

Understanding Recent Crises in Emerging Markets

ROBERTO CHANG

The author is a research officer in the macropolicy section of the Atlanta Fed's research department. He thanks Mike Chriszt for assistance with the data and Mary Rosenbaum for useful comments. Views expressed reflect ongoing collaboration with Andrés Velasco. The author is solely responsible for content.

ONE HARDLY NEEDS TO PAY ATTENTION TO THE NEWS TO NOTICE THAT THE WORLD ECONOMY IS GOING THROUGH A DIFFICULT AND DANGEROUS PERIOD. THE RECENT BRAZILIAN CURRENCY MELTDOWN IS ONE MORE IN A SERIES OF EVENTS THAT INCLUDES THE ASIAN CRISES OF 1997–98 AND THE MEXICAN CRASH IN 1994. AS THESE LINES ARE WRITTEN, THERE IS TREMENDOUS UNCERTAINTY ABOUT IF AND WHEN OTHER EMERGING ECONOMIES WILL BE INFECTED WITH THE BRAZILIAN VIRUS. THIS POSSIBILITY IS CORRECTLY PERCEIVED AS A MAJOR THREAT TO THE STABILITY OF THE INTERNATIONAL FINANCIAL SYSTEM AND TO ECONOMIC PERFORMANCE IN THE UNITED STATES.

Dealing with crises in emerging economies is, therefore, an urgent matter. However, what to do about them is a source of heated debate. Witness the disagreement with respect to the Asian crisis. The World Bank criticized the International Monetary Fund's (IMF's) handling of the crisis; the IMF faulted the governments of the affected countries for not acting quickly and decidedly enough; Asian governments blamed foreign creditors for taking their money and running; creditors claimed no fault, for they also lost money. No wonder casual observers are confused.

In fact, much of the confusion is due to the fact that extant knowledge about crises in emerging markets has proven inadequate for analyzing recent events. As a consequence, economists have developed new theories intended to shed light on current debates. These the-

ories are fresh, mostly untested, and still being refined. Nevertheless, the importance of the subject warrants a summary and evaluation of the state of affairs; that is the objective of this article.

The article begins with a brief review of relevant aspects of recent crises, which will highlight not only their spectacular magnitude but also why previous explanations seem inapplicable. The older conventional wisdom held that crises were ultimately linked to fiscal imbalances in the form of government budget deficits, which caused the loss of international reserves until governments were unable to defend exchange rates. But, while that wisdom was largely consistent with the currency crises of the eighties, the crucial fiscal deficits were notoriously absent in the recent episodes of Mexico and Asia.

The article then reviews new attempts at explaining crises. While the recent literature on the subject is gargantuan, it can be readily divided into two categories.¹ The first, which can be called the bad policy view, argues that inappropriate government intervention, in particular government guarantees to domestic private borrowing, provided incentives for the private sector to borrow too much and to invest in socially unproductive or excessively risky activities. This mechanism, according to the bad policy view, led to an accumulation of implicit government obligations and, ultimately, to the collapse of the regime.

The second category, which will be referred to as the financial panic view, argues that the key issue was a maturity mismatch of assets and liabilities. According to this view, countries that went into crises had banks and other financial institutions that borrowed at short maturities in order to finance projects that, while expected to be profitable in the long run, were costly to liquidate in the short term. This strategy would have been successful if short-term creditors had remained confident and rolled over their loans. Crises erupted, however, when creditors panicked and demanded that their claims be honored in the short term, each expecting others to do the same. Faced with the sudden need for liquidity, the financial system was forced to liquidate long-run projects at a loss, a process that ended in bankruptcy.

Distinguishing between the bad policy and the financial panic views is not merely an academic exercise, for it determines the evaluation of crucial decisions on public policy. This is the case, in particular, when considering whether an official multilateral facility to provide liquidity assistance to countries in trouble—an international lender of last resort—is desirable. According to the bad policy camp, such a facility would not help in preventing crises but, instead, would end up just throwing good money after bad. In contrast, if crises were the result of financial panics, an international lender of last resort would be a beneficial institution that, by reassuring creditors of emerging markets that their claims would be ultimately honored, would in fact prevent the losses of confidence leading to crises. This article discusses this and other examples in further detail.

Finally, this article will provide a (necessarily preliminary) comparison of the two viewpoints. It will be argued that both theoretical considerations and empirical work give (so far) an upper hand in the current debate to the financial panic camp. While the two positions are difficult to contrast empirically, the financial panic view has a more solid theoretical foundation and is consistent with a wider range of observations than

the bad policy view. It is perhaps this assessment that has informed recent policy approaches to financial fragility in emerging economies.

Some Stylized Facts

Before attempting to explain recent crises, it is perhaps useful to ask the more basic question, What is a “crisis”? Surprisingly, the answer is not obvious, and the lack of a clear-cut definition is a source of considerable confusion. To focus this discussion, the article identifies the main features of a “typical” crisis. The description below approximates most if not all of the recent episodes termed crises in emerging markets.

