

Department of Economics

Towards a New International
Economic Architecture:
Principles and Policies

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EIB LECTURE SERIES



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Printed in Italy in December 1999
European University Institute
Badia Fiesolana
I-50016 San Domenico (FI)
Italy

**Towards a New International
Economic Architecture:
Principles and Policies**

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This is the text of the second lecture of the European Investment Bank Lecture series, given by Joseph E. Stiglitz, Senior Vice President and Chief Economist of the World Bank, on 15 October 1998. The Department of Economics is very grateful to the EIB for the endowment of this series.

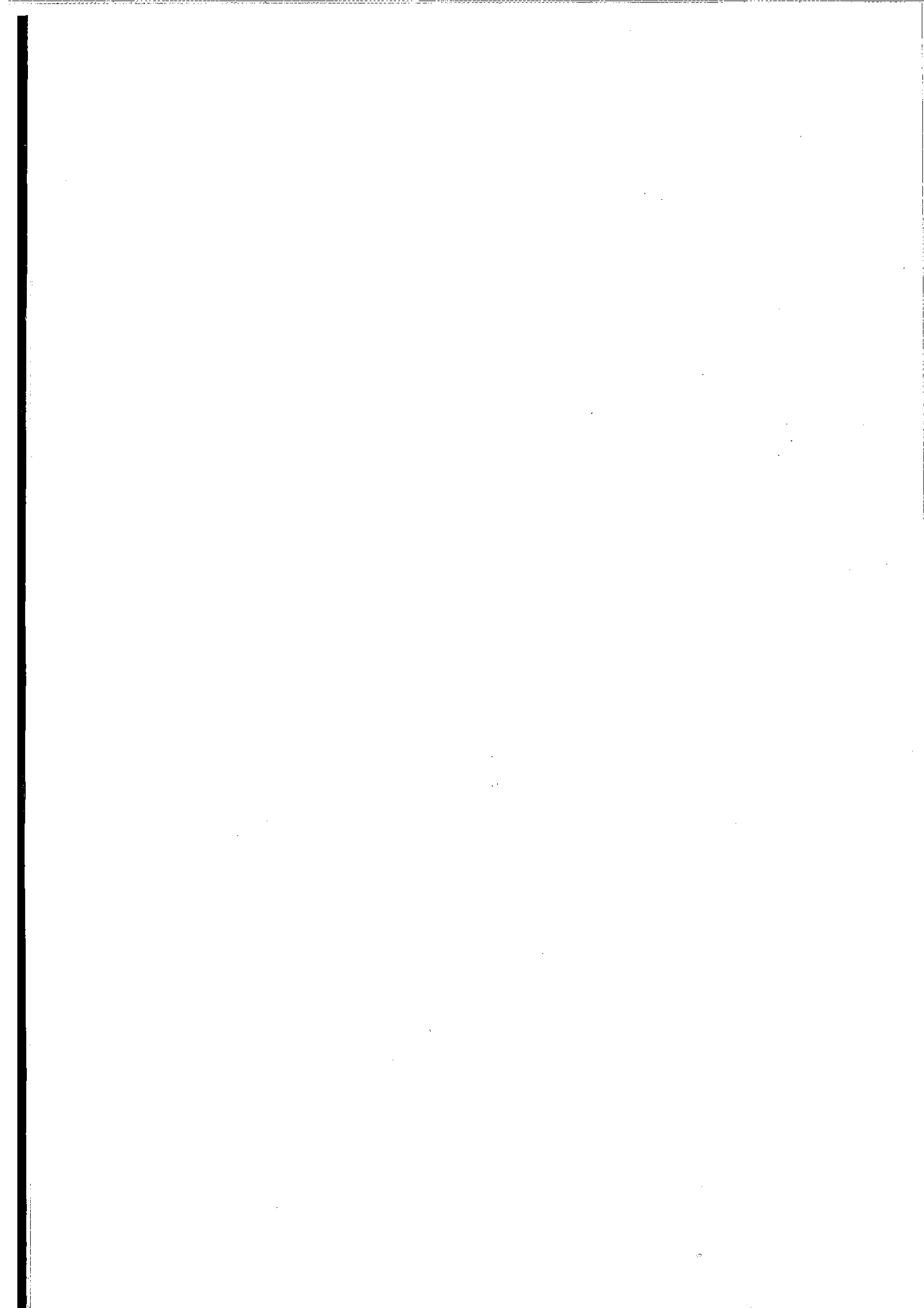
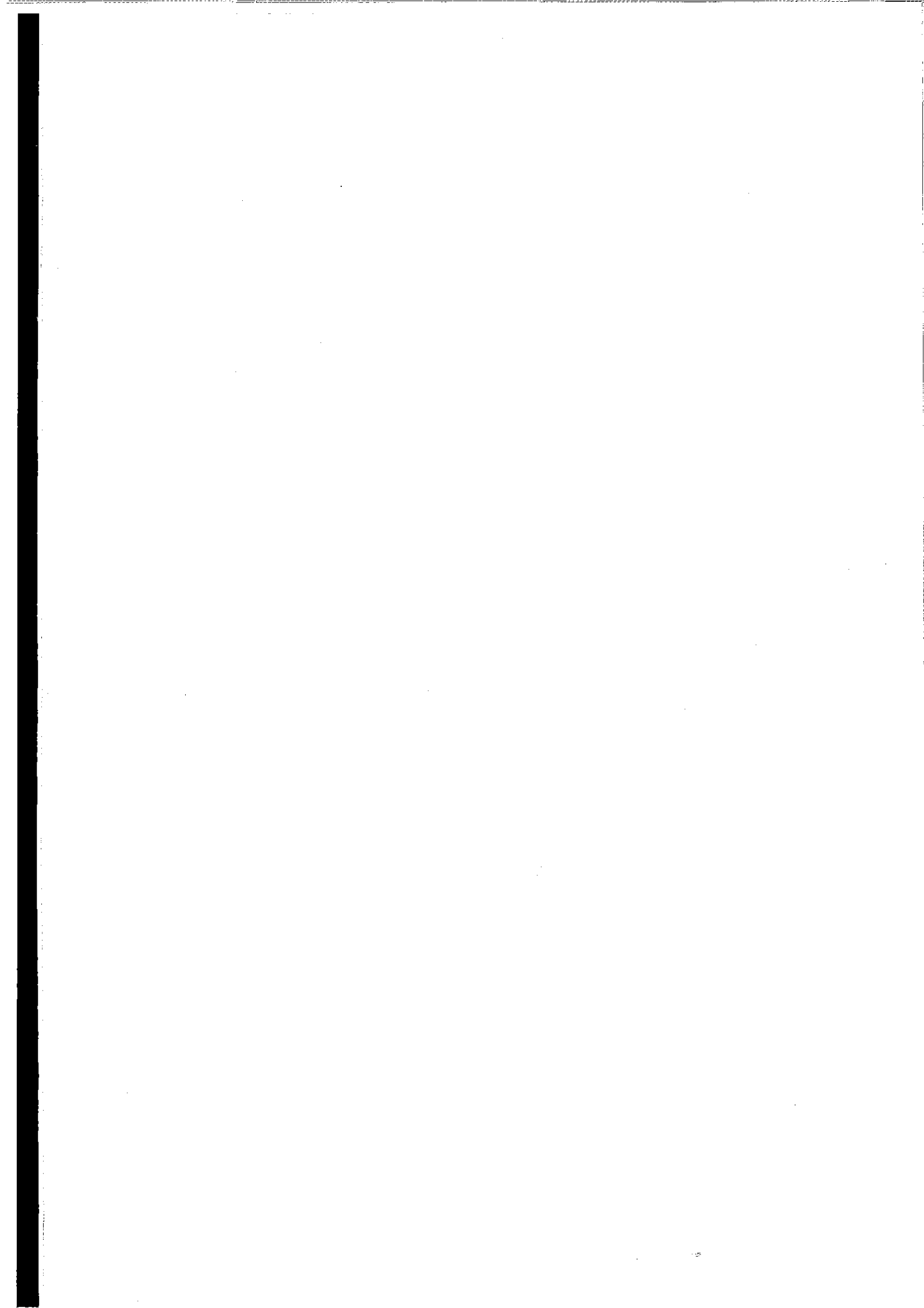


