

## **Reforming the Global Economic Architecture: Lessons from Recent Crises**

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RECENT TURMOIL IN INTERNATIONAL financial markets has raised a set of fundamental questions for the global community: Is the set of international financial arrangements, established after the Great Depression and World War II and modified after the abandonment of the gold standard in 1973, up to the challenges of the twenty-first century? Are minor modifications (such as slight changes in the governance of the international financial institutions, increased transparency, or surveillance) all that is required to adapt these institutions to the needs of modern economies, or are more fundamental changes necessary? Today, although much has been proposed, discussed, and argued, no consensus on desirable changes has yet been reached. In the meantime, what can countries, especially the poor, the small, and the less-developed, do to protect themselves from the seeming ravages of storms brought on by international financial instability?

The subject is complicated, and in the time allotted to me, I cannot do it justice. Rather than endeavoring to provide a comprehensive treatment, I shall summarize my views in 10 basic points, followed by three important methodological observations.

We should keep in mind that the success of a development or stabilization program must be assessed by its impact on the livelihood of the concerned individuals, not by whether the exchange rate has stabilized! Our objective should be clear: the welfare of the citizens in the affected country, with due attention to distributional concerns. A program cannot be hailed a success if the exchange rate is stabilized, but the country falls into a deep and prolonged recession. One cannot count a program a success until unemployment has returned to normal levels and growth has resumed. Ascertaining success is made ever more problematic by hypothesizing on the counterfactual—that is, what would have happened in the absence of the program? Perhaps output would have fallen even more, and unemployment risen even more. But since the advent of modern macromanagement, governments in developed countries have been able to shorten downturns and to mitigate their severity by taking strong countercyclical measures.<sup>1</sup> Those advocating contractionary policies, for instance, in the event of a crisis that in any case would have dampened the economy's strength, bear a heavy burden of proof: They must either show that more expansionary

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<sup>1</sup> See, for example, Stiglitz (1997a, 1997b).

policies were not feasible or that the contractionary policies generated stronger long-term growth. Evidence on growth trajectories in general provides little evidence in favor of the latter hypothesis.

With these caveats in mind, let me turn to 10 key policy points.

**1. *The international financial architecture has exhibited enormous fragility over the past quarter century.*** Financial and currency crises have hit with increasing frequency, at high budgetary costs to the governments that inevitably try to resurrect their economies. But the cost is high; for years after the crisis, growth is slower and unemployment higher.<sup>2</sup> By one reckoning, 80 to 100 countries have faced a crisis since the mid-1970s.<sup>3</sup>

What inferences can we make from this experience? To introduce one of the two metaphors that I will use frequently in the subsequent discussion: If there is a single accident on a road, one is likely to look for a cause in the driver, his car, or the weather. But if there are hundreds of accidents at the same bend of the road, then questions need to be raised concerning the construction of the road itself. Roads need to be designed not for perfect drivers, nor for drivers trained to drive on race tracks, but for ordinary mortals. If average drivers repeatedly find the curves too difficult to navigate, it is time either to reengineer the design of the road or to impose regulations on the cars that drive on it.

**2. *Capital and financial market liberalization are systemically related to this vulnerability.*** Both theory and empirical studies confirm this conclusion. Premature financial market liberalization—for instance, before the appropriate regulatory structures are in place—frequently leads to excessively risky lending by banks. Empirical studies show that the probability of a financial crisis is particularly high in the five years following financial market liberalization.<sup>4</sup> The recent crisis in Asia followed this familiar pattern. Given the Asian countries' commitment to continue with financial market liberalization, there was no obvious way in which to manage the macroeconomic consequences of the surge of financial capital, which left even more suddenly than it entered.<sup>5</sup>

Advances in economic theory (e.g., Hellman, Murdock, and Stiglitz (1996)) show that reliance on capital adequacy standards, a common feature in countries that have engaged in financial market liberalization, is not Pareto effi-

<sup>2</sup> For the growth result, see Caprio (1997). Economic downturns leave a long-term adverse legacy, among other ways, through the attrition of human capital, which has been emphasized in the literature on the hysteresis effect and may be a factor in the sustained high levels of unemployment in Europe. See Blanchard and Summers (1986).

<sup>3</sup> Caprio and Klingebiel (1996) identify banking crises in 69 countries since the late 1970s, which only includes countries with sufficient data. They estimate that the inclusion of transition economies would add crises in at least 20 more countries.