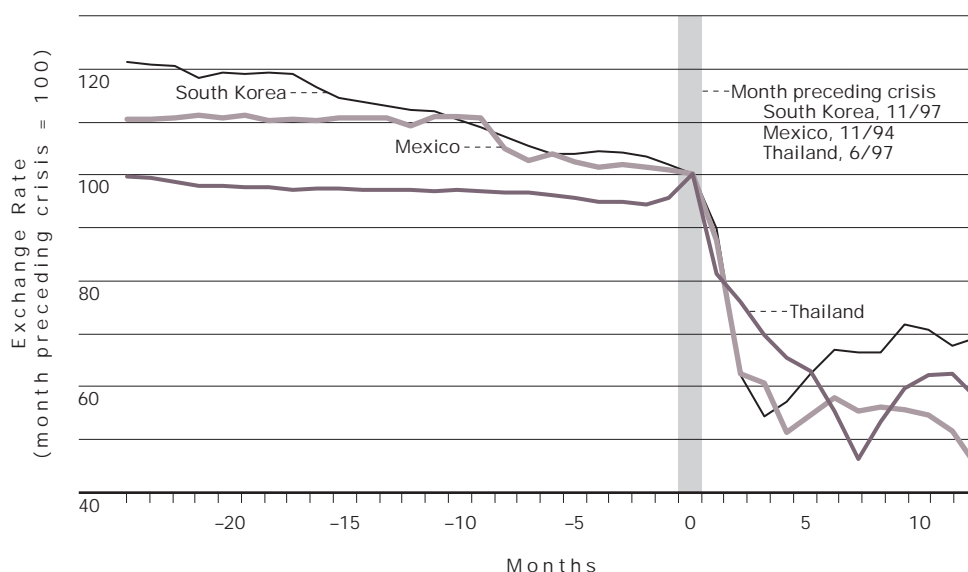
In a typical crisis, a central bank has been pegging the foreign currency value of its domestic currency, the exchange rate, by buying or selling international reserves at the pegged rate. Although this strategy may have worked for some time, it may suddenly require more foreign exchange to sustain the peg, and international reserves start to dwindle. A look at the reasons for the fall in reserves suggests that private investors are losing confidence in the ability of the central bank to maintain the peg much longer. Depositors in domestic banks close their accounts, and expectations of bank failures grow; investors in the stock market rush to sell their holdings, causing stock prices to plunge; and international lenders refuse to roll over maturing loans. The common theme is that claimants on the financial system—depositors, stockowners, and international lenders—are attempting to liquidate their claims and, if necessary, convert the sums thus collected into hard currency.

In order to honor their commitments, financial institutions are forced to liquidate assets and cancel loans, imposing severe strains on firms and households. Default rates rise; some banks are pushed to the verge of bankruptcy. The central bank may attempt to fight these trends by raising interest rates, but it would do so at the cost of exacerbating the economic contraction. When this conflict becomes apparent to the public, there is a further loss of confidence, and the loss of

A most notable aspect of recent crises has been that currencies depreciated dramatically after relatively long periods of stability.

1. An excellent sample of the recent literature can be obtained from Nouriel Roubini's *Asia Crisis Web page*, available at <http://www.stern.nyu.edu/~nroubini/asia/asiahomepage.html>.

CHART 1 Selected Exchange Rates



Source: Data Resources International, Federal Reserve Bank of Atlanta

international reserves accelerates. Finally, reserves become so low that the central bank is forced to stop selling them to the public, ceasing the support of the exchange rate. Free to float, the value of domestic currency plunges. The financial system ends up in severe disarray, and the economy enters a deep recession.

This sketch seems to capture the main features of the 1994 Mexican crisis, the 1997–98 Asian crisis, and the recent Brazilian crisis. Simple as it is, it highlights a salient feature of those crises: that turmoil in the financial system was an essential phenomenon that interacted with the collapse of a policy of fixed exchange rates. It also, and intentionally, fails to mention fiscal deficits, current account deficits, real (inflation-adjusted) exchange rate overvaluation, or other macroeconomic disequilibria often emphasized in the literature. This omission occurs because those disequilibria were in fact not present in recent episodes.

The data are clearly consistent with these remarks.² A most notable aspect of recent crises has been that currencies depreciated dramatically after relatively long periods of stability, as illustrated by Chart 1. At the beginning of December 1994, 3.3 Mexican pesos were worth one U.S. dollar; only three months later, the cost of the dollar had climbed to more than eight pesos. The national currencies of the so-called Asean 5 countries (South Korea, Indonesia, Malaysia, the Philippines, and Thailand) lost more than 30 percent of their value in the second half of 1998; the Brazilian real was devalued by more than 40 percent in the three weeks following the government's decision to let it float in early 1999.

While central banks in the crisis countries had been successful in defending pegged exchange rates for some time, they were forced to abandon the pegs after international reserves fell to critical levels. As Chart 2 illustrates for Mexico and Thailand, the loss of reserves was abrupt. Mexico had more than U.S.\$16 billion of official reserves in October 1994, but it lost more than half that amount in the following six weeks.