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Towards a New International Economic Architecture: Principles and Policies

Joseph E. Stiglitz

We have seen the worldwide financial crisis of 1997 and 1998 mushroom since its modest beginnings in Thailand on July 2 of last year. It flared up in Indonesia last October, spread through "contagion" to Latin America and Russia later that month, built through the crisis in Korea in December, and finally reached full conflagration in the summer of 1998. Then, the collapse of the ruble and soaring risk premiums threatened to bring down currencies even in countries that had seemingly pursued sound economic policies. This sequence of events has led to a re-examination of fundamental questions concerning the international economic architecture. While all would recognize now that unrestricted capital flows are not an unmitigated blessing, some are asking a more probing question: Are the net benefits of such flows worth the costs? Have countries put into place institutions and policies that can cope with the risks they impose? Have we proceeded with reforms in a balanced way, so that developments in our ability to absorb and respond to shocks could keep pace with the increases in risks to which we have exposed especially the least developed countries? And most importantly, has the international community put into place institutions and policies that can help stabilize these flows and effectively control and limit the damage the crises when they occur?

Points of consensus

In this lecture, I want to push forward the current international debate on these issues. That debate has all too often been dominated by ideological – and in some cases intellectually incoherent – positions, rather than carefully reasoned analyses based on consistent theories and available evidence. Fortunately, there is a growing consensus concerning at least the intellectual framework within which these questions should be addressed. I want to try to articulate this framework, which can be summarized in the following six propositions:

1. International capital markets are rife with market failures: information is imperfect; instabilities in capital flows have systemic effects that harm even those who have not actively participated in that market; imperfect risk markets mean that

individuals cannot insure against these risks; and for these and other reasons, social and private risk diverge markedly.

2. These market failures are not just a matter of academic interest, but have real consequences. They are associated with high levels of economic instability, with extended periods of severe underutilization of resources, all worsened by an inability to distribute efficiently the burden of the resulting risks.¹

3. A variety of government actions (at the national and international levels) can help mitigate these market failures and their consequences. Market failures have real consequences.

4. In many cases, policies of governments and the international community may have served to exacerbate the market failures, even if at the same time, some of these policies worked to mitigate their consequences. (This is the so-called "moral hazard" problem.)

5. Even with the best policies and institutions, crises will occur. Our objective should be to try to reduce their frequency and magnitude and mitigate their consequences.

6. The policy responses to the financial crises of the past year largely failed in their objectives, including crisis containment.

Areas of controversy

But there remain important controversies:

1. What are the most important market failures, and how large are they?

2. What role do "government" failures play, and what can we do to overcome those failures? Here, I am interpreting "government failures" broadly, so that it includes both the moral hazard induced by poorly designed bailouts and mismanagement of

¹ For instance, while the typical recession entails only a modest reduction in GDP, the consequences are perceived to be far more severe than this number might suggest, partly because the incidence of the reduced demand for labor hours is not evenly distributed, but also partly because there are high social costs arising from the absence of adequate mechanisms by which the risks can be distributed widely and transferred from the poor (who typically bear a disproportionate share of the burden) to those more able to bear these risks. See Furman and Stiglitz (1998).

macro-economic and structural policies (such as the regulation of financial sector).

3. Why did the policies aimed at addressing the crises fail? Raising this question opens the door to several others: Would the crises have been even worse in the absence of these policies – so that while they failed to contain the crises, the policies improved matters *relative to the relevant counterfactual*? Or did they actually exacerbate the crises? And if so, would they have worked, *but for the failure of the governments involved to live up to their agreements*? Finally, to what extent should the design of crisis responses take into account the willingness and ability of governments to implement agreements – and when should implementation failure be accepted as a defense of failed policies? In short, to what extent should policy makers take into account political economy considerations and the social consequences of what follows upon their advice, and be held accountable for their failure or success in doing so?