<sup>4</sup> Kaminsky, Linzondo, and Reinhart (1998). See also the path-breaking study of Chile's 1982 crisis by Diaz-Alejandro (1985). In the context of the Scandinavian crises see Steigum (1992) and Kiander and Vartia (1996).

<sup>5</sup> For a more detailed discussion of the crises, see Furman and Stiglitz (1999).

cient. It is particularly problematic to rely on capital adequacy standards in economies with poor information systems and facing high risks. (Because of their smaller size, most LDCs are less diversified than larger economies and thus face greater risks.) The problems of regulation in the aftermath of liberalization are exacerbated by the drain on trained personnel, as the booming private financial sector is able to outbid the public sector. And the instabilities arising from excessive reliance on collateral lending, an important feature of the Asian economies, have long been known: Such lending practices reinforce a boom, but when collateral values collapse, defaults soar and credit is constrained, furthering the decline in asset prices. These natural instabilities are only reinforced by excessive reliance on capital adequacy standards, without the sophisticated reliance on forbearance-cum-tightened regulatory supervision associated with more advanced economies. The beginning of the downturn leads to a few bankruptcies, putting banks below the required capital adequacy standards. In a pessimistic environment, banks find it impossible to raise additional funds, thus forcing them to cut back on lending. But as they all do this, bankruptcies and the nonperforming loans soar, creating a vicious cycle.

Interestingly, many of the problems might not have arisen in the previous regulatory regimes. Thailand, for instance, before it felt pressure to liberalize, had imposed limitations on bank lending to speculative real estate. It had been aware that such lending is a major source of instability and, moreover, it was still under the impression that investing in employment—creating factories—provided better foundations for a growth strategy than building empty office buildings. But under pressure from those who pushed on it the doctrines of the liberalized market, it succumbed to the judgment of the market with disastrous consequences.<sup>6</sup>

There is a certain irony in this evidence of increased instability: One of the arguments *for* capital market liberalization is that it leads to increased diversification, which in turn makes the country less vulnerable. In fact, what diversification occurred was mainly within East Asia and, as it turned out, the shocks were highly correlated (with the correlation perhaps exacerbated by the policies undertaken). In any case, the increased vulnerability posed by liberalization far outweighed the benefits of diversification, a result also observed elsewhere in the world.

***3. Although capital market liberalization clearly portends greater risks, it has not brought commensurate benefits in terms of economic growth.*** Again, both theory and evidence support this conclusion. Rodrik

<sup>6</sup> Another metaphor has become fashionable for small, less developed countries embarking on financial and capital market liberalization. It is likened to a small boat setting sail on a wild and rough ocean—even if well steered and solidly constructed, it is vulnerable to being hit broadside by a wave and capsizing. And if the captain has not had proper training and if holes have not been fully repaired (if capital market liberalization proceeds too fast after financial market regulation), then a speedy and disastrous outcome is even more likely. Indeed, a design to make the boat faster and sleeker at the same time makes it less stable. In Asia, there simply was no time to take advantage of the allegedly improved design before disaster struck.

(1998) shows that neither investment nor growth was associated with capital market liberalization using the same kind of cross country regressions that typically show significant gains from trade liberalization. And of all the regions in the world, East Asia was the least likely to gain from capital account liberalization; with its high savings rate, it was hardly in need of further capital infusions at the margin. The low returns that might be associated with these marginal investments made the expected returns low, and left the risks high.

There are a number of reasons more generally why the view that capital account liberalization gives rise to enhanced growth should be regarded with skepticism. Liberalization has, in general, focused on opening a country to short-term speculative flows; but precisely because of the volatility of such flows, it is hard to base productive long-term investments on these funds.

In assessing the various sources of vulnerability, one factor has received increasing attention: the ratio of short-term foreign debt to reserves. A large fraction of countries in which that variable exceeded unity experienced crises. This variable did not appear in earlier studies of crises because economists had pointed out that any domestic asset could be converted into foreign currency under a regime of complete convertibility, so *existing* short-term foreign liabilities did not really represent the magnitude of the potential “threat.”<sup>7</sup> That the variable has recently attained prominence illustrates the potential *negative* effects of short-term borrowing. Consider a poor, small country in which a firm decides to borrow \$100 million from an American bank at 18 percent interest. Prudent behavior on the part of the country then implies that it must increase its reserves by \$100 million—likely held in the form of U.S. Treasury bills. In effect, the country is then borrowing from the United States at 18 percent and lending at 4 percent—hardly a strategy that is likely to engender domestic growth, though it may resoundingly benefit the United States, among the most ardent advocates of capital account liberalization.