Reserve losses reflect the fact that claimants on the domestic financial system liquidated their claims and converted the proceeds into foreign currency. This response is clear in the behavior of stock markets and capital flows. As Chart 3 illustrates, stock prices fell preceding the onset of the crises in Mexico and South Korea as a result of massive sell-offs of domestic stocks. That international creditors stopped extending further loans can be inferred by the data collected by the Institute of International Finance (1998). According to these data, capital inflows to Asia changed from U.S.\$93 billion in 1996 to minus U.S.\$12 billion in 1997, a change of U.S.\$105 billion, or, roughly, 11 percent of regional gross domestic product (GDP).³

Finally, recent crises had substantial real effects. As Chart 4 shows, real GDP in Mexico contracted by 6 percent in 1995 following several years of positive growth. The Asian crises were even more costly. In Thailand, for instance, GDP fell by 8 percent in 1998.

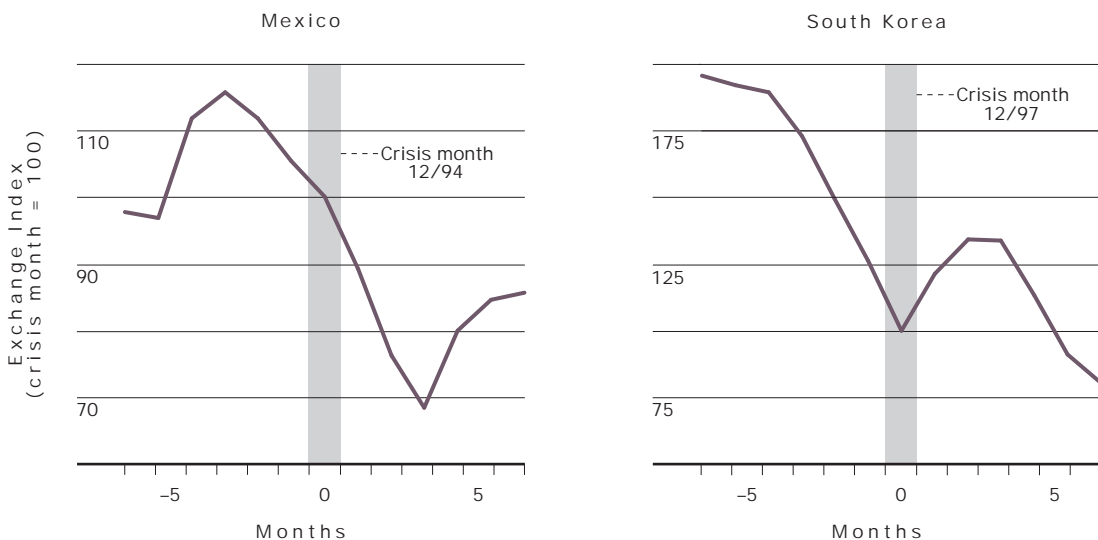
So far the article has argued that recent crises evolved along the lines of what was called the typical case. But it also mentioned that such crises were not preceded by conventional macroeconomic disequilibria, as Table 1 documents. The table shows that satisfactory

CHART 2 International Reserve Levels



Source: International Monetary Fund, Federal Reserve Bank of Atlanta

CHART 3 Stock Exchange Indexes



Source: Data Resources International, Federal Reserve Bank of Atlanta

growth and low inflation had been the norm, not the exception, preceding the crises in the economies affected. Likewise, it shows that the fiscal accounts of those economies were basically balanced.

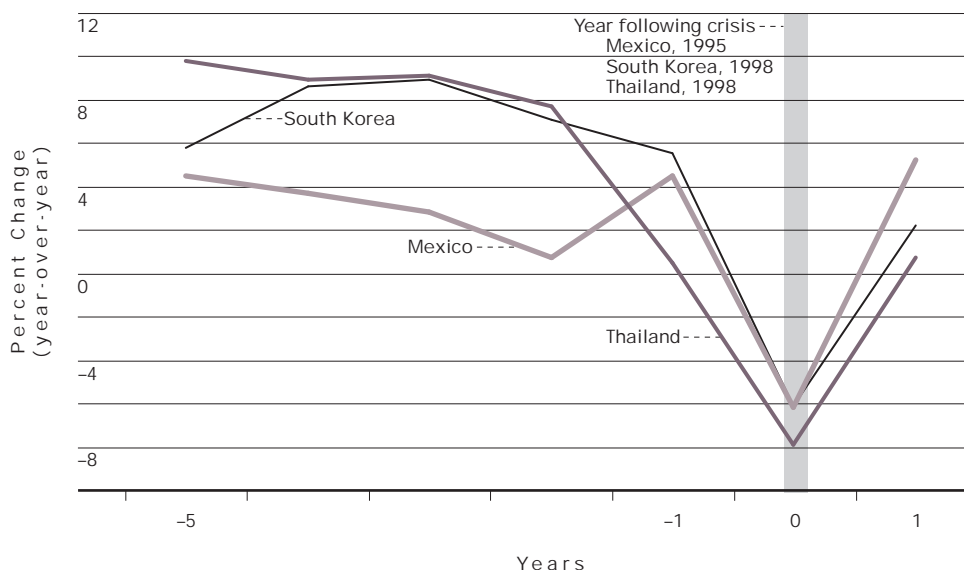
Table 1 is especially relevant as strong evidence against two older views on emerging markets crises. The

first, following the seminal paper by Krugman (1979), held that a balance-of-payments crisis was the predictable outcome of inconsistent macroeconomic policy. Such a crisis happened when a fixed exchange rate system had to be abandoned by a government that ran a persistent fiscal deficit but had access to limited international reserves.