4. Are there policies and structures (institutions) that can bring social and private costs and benefits of risk-taking into alignment, without adverse ancillary consequences? More broadly, are there effective means of reducing market failures and mitigating their consequences, of reducing economic volatility, and of protecting the poor protected from the risks associated with economic volatility? Can these approaches ensure a more equitable sharing of the costs of instability, including the costs of adjustment?

Let me say a word about each of the first three controversies in turn, before turning to the fourth question, which is the focus of this paper. In answer to the first question, some argue that there are only “limited market failures” requiring only limited government action and that more extensive government action is likely to be associated with substantial negative side-effects. In short, according to this view, only minor modifications of the current regime are needed; we simply need to do better what we have already been trying to do. I shall argue, on the contrary, that the market failures are serious, that the externalities are large and the consequences of an absence of risk markets are grave, and that under the current regime, the benefits of short-term capital flows and more broadly capital-market liberalization may well not justify the associated risks.

At the same time, I am rather pessimistic about the possibility that improved government policies *within the existing international financial*

framework can go far to reduce the risks imposed by financial and capital market liberalization and to mitigate their consequences. The international economic architecture cannot be designed on the assumption that all governments are perfect or near perfect! Nuclear reactors and airplanes are both designed to be run by fallible humans, with a variety of safety provisions to guard against human error (as well as mechanical failures). The possibility of “mistakes” in economic policy – especially in cases of collective actions taken under considerable uncertainty, when even professional economists do not agree on the appropriate action – is all the greater. But it is pointless to assign blame: Was it the design of the airplane, which made it all too vulnerable to human error, or the human error itself which should be blamed for the crash? Both are, in some sense, to blame. But if a plane is too sensitive to human error, and if as a result there are frequent crashes, surely all would agree that there should be alterations in the design of the airplane. In most instances, we can address the problem more effectively through such a redesign than by trying to eliminate human fallibility. The evidence of frequent – increasingly frequent – and ubiquitous financial crises suggests that at least the economic architecture suffers from some deficiencies.

This human and institutional fallibility extends beyond the actions that might prevent a crisis to those associated with responding to it. There is now widespread agreement that the actions taken, say, in response to the crisis in Indonesia and some of the other East Asian countries was far from optimal: at least from an *ex post* perspective (and arguably also from an *ex ante* perspective), governments adopted fiscal policies that were excessively contractionary.

Indeed, the problem of human fallibility has been well illustrated by many of the intellectual arguments that have been put forward for and against changes in the international architecture. If, as the old saw has it, consistency is the hobgoblin of small minds,² then few small minds have entered the fray.

Intellectual Inconsistencies and the Foundations of the Architecture Debate

To be sure, a few commentators have stood out with an intellectually consistent – if flawed – position. They have argued that markets work

² While Emerson’s original statement of this proposition was that “a *foolish* consistency is the hobgoblin of little minds,” the argument here is that much of the debate has in fact been dominated by foolish *in*consistencies.

perfectly, or at least that any imperfections are likely to be exacerbated by government intervention. They have argued that exchange rates, like other prices, should be left to the free market; that monetary policy should be governed by strict rules, since discretionary policy is likely to exacerbate fluctuations rather than dampen them; that there is no place for bailouts in a market economy; and that there is no place for government regulation in financial markets. There are four premises underlying this position:

- Markets yield (Pareto-) efficient outcomes.
- Anything the government can do, the market can do just as well.
- Government policies are likely to be ineffective.
- Government policies, even if they have an effect, are likely to be counterproductive.

The first three propositions are theoretical; and although true under highly restrictive conditions, they are not in general true. Whenever information is imperfect or markets incomplete – in other words, always – markets are not even constrained Pareto-efficient.³ The government has powers that are not available to other (legal, voluntary) institutions, and so it can take actions that the private sector cannot;⁴ moreover, the actions of the government can be undone by the private sector only under highly restrictive conditions. The last proposition is harder to deal with. There is a need for public goods, so there is a need for government, at the very minimum to provide the institutional infrastructure that is required to make markets work.⁵ The question is, what is the appropriate role? The historical record is only partially relevant, since evolutions in policies and institutions may have improved government performance. While the theory of rent seeking and public choice has provided explanations for why we should expect inefficiencies within the public sector, modern theory has shown that rent-seeking may be less important in the public sector and more important in the private sector than previously thought.⁶

Most of the participants in the debate over economic architecture agree that there is a role for government. But there are those who, while grudgingly admitting the need for government and recognizing the existence of important market failures, circumscribe that role in ways that are not (and I suspect cannot be) defended on grounds of either

³ Greenwald and Stiglitz (1986).

⁴ Stiglitz (1989).

⁵ World Bank (1997).

⁶ See, for example, Edlin and Stiglitz (1995).

theory or evidence. They argue that *with a few exceptions* markets should be relied upon, and government intervention is likely to lead to a worsening of outcomes. The exceptions include:

- International bailouts
- Interventions in the foreign exchange market
- International surveillance of capital movements
- Regulation of financial institutions through capital-adequacy requirements

The argument for bailouts is that without them, contagion may result; an alternative argument is that even firms or countries with positive net worth may face liquidity crises. The argument for intervening in the foreign exchange market is that otherwise markets may exhibit excess volatility, thereby destabilizing the economy. The argument for international surveillance is that the information it provides can lead to better investment decisions, thereby reducing the likelihood of capital-flow reversals like those that rocked East Asia. The argument for financial sector regulation is that it can prevent financial-market crashes that have systemic effects, and capital-adequacy standards are justified as providing strong incentives without distorting resource allocation.

While each of these arguments may seem plausible, closer examination reveals that the overall stance is full of intellectual inconsistencies. Underlying each of the interventions is the belief in a market failure. But there exist neither theorems nor evidence to suggest that *if the market failure is sufficiently important to warrant the accepted intervention, the interventions should be limited to the suggested means*. Once we admit that market failures exist, we should be willing to accept the full consequences of this admission, rather than artificially circumscribing whole sets of interventions.