The most important reason that capital and financial market liberalization may not be related to growth is that it enhances instability; instability, as we noted in lesson one, has significant adverse effects on growth.<sup>8</sup>

**4. *The adverse effects of financial and capital market liberalization can, in turn, be related to the fact that there are marked discrepancies between social and private returns and risks.*** East Asia’s

<sup>7</sup> On the other hand, the result is consistent with multiple equilibria sunspot models: If everyone believes that a ratio is believed by everyone else to be associated with a crisis, then when they see the variable pass the threshold, they withdraw their funds, leading to a crisis. For early models of multiple equilibria (including sunspot equilibria), see Stiglitz (1972a) and Shell (1977).

<sup>8</sup> There are a variety of reasons for this: A pattern of instability implies greater riskiness for investment, discouraging one of the main sources of growth. In economic downturns, investments in R&D and other productivity enhancing expenditures, as important as they are for long-term growth, tend to be curtailed. See Greenwald and Stiglitz (1989).

crisis was related to private sector borrowing. Even Thailand's large borrowings should not have been a problem because the borrowing was being used to finance private investment, which presumably yielded a return in excess of the cost of borrowing. Only if one believed that there was a government subsidy (either explicit, or implicit, in the form of a presumed bailout) should one have been worried—that is, *if one believed in the efficiency of market allocations*. But the experience of East Asia has confirmed lessons from experiences elsewhere: There are large systemic risks imposed on the economy by financial sector weaknesses and the surges in capital flows associated with capital account liberalization. The costs of these disruptions are felt not only by the borrowers and lenders who engage in the transactions, but also by workers, small businessmen, and others throughout the economy.

**5. *It is intellectually incoherent to argue for bailouts and highlight the importance of contagion and systemic risk but not to try to address the underlying source of the problem.*** The previous point argued that there are externalities associated with private, international, short-term borrowing. If there were no such externalities, then it would be hard to defend bailouts, and there would be no worry about contagion. Just as we now recognize that the production of steel may give rise to an important externality—air pollution—and that the externality necessitates an important public role in trying to “force” (through price or other forms of regulation) less pollution, it is imperative to recognize the externalities associated with these short-term private capital flows. The consequence of internalizing this externality in the former case may well be less steel producing—essentially a redeployment of resources to better reflect the social costs and benefits of the activity rather than relying on the distorted market allocations in which important social costs are ignored. This, too, should be the case for the latter example. The widespread worry that interventions might reduce the flow of capital is as misguided as the worry that discouraging air pollution might discourage the production of steel.

**6. *The thrust of the interventions should be to stabilize capital flows, for it is the instability of such flows which generates the high costs and which limits their benefits.*** Again, let me analogize with a metaphor: Without a dam, the melting of the snows at the top of a mountain may give rise to disastrous floods, resulting in death and destruction. A well-designed dam will temper the flow of water, but it will not stop the movement of water from the mountaintop to the seaside. However, by stabilizing the flow, the dam serves to reduce and perhaps eliminate the deathly and destructive aspects of the torrent—indeed, the dam may convert the water into a powerful, productive force.

This has an important implication: A good dam does not have to stop all flows, even temporarily, to be of considerable value.

**7. Frequently, the key to stabilization is a comprehensive program.**

Elsewhere, I have outlined a three-pronged program.<sup>9</sup>

1. *Eliminating the government distortions that have encouraged short-term flows.* (Thailand had a facility that had the effect of directly facilitating those flows; Korea's restrictions on long-term flows indirectly encouraged short-term flows.)
2. *Strengthening financial institutions.* This in turn has a number of ingredients such as improved transparency; broad and effective bank regulation, including good, risk-adjusted capital adequacy standards (flexible and adapted to particular circumstances of each country); speed bumps, such as limiting the rate of increase of lending; and exposure limits, both direct and indirect (on the firms to which the banks lend)
3. *Direct interventions to stabilize the flows of capital not mediated through the banking system.*