2. Interested readers should consult Radelet and Sachs (1998), Corsetti, Pesenti, and Roubini (1998), or Chang and Velasco (1998c) for a much fuller discussion.

3. This computation is found in Radelet and Sachs (1998), who also note that the turnaround occurred in the second half of 1997.

CHART 4 Selected Real GDP Performance



Source: J.P. Morgan, Consensus Forecasts, Federal Reserve Bank of Atlanta

This first generation view was clearly applicable to other episodes, but it is clearly inconsistent with the absence of fiscal imbalances shown by Table 1.

A second generation view, proposed by Obstfeld (1994), held that while governments may not have to abandon fixed exchange rates they may choose to do so if the social cost of defending fixed rates, particularly in terms of unemployment, becomes too large. Obstfeld forcefully argued that his second generation view was applicable to the European Exchange Rate Mechanism (ERM) crisis of 1992. However, Table 1 shows that the emerging economies at the center of recent crises did not exhibit a particularly weak macroeconomic picture, making Obstfeld's argument less compelling.⁴

The inconsistency between the facts just reviewed and older theories of crises in emerging economies has been a prime motivation behind the development of alternative approaches. These new approaches have been inspired, in turn, by the observation that, as noted above, the financial system has been at the center of recent crises.

New Conceptual Approaches: The Bad Policy View

While literally thousands of papers have been written on the recent sequence of crises, they can be readily classified into two main groups: a bad policy camp and a financial panic camp.

Advocates of the bad policy theory follow the spirit of Krugman's first generation approach in asserting that, ultimately, crises are the inevitable outcome of misguided government policy. However, the proponents of this view need to solve the puzzle of why policy imbalances were not apparent from conventional monetary or fiscal

statistics. Their answer has been to argue that policies in crisis countries were in fact bad but, at the same time, were unusual enough so that their effects did not show up in conventional macroeconomic measures. While not manifest, the damage on the economy accumulated over time, eventually leading to a crisis and a policy reversal, just as an apparently healthy tree ultimately falls long after its roots begin to rot.

What policies fit such a description? Implicit or explicit government guarantees to private debts are the leading candidates. It has been argued that governments in emerging economies often guarantee domestic private liabilities in spite of the fact that such guarantees encourage domestic borrowers to take socially costly actions (such as investing in excessively risky projects or simply stealing the borrowed funds). While such a policy implies that the government will ultimately absorb the resulting losses, it may look successful for a while—that is, for as long as the government has enough funds to keep it going. A crisis must occur, however, because this insurance fund has a limit and, at some point, the accumulated losses must reach that limit; since private agents understand that further borrowing will not be guaranteed, there must then be an attack in which creditors exchange existing private liabilities for the government insurance fund.

The bad policy view was originally articulated by McKinnon and Pill (1996), Dooley (1997), and Krugman (1998); its applicability to the Asian 1997–98 crisis has been exhaustively discussed by, in particular, Corsetti, Pesenti, and Roubini (1999). In addition to rationalizing the absence of the usual warning signs of fiscal or monetary excesses, the bad policy view is consistent with two

TABLE 1 Basic Macroeconomic Indicators in Selected Crisis Countries

	1991	1992	1993
Mexico			
GDP	3.7	2.8	0.7
CPI	22.7	15.5	9.8
Fiscal Balance	2.7	4.1	0.7
	1994	1995	1996
South Korea			
GDP	8.6	8.9	7.1
CPI	6.3	4.4	5.0
Fiscal Balance	2.7	-0.9	-1.1
	1994	1995	1996
Thailand			
GDP	8.9	9.1	7.7
CPI	5.1	5.8	5.8
Fiscal Balance	1.9	3.0	2.4

Source: International Monetary Fund

notable facts preceding recent crises. First, most of the countries that went into crises had experienced radical reform and liberalization in their financial sectors, including the deregulation of interest rates, the easing of reserve requirements, and the promotion of entry and competition in financial sectors (Asian Development Bank 1998). Second, the bad policy view is consistent with rapid growth in credit preceding crises, an association that has been stressed by Sachs, Tornell, and Velasco (1996) and others. Interestingly, both facts are regrettable according to the bad policy position. By eliminating controls and regulations, financial liberalization may have allowed borrowers to take excessive risk or engage in unprofitable activities. Credit booms, on the other hand, may have represented a faster accumulation of social losses, thus bringing forward the time of reckoning.