Contagion, externalities, bailouts, and capital-market liberalization

Consider the international bailouts, which are justified on the basis of contagion. Once one admits the possibility of contagion, one admits that there are externalities associated with capital flows and their reversals; and once one acknowledges the externalities, there is a *presumption* in favor of actions to reduce the externality-generating activity. It is simply intellectually incoherent to say that interventions are justified by the possibility of contagion, and yet argue for free capital flows *as a matter of principle*. To be sure, one might argue as a *practical matter* that there are no feasible interventions with positive net benefits that can

be designed to correct the market failure, but that is a far harder case to make.

Or consider the alternative argument for a lender-of-last-resort interpretation of bailouts – that recipient countries or firms suffer from a lack of liquidity. What does it mean to lack liquidity? It means that lenders are not willing to provide capital, or at least to provide it at a “reasonable interest rate.” And what does a bailout entail? Replacing the market’s judgment with the judgment of national or international bureaucrats! Ironically, those making the decisions are often the same international bureaucrats who on other occasions declare not only the supremacy of markets but also the incompetence of (other) government bureaucrats. Yet it seems that *these* bureaucrats have – or, more accurately, believe they have – judgment superior to that of the markets.

Implicit in their analysis – as well as underlying some of the rationale for intervention in exchange rate markets – is the belief that markets may exhibit excess volatility – beyond a level that can be justified by fundamentals. There is indeed considerable evidence for that view.⁸ But note, that if markets can be excessively pessimistic about some investment prospects or some country, so too can they be excessively optimistic.

The point is a simple one: if one believes that one should substitute a bureaucrat’s judgment for the market’s in some instances, isn’t it plausible that the market’s judgments should be questioned in other instances?

Similarly, if it is desirable to intervene to avoid the consequences of excessively pessimistic perceptions, so too may it be desirable to intervene to avoid the consequences of excessively optimistic perceptions, such as those that lead to real estate bubbles. Should we accept the market’s enthusiasm for investing in empty office buildings – letting those market-driven decisions crowd out investments in growth-enhancing plant and equipment? Should we continue to do so despite the lesson from country after country that real estate is prone to bubbles, that those bubbles always break, and that when they do they damage the entire economy? Thailand had had restrictions on bank lending to real

⁷ Note that in the case of a bailout of a single firm or bank under the “too big to fail” doctrine, there is another market failure: in the competitive paradigm, each firm should be so small that any action that it takes will have a negligible effect on markets.

⁸ Shiller (1981, 1990).

estate, motivated both by the belief that investments in plant and equipment are more likely to generate growth than are investments in real estate, and by the recognition that speculative real estate investments have often been a source of macro-economic instability. But Thailand was persuaded to abandon these restrictions, on the grounds that they interfered with the market, and thereby presumably also with the efficient allocation of capital. This regulatory move is now recognized to have been an important factor contributing to the crisis.⁹ (Indeed, there is by now a body of theory explaining why financial liberalization might be expected to lead to financial and economic crises; and evidence suggesting that this has in fact happened.)

Note that there are in fact important interactions between the first and second arguments: if there were no systemic effects, excessive optimism on the part of investors would lead them to lose money, but the matter would end there. Those investors alone would bear the costs of their own mistakes. But not so here: the crises have clearly had huge effects on millions who never gambled a bhat in the Thai real estate market.

Exchange-rate interventions

Similar problems arise in the analysis of exchange-rate interventions, which involve a certain irony. It is commonplace for those in a particular industry to claim, while praising the virtues of the market in general, that they need special protection or government intervention; without it, they argue, there will be excess competition or volatility. Capital markets are no different in this regard: there seems a widespread acceptance of the role of government in stabilizing exchange rates, while condemning other government interventions. Never mind the theorems that assert the impossibility of destabilizing speculation, and thus of any need for a government role as stabilizer.¹⁰ Never mind that by intervening, governments are substituting a bureaucrat's judgment of the "correct" exchange rate for the judgment of those who

⁹ See Furman and Stiglitz [1998a]. To be sure, other policies may have contributed to the country's vulnerability, and the policy responses may have exacerbated the consequences.

¹⁰ To be sure, even if those who engage in destabilizing exchange rate are "eliminated" by a Darwinian process, so long as there is a flow of new, excessively optimistic speculators into the market, speculators can continue to play a destabilizing role. See Farrell (1970). The controversy over Malaysian Prime Minister Mahatir's criticism of speculators is enlightening in this perspective. Mahatir was roundly attacked when he accused speculators of destabilizing Malaysia's currency. (There was a suggestion in his remarks that the speculators had nefarious motives; our concern here is not with motives but consequences.) Yet government interventions in the exchange rate market are widely accepted, presumably because most observers believe that participants in the market sometimes cause excess volatility.

are willing to put their own money (rather than the public's money) on the line!¹¹ Let me be clear: I am not taking a position here on the desirability of exchange-rate intervention, but only on the intellectual consistency of those who advocate free-market positions in general, yet at the same time argue for and defend interventions in the foreign exchange market.

Some defenders of exchange-rate intervention argue that it has in fact not cost the government anything. (Evidence on this question is mixed.) But if exchange-rate intervention is profitable, this is evidence that there is an important market failure.¹² And if there is a market failure, why should there be a presumption that exchange-rate intervention is the only, or even the best, instrument for dealing with it?

Transparency and hypocrisy

Upon viewing the East Asia turmoil, many observers have called for the region to adopt a policy of greater transparency. I suspect that the motives behind this stance may not themselves be fully transparent; we can easily, however, deduce two of them. First, the call for transparency requires no money from the more advanced countries, and little action on their part. Second, this view lets the investment houses and banks in developed countries off the hook. After all, if these market participants were so smart, they would not have made these bad investments and loans; the only possible explanation is that investors lacked access to the requisite information, due to a lack of disclosure by borrowers. But we should look at this argument with some suspicion. The lenders had an obligation to do due diligence, and if needed information was not available, they should not have made the loans or investments.