It is important to recognize that the first two sets of measures, as important as they are, are both difficult—especially for less-developed countries—and are far from sufficient to inoculate countries against the kinds of instabilities that have been so prevalent in the last quarter of a century. Transparency in the form of mark-to-market accounting (requiring banks to record all assets at their current market value), for instance, is resisted today in the United States, even in the aftermath of the S&L crisis (which was in part attributed to poor regulation, including inadequately transparent information systems). There was no reform, even after it was recognized that failing to use marking to market practices not only reduced transparency but led to distorted investment policies that potentially and significantly increased the risk exposure of banks.<sup>10</sup> Even under the best of circumstances, obtaining the relevant data may be difficult—and is becoming increasingly so.

Note that in standard competitive theory (as articulated for instance by Arrow and Debreu (1954)), the basis of the belief in the efficacy of market processes assumes that all the relevant information is conveyed by prices. The kinds of quantitative information being called for would, under standard competitive assumptions, simply be irrelevant—no one is calling for steel firms to release their sales figures. This highlights the difference between markets for commodities such as steel and finance markets, and it undermines the oft-heard argument that free mobility of capital is just as welfare enhancing as free trade in goods. Financial markets are different. Similarly, even countries with advanced institutional structures cannot claim an impressive record in managing their banking systems—witness the recent financial crises in the United States, Scan-

<sup>9</sup> See Stiglitz (1998a, 1998b).

<sup>10</sup> Similarly, the well-known—and successful—opposition of U.S. government officials to FASB's proposals for more transparent accounting frameworks for stock options well illustrates the political problems that such proposals frequently encounter. See Stiglitz (1992).

dinavia, and Japan. No country has adequate risk adjustments for capital adequacy standards or deposit insurance premia. Similarly, the fact that the last major set of financial crises occurred in Scandinavia, countries noted for their transparency, suggests that transparency by itself is not sufficient.

The increased use of derivatives—the risk implications of which are often very difficult to assess—and their increasing complexity have further complicated attempts at transparency and improved regulation.<sup>11</sup>

Let me be clear: Improved regulation and increased transparency are clearly desirable. But we should not underestimate the difficulties or overestimate the effectiveness of these measures. Those who think that regulation and transparency are all that are needed are looking for cheap and easy solutions to a complex and serious international problem. Or, alternatively, they seek solutions that are ideologically compatible with the belief in “free markets”—in spite of the evidence of the importance of market failures described above (see point one).

That a comprehensive program needs to go beyond bank regulation is evidenced by the experience of Indonesia, where two-thirds of the domestic borrowing was undertaken by corporates. To return to the dam metaphor, stopping bank borrowing from abroad may be like putting your finger in a dike—it may plug up one hole, but the water will find a way around. If there are economic incentives (or misguided perceptions) that lead to a desire to borrow abroad, corporates that can will do so, even if banks cannot do so on their behalf.<sup>12</sup>

**8. *Although a comprehensive program is essential, its features need to be adapted to the situation in each country.*** In particular, the regulatory framework for LDCs may well differ markedly from those of more-developed countries because the risks are greater, the regulatory capacities are weaker, and information is poorer. Developed countries have been moving to monitoring banks' risk management systems, but direct controls should continue to play a more prominent role in LDCs. Thus LDCs may need to impose more stringent regulations on lending—for instance on speculative real estate. They may need to impose speed limits (restrictions on the rate at which loan portfolios can grow). They may need to limit the use of derivatives.

<sup>11</sup> In several instances, firms believed that they had a covered position, only to discover that the party providing the cover had gone bankrupt. Thus, bank regulators need not only to look at “exposure” but at the portfolio position of those providing cover, and the correlation between credit and market risks. The difficulties of doing so—and the disadvantaged position of regulators—should be apparent. The recent failure of bank regulators in the United States to prevent a lone hedge fund from borrowing sufficient amounts that its open positions posed systemic risk to the global financial system should make us less than sanguine about a strategy focusing on LDCs improving their transparency or regulatory capacities enough to prevent future crises.

<sup>12</sup> At the same time, strong bank regulation—including restrictions on exposure of firms to which the banks lend—can have a major impact on aggregate exposure. So too could appropriate risk adjustments for capital adequacy standards and deposit insurance, which presumably would induce banks to charge higher interest rates to firms that had high exposure. Current risk adjustments fall markedly short of the mark.