New Conceptual Approaches: The Financial Panic View

The opposite position is that the Asian crisis was the result of a financial panic. Those in this camp argue that economic fundamentals in crisis countries, including government policies, may not have been

entirely satisfactory yet did not warrant a crisis. Instead, the cause was that international creditors and domestic depositors, fearing a crisis, suddenly refused to roll over credits or keep their funds in the financial system. Such a confidence loss may have been precipitated by almost anything—bad news about a particular bank or business conglomerate, disappointing exports, or political turmoil. The important consequence is that these countries had to scramble for short-term funds, and doing so resulted in costly liquidations, asset price collapses, domestic bank runs, and credit crunches. In other words, the flight to liquidity caused a real crisis, which in turn justified, *ex post*, the loss of confidence.

It is important to note that the crises forced financial systems to liquidate investments at a loss, even if those investments may have been very profitable in the long run. A key implication is that recent crises did not need to happen. If foreign lenders and depositors had not panicked, financial systems would not have had to endure the credit shocks, and the costly disruption of the system would have been avoided, justifying the optimistic expectations. Hence, for financial panic advocates, market expectations were key to the understanding of crises.⁵

4. To be sure, the fact that the countries under scrutiny did not have a particularly weak macroeconomic situation is not decisive proof of the inapplicability of Obstfeld's argument since it is conceivable that their governments may have tried to avoid a worse situation. However, the substantial fall in economic activity in those countries after the onset of their crises makes such a possibility implausible.

5. Note that, in emphasizing market expectations, the financial panic camp follows Obstfeld (1994).

T A B L E 2 Asean 5: Short-Term Foreign Debt/International Reserves

	Indonesia	South Korea	Malaysia	Philippines	Thailand
June 1990	2.21	1.06	0.22	3.18	0.59
June 1994	1.73	1.61	0.25	0.41	0.99
June 1997	1.70	2.06	0.61	0.85	1.45

Source: Bank for International Settlements, International Monetary Fund

There are by now a number of versions of the financial panic view.⁶ In particular, Chang and Velasco (1998a, 1998b) have shown that a crucial condition for a small country to be prone to financial panics is international illiquidity. A country's financial system is internationally illiquid if its potential short-term obligations in hard currency exceed the hard currency liquidation value of its assets. If holders of the short-term liabilities of the financial system lose confidence and attempt to redeem their holdings, the system will become bankrupt, making the confidence loss self-fulfilling, if and only if it is internationally illiquid.

In other words, financial panic advocates argue that the root of recent crises was a maturity mismatch: short-term international liabilities were far greater than short-term assets. Evidence in favor of this view has been provided in Chang and Velasco (1998c) and Radelet and Sachs (1998) for the Asian case. To illustrate, consider Table 2, taken from Chang and Velasco (1998c). In the table, the short-term liabilities of South Korea, Indonesia, Malaysia, the Philippines, and Thailand have as proxies their short-term borrowing from Bank for International Settlements reporting banks; their short-term assets have as proxies the level of their international reserves. The bottom row of figures shows that the ratio of short-term debt to reserves far exceeded unity in June 1997 in Indonesia, South Korea, and Thailand. That this ratio was above one means that if, as was the case, international bankers had refused to roll over credit, these countries would not have had enough reserves to meet their immediate obligations. Also, while the debt-reserves ratio was below one in Malaysia and the Philippines, it had more than doubled since 1994.

In addition, the financial panic view is consistent with observing financial liberalization and credit booms prior to crises. In fact, financial liberalization may be the key to understanding why the crisis countries became internationally illiquid. For example, one of the implications of increased competition is that banks will offer better terms (higher yields on savings deposits, for instance) to depositors in order to attract their business. This move tends to not only make depositors better off but also increase the potential short-term liabilities of banks and, hence, to exacerbate international illiquidity. The conse-

quence is that financial liberalization may make countries more prone to crises although, in contrast with the bad policy view, it is intrinsically welfare-improving.⁷

Public Policy Implications

Bad policy and financial panic advocates agree in several respects—in particular, that attention should be paid to the role of financial institutions in the genesis of crises. However, their disagreements are also sharp. They emphasize different economic mechanisms. Most importantly from a practical standpoint, they have very different policy implications.

As has already been mentioned, this difference is manifest in the implications of the two views for the desirability of financial liberalization. A consequence of the bad policy view is that financial liberalization in emerging countries has been a policy error. In contrast, financial panic advocates would argue that financial liberalization was not a mistake, although additional policy measures should have been taken to compensate for the accompanying increase in financial fragility.⁸

The controversy is even more heated, perhaps, when it comes to analyzing the desirability of an international lender of last resort. The recent experience with crises has convinced many that there is a need for an international facility that would extend hard currency credit to countries experiencing a crisis. That role may be assigned to the IMF, for example, or to a wholly new institution.

It is a logical consequence of the bad policy view, however, that such a facility is not a good idea: the credit thus extended would only serve to finance bad investments, and hence it would ultimately be unrecoverable. In other words, an international lender of last resort would only entail throwing good money after bad.