Skepticism about the emphasis on transparency has been heightened by the actions of developed-country governments, which have often done little to make more transparent key and clearly relevant information. Examples include an unwillingness to reduce the secrecy surrounding the discussions and voting of the committees that set monetary policy,¹³

¹¹ The evidence on whether bureaucrats are right in those judgements—specifically, on whether they make a profit—is mixed at best. According to Dominguez and Frankel (1993, p. 107), “[p]rofit calculations [of exchange rate interventions] are extremely sensitive to the time period over which they are measured and the method by which interest earnings are measured.”

¹² Indeed, with perfect capital markets, all financial actions by the government have no consequence. This is the extension of the Barro-Ricardo theorem to more general actions.

¹³ The U.K.'s recent initiatives in this direction are an exception to the general pattern. It is worth noting that this increased transparency has not had any of the untoward

to change accounting standards to reflect obligations under deferred compensation/stock options,¹⁴ or to improve the accounting standards of banks (e.g., marking to market assets, especially those for which there are readily available market prices).¹⁵

Or consider the recent developed-country bailout (privately financed but government-orchestrated) of a domestic U.S. firm imperiled by derivatives trading. In this case, Western banks and the firm to which they lent have loudly declared that they had no obligation to provide information their portfolio positions on a regular basis, raising justifiable suspicions that a dual standard is at work.¹⁶ In the face of these bailouts, why have we not heard again the voices of those governments and international institutions that called so loudly for transparency during the East Asian crisis?¹⁷ What message does their silence send to Asia and to the rest of the world?

The tendency to blame only borrowing countries is consistent with the heavy emphasis immediately after the crisis hit on the weaknesses of the financial institutions in the developing country. This emphasis ignored

effects its critics had suggested might follow.

- ¹⁴ FASB actually proposed a change to increase transparency in this arena, but was soundly attacked by the U.S. Treasury and other government officials. Not only was that a blatant attempt to politicize a process that had been deliberately structured to be non-political, but it was misguided: surely, the best estimate of the value of these liabilities is not zero. To be sure, there are difficulties of provided an accurate estimate, but rather than focusing on attempts to provide a more accurate estimate, or even a conservative estimate (one such methodology was in fact developed advocated by another U.S. government agency), a decision was made to support those who did not want an improvement in transparency.
- ¹⁵ Such proposals gained currency in the United States in the aftermath of the S&L crisis, but were soundly resisted by U.S. government officials. There were legitimate concerns about the fact that not all assets would be marked to market, and this could have distortionary effects; but there are large distortionary effects (going beyond the lack of transparency) associated with the current regime. See Stiglitz (1992) and Kane and Yu (1996). Equally telling is the way that regulatory authorities have handled risk. Below, I raise some further reservations.
- ¹⁶ There is some suspicion that some of these so-called arbitrage activities were not risk arbitrage so much as tax arbitrage; in retrospect, it is clear that they were not fully hedged.
- ¹⁷ The Long Term Capital Management (LTCM) bailout also raised issues of corporate governance, crony capitalism, and the adequacy of bank regulation, as recent Financial Times articles have pointed out (Plender (1998)). Several circumstances raised at least an appearance of crony capitalism when the Federal Reserve acted to arrange the bailout. First, one of LTCM's partners was a former vice-chair of the Fed. Second, the CEOs of at least some of the companies participating in the bailout had personal positions in the company being bailed out by their companies. And finally, bank lending to a firm with the kind of reported exposure of LTCM raises severe questions about prudential behavior (questions corroborated, in fact, by the losses suffered by some of the banks).

the elementary theorem that every loan has a borrower and a lender, and that the lender shares, in some sense, equal culpability for a "bad" loan with the borrower. In the case of the Korean loans, where the heavy debt-equity ratios of Korean banks and their borrowers was already well known before they made those loans, the lenders' culpability may even be greater. And the risk management systems of the more developed countries should have been far better than those in place in Korea.

But there is a more fundamental inconsistency here. Recall that the central theorems underlying the belief in a decentralized market economy argue that prices convey all of the relevant information. With well-functioning markets, the kind of information that some are calling for – aggregate data on aggregate capital flows – would simply not be required. That such information is viewed as important itself indicates a belief in a market failure. The market failure needs to be identified, and it has to be established that the most effective way of addressing it is through a disclosure requirement enabling the calculation of certain aggregate statistics. The fact that such information – about aggregate production of steel or cars, say – is not viewed as necessary for the effective functioning of other markets is consistent with the view that capital markets are different in essential ways from other markets. I strongly agree with this view, but it has clearly not been internalized by those who, in pressing for capital market liberalization, use the analogy that capital is just like any other commodity. According to this analogy, just as free trade in goods and services enhances welfare, so too should free movements of capital.

Let me be clear: I support moves towards greater transparency and improved auditing standards. Indeed, even before these policy measures had become fashionable, I had argued that improved auditing standards had played a critical role in the development of modern capitalism, by allowing the development of an equity market.¹⁸

Financial-sector liberalization

The final example of an intellectual inconsistency concerns financial market liberalization. There are a few diehard free-marketeers who advocate "free banking" – a financial sector without prudential regulation. But their numbers are limited, simply because this position seems at odds with the evidence on the costs and benefits of free banking. The history of U.S. banking failures in the decades prior to the

¹⁸ See Greenwald and Stiglitz (1992).

Civil War made clear the risks associated with this “free”-market solution; the subsequent century has provided abundant worldwide evidence of these risks (in Chile in the 1980s, for example).