Modern bank regulation recognizes the inefficiencies—and even the dangers—of excessive reliance on capital adequacy standards, and the problems in doing so are particularly acute for LDCs. Matters become even worse if excessively stringent capital adequacy standards are imposed (too rapidly) in an economy in recession, where many banks will naturally fail to meet those standards. The systemic credit contraction to which that can give rise may be self-defeating for as banks contract credit to meet the capital adequacy standards (because in the midst of a recession, they are likely to find it difficult to raise new capital), more firms go bankrupt, only increasing the fraction of loans that are nonperforming. In a dramatic example of the fallacy of composition, a policy designed to ensure strong banks—when an isolated bank has problems—actually undermines the strength of the banking system when there are systemic weaknesses. Countries that have successfully managed financial crises and the accompanying recessions have engaged in “forbearance”—*temporarily* weakening (in effect) capital adequacy standards, while they have increased the intensity of supervision of transactions.

**9. A key part of the reforms to stabilize the international financial system is a fundamental reform of bankruptcy, including what I call a “super chapter 11.”** The reform of bankruptcy law needs to recognize the difference between systemic bankruptcy, when a substantial fraction of the firms in an economy are bankrupt, and an individual bankruptcy, when an isolated firm cannot meet its obligations. The inferences that can be drawn concerning managerial competency are dramatically different in the two situations—few firms in any country could survive depreciations of currency and increases in interest rates of the magnitude that occurred in East Asia. The presumption should be that existing management continue in place; the burden of proof should be on creditors to establish that there was a persistent mismanagement of the firm’s assets. This is much like chapter 11, in which management typically continues, with a simple rearrangement of claims (with creditors typically taking some equity shares, though the original equity owners are seldom fully wiped out). In a “super chapter 11” there would be an even greater burden of proof on creditors if they seek alternative arrangements, and perhaps even greater clarity in the specification of default options.

It is not only that the information conveyed by the two types of bankruptcy differs. The costs of the standard bankruptcy procedures can also be enormous when applied to systemic bankruptcy. When there is systemic bankruptcy, the frequent delays common in standard bankruptcy proceedings would impose huge social costs. A super chapter 11 should be structured so that corporate reorganizations could occur much faster and at much lower costs than even a standard chapter 11.

The bankruptcy would be a (decentralized, private sector) analogue to a standstill. And the bankruptcy law would act as a circuit breaker in the downward spiral that has characterized East Asia. Now, as the exchange



rate falls, more firms become nonperforming in the loans, weakening the banking system, leading to a credit contraction, which reinforces the downward dynamics. With the bankruptcy standstill, the losses of domestic players are limited. (To be sure, a super chapter 11 might lead to higher interest rates—so that the cost of borrowing may more accurately reflect some of the true social costs. See point 4 above.)

But just as bank regulation needs to be adapted to the situation in each country, so too does bankruptcy law. Indeed, there is no single “Pareto dominating” bankruptcy law. There are trade-offs between the interests of lenders and borrowers, and even between domestic lenders and foreign lenders.

I have said nothing so far about grander changes, such as proposals for creating a “lender of last resort.” Though this is not the place for a comprehensive treatment of what is, after all, a highly complicated subject, the following points do seem worth making:

- Having a lender of last resort is not sufficient to protect an economy. The Federal Reserve Bank was created as a lender of last resort, considerably prior to the Great Depression. It was only when the lender of last resort was accompanied by deposit insurance and tightened supervision that crises were prevented (and one without the other can actually make a crisis more likely, as the S&L debacle so clearly demonstrated). But in the international context, proposals for a lender of last resort are seldom accompanied by something that would pass as an analogue to deposit insurance, with a tax imposed on lenders to support the “bailout” fund.
- There are, moreover, questions concerning whether a lender of last resort is “necessary,” if governments really permit flexible (market-determined) exchange rates and adopt adequate bankruptcy laws. Mutual funds do not need a lender of last resort simply because they do not have a “first-come, first-serve” repayment at “fixed rates.” Countries are, in this sense, much more like mutual funds than they are like banks, assuming flexible exchange rates. The funds are needed to support the exchange rate—to give those few extremely wealthy individuals in Russia, for instance, time to take out their money at the high exchange rate. When one recognizes that billions and billions have been misspent by countries in the vain attempt to support their exchange rate—dollars that in the end come out of the pockets of the countries’ taxpayers—the small sums lost in Harberger triangles and other forms of microinefficiencies (so often railed against) pale in comparison.
- The essential ingredient of a “lender of last resort” is that there should be a degree of automaticity in access to funds to countries that “qualify.” But in our rapidly changing world, can that be assured? A government can gamble and lose its entire reserves overnight with derivatives. Should such a government be entitled to a bailout, simply because it had previously acted in prudential ways? In the end, judgment calls will be necessary. And how different will those judgment calls be from those currently being made?