In contrast, financial panic advocates argue that a suitable international lender of last resort would go a long way toward eliminating crises. The loans extended by such a facility would prevent the costly disruption of the financial system associated with private creditors' loss of confidence. In turn, private creditors would be reassured that their claims would ultimately be honored, making it more likely for confidence to be maintained. Conceivably, the availability of sufficient credit for emerging countries in trouble may stabilize expectations sufficiently enough to eliminate confidence crises, so the

credit line may never have to be drawn upon. In other words, the financial panic view implies that it is not necessary to actually hand over good money to countries in crisis, but the international community must be ready to do so in order to prevent crises in the first place.

Theoretical Issues

Both the bad policy view and the financial panic view are at an early stage of development. However, the urgency of the global turmoil and the need to make public policy decisions make it necessary to compare the two positions.

It is fair to say that, at least for now, the financial panic camp has gained the advantage in the debate.⁹ Recently, most research papers on the subject have explored alternative versions of financial panic theory; perhaps more importantly, the policy implications of the financial panic view seem to have been dominant in the design of policy responses. This stance was most clearly expressed in the approval of a U.S.\$41.5 billion assistance package to Brazil last November. While Brazil had been losing considerable amounts of international reserves, it had been able to maintain a fixed exchange rate up to that point, and it had substantial reserves still left. Therefore, the purpose of the package was to reassure investors that the line had been drawn and that Brazil had sufficient international credit. Believing that such a package could have helped is consistent with the financial panic view but not with the bad policy view.

Why have financial panic advocates obtained the edge? After all, both positions sound reasonable and are consistent with some evidence, such as the fact already mentioned that financial liberalization and credit booms tend to precede crises. A deeper look, however, reveals that financial panic theory is better developed and explains a broader array of empirical observations.

On the theory side, one problem with the bad policy view is that it often imposes questionable assumptions on government policy. It postulates policies that not only are bad but also lack transparency and are not easily quantifiable, such as the existence of implicit government guarantees to borrowing. This characteristic seems critical for explaining why policies did not look bad before the onset of crises, as discussed above. However, while these policy assumptions make the theory work, they also make its applicability hard to evaluate.

Another questionable assumption is that bad policies must end when the resulting accumulation of losses reaches some given point. That limit is typically justified

on the basis that the governments' ability to issue debt must hit a constraint or simply that government willingness to assume private losses is bounded. However, it is hard to see how such an assumption is consistent with the very low amount of public debt outstanding in the Asian countries that went into crises in 1997–98.

More importantly, the bad policy view has not yet developed a satisfactory answer to the crucial question of why a government would pursue policies so undesirable for its citizens. Explaining crises requires not only, for instance, that there be government guarantees to private borrowing but also that investments financed with the borrowed funds be systematically lost. It may be that government guarantees induce excessive risk taking or because the funds are simply stolen, but, in either case, why would a government choose to provide those guarantees? If financial liberalization will exacerbate moral hazard problems by eliminating monitoring and oversight of the financial system, why liberalize? Equally troublesome is the implicit assumption

that a domestic government chooses, when crises occur, to bail out foreign creditors at substantial costs for its own citizens. This action can be justified, in principle, by the fact that defaulting on foreign debts is likely to impair further access to international markets. However, is the gain from such access important enough to outweigh the substantial costs associated with crises?

Perhaps one can answer the preceding objections by postulating that governments are driven not by the social good but by special interests. However, this case remains to be made in the literature; moreover, it is unclear what the theory would imply once the argument is taken to the sphere of politics.

The theory underlying the financial panic does not suffer from these shortcomings. Particularly, Chang and Velasco (1998a, 1998b) have shown that international illiquidity, which is necessary and sufficient for crises, may be an inevitable characteristic of an allocation that maximizes the welfare of domestic residents. Their argument holds in a laissez-faire environment, and hence it

While the theoretical advantages of the financial panic view are clear, its current dominance is largely due to its ability to explain observable phenomena better than the bad policy view.

6. In addition to the papers cited in the text, prominent examples are Calvo (1995) and Cole and Kehoe (1996).

7. This argument is based on Chang and Velasco (1998b).

8. Importantly, such an increase was likely to be a temporary problem since eventually the higher efficiency of investment made possible by financial liberalization would have materialized into a larger amount of marketable wealth.

9. See, for example, Furman and Stiglitz (1998) and Krugman (1999).

TABLE 3
Transparency Rank in Selected
Emerging Economies

Country	1996 Developing Economies Rank
Singapore	1
Israel	2
Chile	4
Malaysia	5
South Korea	6
Argentina	13
Thailand	15
Philippines	19
Indonesia	20
India	21
Pakistan	25
Nigeria	26

Source: Transparency International

cannot be criticized for imposing unnatural assumptions on policy. Moreover, their argument implies that international illiquidity has a good side: it enables a financial system to achieve socially desirable outcomes, although it may also result in the failure of the system.