Faced with this history, even the most relentless free-market advocates generally admit an important regulatory and supervisory role for government in the financial sector. In the United States, this role dates back 135 years, to the middle of the Civil War. As it became apparent that the Union would be preserved, it also became apparent that a *national* banking system would greatly enhance recovery and growth in the postbellum period, and an effective national banking system required effective regulation. But this recognition of the importance of regulation has often been overshadowed by fervor for liberalization and deregulation. To be sure, the advocates of liberalization and deregulation seldom go so far as to advocate free banking; but by failing to understand the roles and functions of financial market regulation--and constraints under which it operates--they have left the financial sector in many countries far weaker. Indeed, there is evidence that financial market deregulation is systematically related to an increased likelihood of a financial crisis. Thus badly designed reforms of financial regulation have contributed to the “boom in busts,”¹⁹ to use the memorable phrase of my colleague Jerry Caprio, which the world has experienced in the last quarter-century.²⁰

Government regulation of the financial sector is desirable for reasons that have been extensively discussed elsewhere: the public-good aspects of monitoring, the systemic consequences of crises, the tendency of governments to respond with bailouts as a result of these systemic worries (the “too-big-to-fail” doctrine) – all arguments which have their counterpart in the debate over international financial flows. Today, there is a consensus that there is a role for government regulation. To be sure, there are some regulations which no longer serve any useful purpose, and these should be eliminated. My target here is a narrower one: the intellectual incoherence and incompleteness of the approach that some have advocated under the rubric of financial-market liberalization. I am taking issue with the doctrine, often associated with financial market liberalization, that says that the best way of providing for prudential regulation is ensuring that there are strong, risk-adjusted,

¹⁹ Caprio (1997, p. 80). Caprio and Klingenbiel (1996) identify banking crises, defined as episodes when the entire banking system has zero or negative net worth, in 69 countries since the late 1970s. In addition, this data only identifies countries with sufficient data. They estimate that inclusion of the transition economies would add crises in at least 20 more countries.

²⁰ Demirgüç-Kunt and Detragiache (1998a)

capital-adequacy standards. These doctrines argue against restrictions on lending practices (other than self-dealing) and other interventions, such as deposit-rate ceilings and entry barriers. But neither theory nor evidence supports this position. A recent paper that I wrote with my colleagues at Stanford, Kevin Murdock and Thomas Hellman, showed that the sole reliance on capital adequacy standards is inefficient, and that there can be Pareto improvements from employing a wider range of instruments. Worse still, in some cases, increasing capital adequacy standards can lead to less prudent behavior, as such increases have an adverse effect on franchise value; and it is franchise value *plus* capital that determines a bank's lending behavior. Both theory and evidence supports the view that restrictions can both strengthen the financial system and contribute to (or at least not adversely affect) economic growth.²¹ And economic analysts and practitioners alike now recognize that the risk adjustments associated with capital-adequacy standards are inadequate. In fact, they may even have contributed to the crises, both by giving regulators and investors a false sense of confidence in the strength of financial institutions (which in some cases had exceeded the Basle standards) and by providing perverse incentives.²²

One might ask what could lead to the pursuit of such simplistic approaches to financial sector regulation – other than a simple lack of understanding of capital markets. One interpretation is that this approach marks a rear-guard attempt to minimize the role of government: having recognized the need for *some* role for government, free market ideologues have asked, what is the *minimal* role, not *what is the most effective way of attaining the objectives?*

This discussion of the intellectual inconsistencies that have weakened so many of the recent discussions of the new international architecture suggests that ideologies – and possibly special interests – may have been playing a larger role than economic science, than analyses based on coherent models and empirical evidence. In the following sections, I will focus on three key policy issues concerning the new international architecture: interventions in short term capital flows, the lender-of-last-resort role, and international bankruptcy provisions. But first, I want to illustrate how all of these intellectual confusions play out in recent discussions of contagion.

²¹ See, for instance, Caprio and Summers (1996) and Hellman, Murdock and Stiglitz (1997).

²² Dooley (1998).

Contagion: An example of intellectual confusion

The most serious argument underlying bailouts is that without them, crisis would lead to contagion. As I have already noted, contagion is evidence of a market failure – specifically, an externality. As in the case of any other externality, such as air or water pollution, there is a presumption that government should act to mitigate the externality. And even if there were no contagion, the fact that governments do intervene on the grounds that they fear contagion (or even use it as an excuse for providing corporate welfare for lenders, as some have suggested) itself helps explain why there is a discrepancy between private and social risk-bearing. The argument that there is no moral hazard because lenders do bear *some* costs is simply wrong: moral hazard exists whenever lenders do not bear the full costs of their actions, which they do not so long as there is a bailout.

But I want to go further here: to show how the presence of contagion itself suggests that there are further market failures in the economy. Contagion operates through trade and capital markets. On the trade side, the loss of markets in the affected countries has adverse effects on its trading partners. Note that this argument reflects an assumption of imperfect markets; for the loss of sales to Thailand, say, represents a minuscule effect on world trade, and with perfect markets, there would be no perceptible effect on world prices or on the sales of any firm. In practice, this is not true, and in fact, in the recent experience, the direct trade effect has been amplified by a terms-of-trade effect: commodity prices and prices of goods supplied by the affected countries have plummeted.

The capital market effects are even harder to reconcile with perfect markets. Why should a crisis in East Asia roil capital flows to Brazil? Or a crisis in Moscow affect Buenos Aires? There are two mechanisms. The first is that these crises affect beliefs. The question is, what information does a crisis in Thailand convey about the Brazilian economy? None. But consider what happens if there are pervasive irrationalities in the market, either of the kind described above, or by Keynes, who described capital markets using the non-politically correct metaphor of a beauty contest. In this metaphor, judges are not trying to pick the most beautiful contestant, but the one who others *believe* is the most beautiful. If the beauty-contest metaphor holds, then there may be “rationality” in seemingly irrational responses: if each investor believes that the crisis in Thailand will discourage *others* from investing in emerging markets, then it is individually rational for all investors to pull out of those markets. In this way, the crisis in Thailand precipitated

a run on other emerging markets, just as a run on the banking system can be precipitated by a myriad of events. These triggers serve as “coordinating mechanisms”; once a particular variable is indeed acting as a coordinating mechanism, it pays each investor to heed that variable, even if it has no intrinsic value. But due to such sunspot equilibria, the market may not be Pareto-efficient: some equilibria may Pareto-dominate others, and there may exist interventions that improve *each* of the equilibria.²³