- Moreover, the signal that a country does not qualify, or has changed from “qualified” to “nonqualified” status could itself set off a crisis. Concern about this has led to a shift from dichotomous policies to more continuous ones: Countries that are “more qualified” get access to funds “more easily” or on better terms. Can such a system be run in a transparent way? The less transparent, the less “rule bound,” the less “automaticity” this system has, the less will the lender of last resort function be served. Remember, the principle behind the lender of last resort is that the knowledge that there is a large stock of funds available to support a currency deters an attack. But the greater the discretion, the less assurance there is that there is a large stock of funds available, and hence the greater the incentive for an attack.
- Moreover, we now recognize the central role capital flight plays in currency crises. Given the huge amounts that could leave a country under an open regime, there is a real question of whether any fund that is likely to be amassed will provide sufficient assurance to reduce substantially the likelihood of an attack.
- I noted earlier that central to the success of a lender of last resort is good supervision. Earlier, I detailed the problems LDCs face in bank supervision. How supervision is run is not, however, just a technical matter, which is why governments such as the United States have insisted that, while supervision should remain “independent,” it also remain politically accountable. The U.S. Comptroller of the Currency reports directly to the Secretary of the Treasury. Historically, the United States and other countries that have managed their way through cyclical fluctuations well have engaged in a certain degree of forbearance, compensating for the forbearance in capital adequacy standards with tightened supervision of transactions. I doubt that the United States would be willing to delegate supervisory responsibility to a group of international bureaucrats, only remotely politically accountable. Will other countries be willing to do so? Perhaps, if in doing so they can purchase greater credibility for their banking systems and greater “automaticity” of funds in the event of a crisis. But the answer is by no means obvious. Note that financial crises are only one of many stimulants for a currency crisis (and hence the “need” for a bailout). How broad will the reach of supervision need to be? It takes an enormous amount of confidence in international institutions to cede the kind of authority that is required for a lender of last resort to work effectively. It is not clear that we are at that stage yet in the evolution of global economic governance.

**10. Most importantly, there needs to be a congruence between a country’s exposure to risks, its ability to reduce (or its tendency to exacerbate) those risks, and the provisions it has made to insulate the most vulnerable from the consequences of those risks (including its safety nets).**

Earlier, I described small, less-developed countries in the international capital markets as small boats in a wild and rough sea: Even if well steered and strongly constructed, they are likely to be capsized by a sufficiently large wave. To be sure, if they are not well steered, and if there are holes in the boat, their survival is even more precarious. This metaphor suggests that strong precautions should be taken before going out to sea. Precisely the opposite has occurred. The boat has been redesigned to make it sleeker and faster (assuming it could survive!), which renders it more unstable, reducing survival chances further still. Worse still, it has been set out to sail in the roughest part of the sea, in the worst conditions, before safety vests have been put on board, and before the skipper has had a chance to be trained for the new design. The consequences have been all too predictable—and at great human costs.

Before concluding, I want to spend a minute on three methodological “lessons.”

**A. It is imperative that policymakers better integrate financial and real economics.** As has been noted repeatedly, at the heart of the East Asia crisis were private capital flows and a worry about bankruptcy and default. If there were not such worries, Western banks would have been more than willing to roll over their loans, especially at the high interest rates being offered. Thus, not only is bankruptcy of a first-order importance, but policymakers need to focus on how policies being pursued affect the likelihood of bankruptcy—it is a key endogenous variable. What is remarkable is that more than 25 years after micromodels began emphasizing the key role that bankruptcy plays in modern capitalism (see, e.g., Stiglitz (1969, 1972b) and Greenwald and Stiglitz (1992)), more than 20 years after the link between interest rates and bankruptcy was clearly articulated (Stiglitz and Weiss (1981)), and 15 years after these ideas were embedded in macromodels (Greenwald and Stiglitz (1984, 1993) and Stiglitz and Weiss (1992)), standard macro-textbooks often do not even mention bankruptcy in the index.