Empirical Issues

While the theoretical advantages of the financial panic camp are clear, its current dominance is largely due to its ability to explain observable phenomena better than the bad policy view. However plausible, the bad policy view has not been successful at identifying where and when crises may happen. The policies that are key to that view, such as government guarantees, are prevalent not only in countries that had crises but also in countries that did not have them. What, then, determines which countries may be subject to a crisis? Also, government guarantees and other bad policies have presumably been in place for a long time. What explains the long record of phenomenal growth preceding the crisis in Asia? Why did the crisis happen in 1997 and not before? These are questions that the bad policy view has yet to answer.

Partly, these difficulties emerge because bad policy advocates have yet to confront directly the crucial question: when exactly does a country suffer from the bad policy syndrome? For example, which governments guaranteed external private borrowing at the time of the Asian crisis, and which ones did not? One could attempt to answer such a question by, for instance, examining relevant legislation in a number of countries to identify where bad policies existed. Then one could use the resulting

information to test the bad policy hypothesis. However, it seems that no such exercise has been performed.

In fact, some available data suggest that bad policies and crises may not be related after all. The existence of bad policies is probably strongly correlated with lack of transparency and government corruption, and the latter have been compared across countries. One would therefore expect crises to happen in the more corrupt countries; however, they apparently have not. Table 3, for example, displays how the Asean 5 economies and selected others fared in this respect in 1996 (that is, before their crisis) in a sample of twenty-six developing countries. The table is based on a ranking of business people's perceptions of corruption in each country: the larger the rank number, the more corrupted a country was perceived to be. According to the table, Indonesia and the Philippines were among the most corrupt developing countries, making it plausible that bad policies prevailed. However, South Korea and Malaysia were among the least corrupt emerging economies, yet they were hit by crises as well. Moreover, several countries perceived to be more corrupt than the Asean 5 were not struck.

Does the financial panic view provide a more compelling account of actual experiences? The answer is affirmative. It provides a clear criterion for deciding when and where a crisis may erupt: countries become subject to crisis when they become internationally illiquid. This dictum can be and has been tested against available data. As has already been discussed, evidence in Table 2 indicates that Asian countries were indeed internationally illiquid at the onset of their 1997–98 crises; in fact, the table suggests that their international illiquidity problem had been getting worse. As a complement, Table 4 presents the ratio of short-term external borrowing to international reserves for comparable Latin American countries that did not go into crisis during the same period. This table suggests that the Latin American countries had a much better international liquidity position than the Asian ones. Only Argentina's and Mexico's ratios exceeded one as of June 1997, but not by much, and their ratios had been falling. Hence, measures of international illiquidity help identify not only which countries went into crises but also which ones did not.¹⁰

The financial panic view is also better able to explain why recent crises spread from one country to another, a phenomenon called financial contagion. If the bad policy view was correct, a country would experience a crisis as a result of its own policy choices. While the timing of each crisis may be random, it is unlikely that many countries would have crises at the same time. In contrast, the financial panic view emphasizes that crises may or may not occur in internationally illiquid countries, depending on the expectations of short-term claimants on the financial system. Then, if these claimants lost confidence in, say, Thailand, the resulting Thai crisis may

TABLE 4 Asean 5: Short-Term Debt/Reserves in Latin America

	Argentina	Brazil	Chile	Mexico	Peru
June 1990	2.09	2.63	0.89	2.24	3.87
June 1994	1.33	0.70	0.51	1.72	0.38
June 1997	1.21	0.79	0.45	1.19	0.50

Source: Bank for International Settlements, International Monetary Fund

have led them to become more pessimistic about other Asian economies and to attempt to liquidate their financial holdings in those economies, triggering more crises. In other words, the financial panic view holds not only that internationally illiquid countries are vulnerable to crises but also that crises occur when expectations turn negative. Financial contagion is, therefore, viewed as reflecting contagion in expectations.

Finally, the financial panic view has an easier time rationalizing how a run by external creditors or by depositors in the domestic financial system is translated into the currency collapse that is characteristic of typical crises.¹¹ The key is that, if a run occurs, the domestic central bank will typically assist financial institutions under attack—that is, will serve as a lender of last resort. That assistance, however, makes it more difficult and often impossible to maintain a fixed exchange rate. Creating credit to help financial institutions implies issuing new domestic currency; however, if there is a panic, the holders of domestic currency will attempt to sell it back to the central bank at the fixed exchange rate. Hence the ability of the central bank to help domestic financial institutions is limited by its own international reserves; if and when these reserves are depleted, the central bank will be forced to stop supporting the domestic currency, whose value will then plummet.¹²

Conclusion

This article has reviewed the two main positions, one based on bad policy and the other on financial panics, that have been offered to explain recent crises in emerging markets. It has also argued that the financial panic view has been winning the debate, although the bad policy camp has some strong points as well.