Once one admits the possibility of these sunspot equilibria, of course, almost anything is *possible*: variables that are intrinsically unrelated to the economy can have real effects. An economic crisis in Mexico could plummet the Argentine economy from one equilibria to another, while a bailout that resolves the Mexican crisis could move the Argentinean economy back to its original equilibrium. Thus, a bailout could serve to contain the contagion. In such situations, economists are forced into the never-never land of trying to predict investor reactions, a land in which those reactions may be *consistent* with each other but are only loosely related to *structural* properties of the economy. That is, there may be no reason for the collapse of the Mexican economy to affect Argentina adversely, other than it is used as a coordinating mechanism in a sunspot equilibrium. To be sure, if a particular pattern of sunspots frequently led to a movement from one equilibrium to another, then the empirical evidence for such a sunspot equilibrium would be overwhelming, and our task as economists would be relatively easy. But in most cases where there is an assertion of such seemingly irrational patterns, the historical record is thin; we can only hope that crises will remain sufficiently rare that this remains true.²⁴

If one applies the logic of *rational* expectations to contagion, the success of a bailout is far more questionable.²⁵ For assume that a market participant believes that he is less well informed about the Mexican crisis than are the US government officials engineering the politically

²³ In general, Nash equilibria are Pareto-efficient only under the highly restrictive conditions associated with the Arrow-Debreu model. For early models of multiple equilibria (including sunspot equilibria), see Stiglitz (1972) and Shell (1977).

²⁴ The ability of a temporary increase in interest rates to sustain a “good” equilibrium, even after the monetary tightening has been eliminated, may be attributed to such sunspot equilibria. (The alternative explanation, that it serves as a signaling device, has been discredited, at least in the context of the East Asia crisis.) See Stiglitz (1997) and Furman and Stiglitz (1998). The historical record on the relationship between interest rate changes and exchange rate changes provides scant evidence in support for there being a systematic relationship. See Kraay (1998) and Stiglitz and Furman (1998).

²⁵ I am indebted to Janet Yellen for discussions on this point.

costly bailout. Then he might well infer that the Mexican crisis is fairly deep, requiring a bailout to sustain the economy at even the low level to which it will likely sink. But then imagine the investor turns his attention to Argentina. He might well reason that the United States has less of a vested interest in Argentina than in Mexico, and that therefore, given the political difficulty of engineering the Mexican bailout, the United States is unlikely to intervene to help Argentina. If there are similarities between Mexico and Argentina – and the investor must be hypothesizing such similarities for there to be contagion – then he concludes from the Mexican bailout that Argentina's situation is worse. Why? Because he believes that a bailout is necessary, but is unlikely for political reasons. In this way, a Mexican bailout may deepen Argentina's difficulties.

In this particular example, the so-called Tequila Crisis, matters did not unfold as I have described. But my point in relating this story is two-fold: not only to emphasize how shaky is the ground upon which we stand as we pursue the logic of contagion, but also to demonstrate that contagion rests on collectively irrational behavior that should limit our confidence in the market itself.

Contagion in capital markets could operate through a third channel, as some have argued it did this year. Imperfections in capital markets mean that losses in the Russian market precipitate margin calls and a portfolio rebalancing by investors, which affects other emerging markets. In our models of perfect capital markets, this explanation has little persuasive power: with thoroughly diversified portfolios, the losses in Russia represented such a small fraction of the world's wealth that portfolio rebalancing should have negligible effects on Latin America, rather than the dramatic effects it apparently had in practice.²⁶

It was not only the existence of contagion, but also the responses to it, that illustrated market failures and irrationalities. Note that contagion exacts its greatest costs through the economic collapses that it sets off. If markets worked perfectly and adjustments were instantaneous, the economy would respond quickly to these disturbances and full

²⁶ The Russian debacle is argued by some to have had such an adverse effect on other emerging markets because it served to remind investors of the possibility of a unilateral abrogation of a debt contract. But surely, this was not news. Such unilateral abrogations had occurred in the past, and what should have been interpreted as essentially equivalent events had already occurred in East Asia: Korea's "voluntary" rescheduling earlier in the year (where it was perfectly clear that had lenders not submitted to the voluntary rescheduling, it would have occurred in any case) and Indonesia's formal recognition of what was already the *de facto* situation, its non-payment of foreign denominated-debt by the countries' enterprises.

employment and growth would quickly be restored. And although the disturbances might indeed lead to wealth redistributions, they would not hamper the efficiency of the economy. Indeed, that is the major thrust of the vast literature in the United States that goes by the label of “real business cycles”, a literature that takes seriously the contention that markets are efficient. To economists of this persuasion, economic fluctuations are just the economy’s efficient adaptation to changes (“shocks,” in the technical jargon) in technology and preferences (and presumably, in modern extensions, also new information). In this view, the low employment during the Great Depression simply reflected individual choice: under the new parameters characterizing the economy in the late 1920s and early 1930s, individuals preferred to enjoy more leisure than they had before. This analysis is indeed the logical (and intellectually coherent) consequence of the belief in efficient markets. But to most economists, especially outside of a few American academic establishments, and to virtually all non-economists, such analyses seem ludicrous. The reason that contagion is of concern is that markets do not adjust well, and that the shock waves triggered by contagion can have real adverse consequences that domestic macro-policy cannot quickly and fully offset. Ironically, there is a growing consensus that many of the policy prescriptions designed to stem contagion in the current crisis involved macro-adjustments that *exacerbated* rather than dampened market imperfections, and thereby deepened the economic downturns in the affected countries.

Market Failures: A Recap

This discussion of the intellectual inconsistencies prevalent in many discussions of the architecture of international capital markets, and illustrated by the interpretations of contagion, has also served to identify most of the relevant market failures which will underpin our policy discussion below:

- Contagion and systemic consequences of financial market disturbances imply that there are significant *externalities*.
- Markets are rife with *information imperfections*. Actions within the market affect beliefs;²⁷ prices do not convey all of the relevant information; aggregate information that is relevant for decision-making is not only not provided automatically by the market, but may require government enforced disclosure requirements; and information imperfections lead to market imperfections, especially in capital markets. These information imperfections lead to a variety of

²⁷ Which is not allowed in the Arrow-Debreu model.

apparent *irrationalities* in market behavior and performance, including excess volatility, and are associated with the possibility of inefficient sunspot equilibria.

