisis stories in chapter 4 and argue for what may be becoming the canonical story about emerging market crises, the idea that such crises are essentially bank runs that manifest themselves through the foreign exchange market.

While the mechanism of crisis has been one source of dispute, the determinants of whether and when a crisis occurs has been another. Early crisis models were "fundamentalist": that is, crises happened to countries whose fixed exchange rates were unsustainable in the long run, and happened when underlying economic conditions—such as the level of foreign exchange reserves—deteriorated past some critical point. However, an alternative tradition—particularly associated with Maurice Obstfeld (1994), who unfortunately could not attend the conference—argues that crises involve a strong element of self-fulfilling prophecy, that exchange regimes that could have survived indefinitely can nonetheless collapse if subjected to an essentially random speculative attack. Radelet and Sachs argue this position strongly for emerging Asia: drawing on both economic evidence and the apparent lack of early warning signs from the financial markets, their view is that this was a gratuitous crisis, that nothing in the Asian situation warranted such a sudden reversal of fortune.

It may be worth noting that in the months following the conference, two broad strands of "third generation" modeling did emerge. One strand—building on an idea largely due to Ronald McKinnon (see in particular McKinnon and Pill 1996) but applied to the Asian crisis by a number of

authors—focused on the role of implicit loan guarantees in generating excessive risky investment. Currency crises are then interpreted as a crisis of this moral hazard regime; it is the collapse of the investment that precipitates the macroeconomic setback.

The other strand elaborates on the "bank run" story suggested by Radelet and Sachs, emphasizing self-fulfilling collapse via either literal bank runs—a view promulgated by Chang and Velasco (1998a, 1998b)—or some kind of balance-sheet-driven financial contraction.

While there are dissenters, it seems fair to say that academic opinion has swung fairly strongly toward the self-fulfilling crisis view, largely because of the phenomenon of "contagion": the way that a crisis in one country seems able to trigger a crisis in another, even when the economic links appear to be minor. Most economists have concluded that this can happen only if believing makes it so—that is, if the nervousness created by a crisis in one country can set in motion a self-fulfilling run on the currency of another. However, the Drazen chapter points out that since in many crisis models the cost of abandoning a peg is essentially political—presumably because of the loss of credibility when a government reneges on a pledge to maintain the exchange rate—the lack of strong economic linkages may be irrelevant. If governments find safety in numbers, if devaluing when other countries have already devalued is less costly to one's reputation than acting alone, contagion can be consistent with a fundamentalist story about the timing of crises.

Clearly these controversies have not been resolved; but clearly also there has been a deepening of our understanding of the issues, and considerable movement in the views of the main protagonists.

How Should We Model Governments?

One of the main issues in currency crisis modeling—closely tied to the distinction between first-, second-, and third-generation models—is the question of how to think about government behavior. The early models assumed a very passive government, which stolidly doled out foreign exchange until the last dollar was gone; later models have tended to assume a much more sophisticated, activist policy. It also turns out that analyzing crises requires that one specify not only what the government will do *during* the crisis but what policies it will follow if its defense of the exchange rate fails.

Most of the papers in the volume give at least some consideration to these issues. Two focus specifically on government policies. In chapter 5 Robert Flood and Peter Garber take on a currency regime that was at the time of writing still prospective—the "Stage III" regime in Europe, in which the euro exists as a unit of account but not yet as an actual circulating currency. It is widely assumed that the financial arrangements within

Stage III will ensure the invulnerability of that system to speculative attack. Flood and Garber point out, however, that at least in principle those arrangements imply a willingness of national central banks to extend each other completely open-ended credit lines; if one has doubts about whether they will actually do so, one also has doubts about whether the system is really crisis-proof. One need not agree that a Stage III crisis is at all likely to agree that this kind of careful attention to the implications of monetary arrangements can be crucial.

Sebastian Edwards and Miguel Savastano consider the policies followed by the Bank of Mexico after the 1994 crisis—a period during which the peso suffered a megadevaluation, far greater than most analysts had expected, and in which interest rates rose to unexpected heights. In chapter 6 Edwards and Savastano show that the textbook assumption that a central bank pegs until its reserves are gone, then lets the currency float freely, is far from the reality: in actuality the peso was the subject of considerable attempts at short-term management even in the postcrisis float.

What Are the Effects of Crisis?

If there has been one area in which views of currency crises have shifted most since the origins of the academic literature two decades ago, it is probably the consequences of such crises for the real economy. In the early models crises were thought of as monetary events with few real consequences. Second-generation models, which emphasized the macroeconomic payoff to devaluation, suggested that real economic performance should if anything improve following a successful speculative attack—and the folk wisdom has been that this was in fact the case in Europe following the 1992 crisis. More recently, the experience of emerging economies has suggested to many that currency crises, by forcing these countries to move suddenly from current account deficit to surplus, cause severe economic downturns.

On closer examination, however, these generalizations are far less clear. Robert Gordon revisits the postcrisis European landscape in chapter 7 and finds that the conventional view that it was better to fail than to succeed at currency defense is heavily colored by just one comparison—Britain versus France—and that the overall picture is much less clear. (And the subsequent rise of the pound suggests that structural factors may have played a bigger role, and monetary ones a smaller one, in British success than widely believed.) Gian Maria Milesi-Ferretti and Assaf Razin focus on emerging economies in chapter 8, examining a cross section of many crisis episodes. Their surprise conclusion is that currency crises and sudden current account reversals are not the same thing—and that while currency crashes are normally associated with sharp declines in output, current account reversals are not. At the very least this suggests that we need

to rethink the channels through which the adverse effect of currency crises takes place.

A Field in Transition

The study of currency crises is a field in flux, largely because the world itself keeps on throwing up new crises for us to examine at a rate that would be gratifying to scholars if it were not so terrifying to policymakers. The papers collected in this volume are very far from the last word. But they represent the latest thinking, captured at a moment in which some of the best minds in economics were focused on the theory and practice of speculative attack, and will surely serve as the basis for much more work to come.

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