Clearly, this discussion has only scratched the surface of the current controversy about crises, and new developments, both theoretical and empirical, may change the direction of ongoing work. Still, it may be useful to mention some policy consequences of accepting that financial panics are the main explanation for recent crises:

- Since international illiquidity is essentially a maturity mismatch of international assets and liabilities, measures that discourage such mismatch may be effective in preventing crises. One example is the imposition of barriers or taxes to short-term foreign borrowing, as has been the case in Chile.
- Financial liberalization, while socially desirable, should be engineered with care so as not to aggravate a problem of international illiquidity. Doing so means that some accompanying measures, such as close supervision of the balance sheets of financial institutions, are necessary complements to the deregulation policies typical of liberalization programs.
- In dealing with an ongoing crisis, the provision of international liquidity to the affected countries should be the primary concern. Otherwise, efforts directed at reducing budget deficits, enacting market-oriented reforms, privatization, and the like are unlikely to succeed no matter how well intentioned and how desirable they may be in the long run.
- There is a clear need for establishing an international lender of last resort. The obstacles to such a facility are large: financing it may be expensive, or moral hazard problems may emerge. However, the costs of not having it, in terms of lost output, increased unemployment and poverty, and worsening income distribution, seem to be much larger and justify the effort.

10. This informal discussion is in fact supported by formal econometric work: Radelet and Sachs (1998) find that the ratio of short-term debt to reserves is a good predictor of crises.

11. That financial crises and currency crashes are systematically linked has been argued convincingly by Kaminsky and Reinhart (1999).

12. This mechanism has been formalized by Chang and Velasco (1998a). Corsetti, Pesenti, and Roubini (1999) have provided an alternative argument from a bad policy perspective. In their view, a currency crash reflects a fall of aggregate money demand due to expectations of a higher inflation rate; the latter is, in turn, due to the monetization of the fiscal deficits resulting from a financial crisis. While this argument is theoretically sound, it is hard to believe that devaluations of 30 or 40 percent can be rationalized by changes in money demand in response to prospective inflation.

REFERENCES

- ASIAN DEVELOPMENT BANK. 1998. Overview Volume. Discussion draft for ADB/World Bank Senior Policy Seminar on Managing Global Financial Integration in Asia: Emerging Lessons and Prospective Challenges, March.
- CALVO, GUILLERMO A. 1995. "Varieties of Capital Markets Crises." University of Maryland. Photocopy.
- CHANG, ROBERTO, AND ANDRÉS VELASCO. 1998a. "Financial Fragility and the Exchange Rate Regime." National Bureau of Economic Research Working Paper 6469, March.
- . 1998b. "Financial Crises in Emerging Markets." National Bureau of Economic Research Working Paper 6606, June.
- . 1998c. "The Asian Liquidity Crisis." National Bureau of Economic Research Working Paper 6796, November.
- COLE, HAROLD L., AND TIMOTHY J. KEHOE. 1996. "A Self-Fulfilling Model of Mexico's 1994–95 Debt Crisis." *Journal of International Economics* 41, nos. 3–4:309–30.
- CORSETTI, GIANCARLO, PAOLO PESENTI, AND NOURIEL ROUBINI. 1998. "What Caused the Asian Currency and Financial Crisis?" New York University. Unpublished paper.
- . 1999. "Paper Tigers? A Preliminary Assessment of the Asian Crisis." *Economic Journal*, forthcoming.
- DOOLEY, MICHAEL. 1997. "A Model of Crises in Emerging Markets." National Bureau of Economic Research Working Paper 6300, December.
- FURMAN, JASON, AND JOSEPH E. STIGLITZ. 1998. "Economic Crises: Evidence and Insights from East Asia." *Brookings Papers on Economic Activity*, no. 2:1–114.
- INSTITUTE OF INTERNATIONAL FINANCE. 1998. *Capital Flows to Emerging Markets Economies*, April.
- KAMINSKY, GRACIELA, AND CARMEN M. REINHART. 1999. "The Twin Crises: The Causes of Banking and Balance of Payments Problems." *American Economic Review*, forthcoming.
- KRUGMAN, PAUL R. 1979. "A Model of Balance of Payments Crises." *Journal of Money, Credit, and Banking* 11, no. 3:311–25.
- . 1998. "What Happened to Asia?" Massachusetts Institute of Technology. Photocopy.
- . 1999. "Balance Sheets, the Transfer Problem, and Financial Crises." Massachusetts Institute of Technology. Photocopy.
- McKINNON, RONALD, AND HUW PILL. 1996. "Credible Liberalizations and International Capital Flows: The Overborrowing Syndrome." In *Financial Deregulation and Integration in East Asia*, edited by T. Ito and A. Krueger. Chicago: Chicago University Press.
- OBSTFELD, MAURICE. 1994. "The Logic of Currency Crises." *Cahiers Economiques et Monétaires* 43:189–213.
- RADELET, STEVEN, AND JEFFREY SACHS. 1998. "The East Asian Financial Crisis: Diagnosis, Remedies, Prospects." *Brookings Papers on Economic Activity*, no. 1:1–74.
- SACHS, JEFFREY, AARON TORNELL, AND ANDRÉS VELASCO. 1996. "Financial Crises in Emerging Markets: The Lessons from 1995." *Brookings Papers on Economic Activity*, no. 1:147–98.