Too often, the financial sector is summarized in a money demand equation. Doing so not only misses the complexity of the financial sector, but can also lead to misguided policies. Indeed, the standard reduced-form relationships between money and aggregate output, summarized in the LM curve, all too often are markedly altered in the event of a financial or currency crisis, even of the mild variety experienced in the U.S. S&L debacle.<sup>13</sup> If this is true for a relatively mild crisis, affecting a small fraction of the financial sector, how much more so is it likely to be the case for the kind of major upheaval experienced, for instance, by Indonesia?

**B. One should be wary of anthropomorphizing the market and of the prognostications of armchair market psychologists.** The market consists of many players, with different portfolios, risk preferences, and in-

<sup>13</sup> This is now recognized to be an important contributor to the Fed's failure to take appropriate actions to stave off the 1991 recession. See Stiglitz (1992).

formation. There is enormous heterogeneity of beliefs, so much so that a piece of information may at the same time make investments in a country more attractive to some and less attractive to others. In particular, economic downturns, while reassuring to foreign investors (though even this is questionable), would normally be expected to generate domestic capital outflows. Increased risk induces domestic residents to diversify. Although they cannot easily diversify their human capital, they can move out more of their physical wealth. Time after time, we have seen domestic capital flight as an important contributor to a crisis and its perpetuation.

One should be suspicious of anyone who says, “The market expects. . . .” I have never met “Mr. Market,” and, as a former market participant, I can only say that frequently my expectations differ from those of the armchair market psychologists. Good analyses must take into account the diversity that makes a market, paying due attention to the differences between those in the country and those outside it.

**C. We need to reach beyond anecdotes to construct coherent theoretical models and undertake empirical testing.** Anecdotes are useful, both as teaching tools and in helping to guide our thinking. Journalists, who have to explain the world in simple terms, can be forgiven for relying on anecdotes in interpreting events. But economists and social scientists more generally should be held to a higher standard. Do higher interest rates lead to a stronger currency? Theoretical models can offer insights into the circumstances in which this might or might not be the case, and empirical work can cast light on whether these predictions are borne out in practice. The evidence is far from overwhelming in support of the “conventional wisdom” that higher interest rates are necessary, if not sufficient, for maintaining the strength of the currency.<sup>14</sup> The theoretical prediction that higher interest rates may so weaken an economy and increase the probability of bankruptcy that rather than attracting capital (net) they may induce capital to leave, seems to have been borne out in the data—and evidenced in the East Asia crisis.

Not only do anecdotes seldom support only one side—adherents of contrary positions can each proffer anecdotes in support of their opinions—but their interpretation is often elusive. In the East Asian context, the Mexican experience is often cited: it “stayed the course” and quickly recovered. But Mexico was smart; it chose as its neighbor and major trading partner a country with a booming economy and a strong financial system, with whom a major trade and investment treaty had just been signed. The countries of East Asia did not show as much wisdom, choosing as their trading partner a country going into its most severe recession in half a century and with a fragile financial system. To what extent should we credit “staying the course” and resolute action for the recovery? And to what extent should we credit “choosing one’s neighbor”? My interpretation places a far greater weight on the latter; evidence for this can be gleaned by looking at the source of recovery—exports to U.S. firms. In-

<sup>14</sup> See Kraay (1998) and Furman and Stiglitz (1999).

deed, four years after the crisis, the domestic sector remains in weak shape. Considering one of the often reiterated lectures to the East Asian countries reinforces the point: Recovery will require addressing the weaknesses in the financial system. By contrast, there are repeated newspaper reports documenting the continuing deep weaknesses in the Mexican financial system, with non-performing loans—four years after the crisis—still exceeding those in several of the East Asian crisis countries.

Every cloud has a silver lining, however thin: The disaster in East Asia, like the Great Depression, will prove a rich source of Ph.D. theses for decades to come. By examining such “extreme” events, we gather insights into the workings of the economy in more normal times. The story of East Asia (and the subsequent crises of 1998) is far from over, and it would be premature to reach any final verdicts. I suspect, however, that there will be a growing consensus in support of the basic lessons that I have outlined in this talk.

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