- There are *missing markets* in futures and risk-sharing instruments. Firms cannot insure themselves against fluctuations in exchange rates in the more distant future, and households cannot insure themselves in the market against the risks associated with macro-economic fluctuations, including those induced by contagion.²⁸
- *Public good* issues arise in the provision of information and actions to stabilize the economy. Indeed, there is a growing recognition of the importance of *international public goods*,²⁹ including the provision of international economic stability and of certain types of information.
- *Imperfect competition* in goods markets means that disturbances in one country can have disproportionately large effects on its neighbors. Other aspects of imperfect competition help explain why bank failures have systemic effects, why governments engage in bailouts (justified by the too-big-to-fail doctrine), and why futures markets for some important policy risks are missing.³⁰

Capital Market Liberalization

Let me first dispense with two issues on which I think there is consensus: capital markets are important and indeed are central to the success of a market economy, but capital markets differ from other markets in essential ways.³¹ There is also a consensus (to which I referred in the beginning of my talk) that capital market liberalization leads to increased risk; the crisis in East Asia is only the most recent example of a phenomenon that had already been widely documented. Liberalization is systematically associated with an increased probability of a financial sector crisis,³² and such crises are systematically associated

²⁸ The importance of the absence of risk markets cannot be overemphasized. In Newbery and Stiglitz (1982), we show that opening trade may lead to a *Pareto-inferior* equilibria in the absence of risk markets.

²⁹ For a discussion of the concept of global or international public goods, see Stiglitz (1995) and Council of Economic Advisers (1997).

³⁰ For instance, in the United States grain markets, four or five firms have a dominant role; their informational advantages lead to thin futures markets. See Kyle (1992).

³¹ In particular, capital markets produce information but at the same time are plagued with problems of imperfections of information. The central theorems of welfare economics assume that information is perfect, or at least not affected by actions of the agents within the economy—thus making those theorems completely irrelevant to understanding how financial markets operate.

³² See Kaminsky and Reinhart (1998). Kaminsky and Reinhart point out that “in 18 of the 26 banking crises studied here, the financial sector had been liberalized during

with a slowdown in economic growth over the five succeeding years.³³ I want to discuss here three more difficult questions: (a) Have the benefits been commensurate with the risks, and if not, why not? (b) Are there ways to mitigate the risks, and hence increase the net benefits? (c) Are policy interventions desirable? If so, what should the objectives of such interventions be, and how should we assess success?

Why do the benefits of liberalization appear to be so limited?

Several studies have suggested that the net benefits of capital market liberalization – in terms of either growth or investment – are limited at best.³⁴ (See Figures 2 and 3.)³⁵ In a sense, this result should come as no surprise. Capital market liberalization has focused on opening capital markets to short-term flows. Foreign direct investment is widely recognized to have large benefits: it brings with it not only capital, but more importantly access to markets, new technologies, and human capital. Short-term capital that is necessary for trade is also vital, and even before capital account liberalization, governments and international actors made great efforts to ensure that firms had access to trade finance.

Why might the net benefits of capital-market liberalization have been so low? Recall that even before liberalization, the countries of East Asia were already saving at a very high rate (See Figure 4).³⁶ Even with the Philippines included, the average saving rate for the East Asia 5 exceeded 30 percent, or 33 percent when FDI is included. Together, domestic savings and FDI would have financed a very robust investment/GDP ratio. Questions could legitimately be raised: what value was there in greater capital flows? Surely, at some point the marginal return to investment declines; should we be surprised, then, that capital-account liberalization was associated with low returns? In retrospect, it is clear that the countries that liberalized made a bad bargain.

the preceding five years, usually less.” See also Demirgüç-Kunt and Detragiache (1998b). Demirgüç-Kunt and Detragiache found systematic cross-country evidence that financial liberalization, measured by the relaxation of controls on interest rates, increases the probability of a banking crisis.

³³ See Caprio (1996) and Figure 1.

³⁴ See Rodrik (1998) and International Monetary Fund (1995). There are however, some economic papers which claim the contrary, namely that capital account liberalization is correlated with economic growth. See Quinn (1997).

³⁵ See Figures 2 and 3.

³⁶ Figure 4 shows savings rate of East Asia prior to the crisis.

To see just how bad, let me run through a few back-of-the-envelope calculations. Assume that these countries had borrowed short-term at 8 percent real, and managed to earn even a 10 percent real return, for a net return of 2 percent. Assume further that they had managed to get an inflow of capital equal to 10 percent of their GDP. Short-term capital inflows then would have generated a net gain of 0.2 percent of GDP per year. Assume that the flows kept pace with the growth of their economy, that their economies would have grown at 6 percent, and that they had been able to sustain the given level of returns. Then, using the 8 percent real interest rate as the discount factor, the present discounted value of the gain from capital account liberalization would have amounted to 10 percent of current GDP. But now consider the loss from the crisis. Assume that they would have been able to maintain, on the basis of their own savings, the growth rate of 6 percent.³⁷ Then, if the loss in GDP, relative to trend, was just equal to the average experienced by developing countries experiencing a banking *cum* currency crisis, the total loss would have amounted to more than 17 percent of current GDP. But there is reason to believe that the current crisis is worse than average, so that the loss relative is likely to be far greater. Indeed, current projections suggest a cumulative fall during 1997, 1998, and 1999 for, say, Thailand, of approximately 24 percent. If after growth recovers there is no "catch-up"³⁸, then the present discounted value of losses would equal approximately *12 times GDP*, for a cost-benefit ratio of 120. No wonder citizens in some developing countries express skepticism about the virtues of capital-account liberalization!

There is another reason that the benefits may be limited. Recent studies³⁹ show that a key variable predicting crises seems to be the ratio of short-term debt to reserves. There is some controversy about why that should be so⁴⁰, but for the purpose of our current discussion, what matters is the market's beliefs about what constitutes prudent behavior. And if the market "insists" that an increase in short-term foreign-denominated *debt* be matched by an increase in short-term foreign denominated *liabilities*, just think what that implies. A firm in some poor African country manages to borrow \$100 million at 18 or 20 percent – perhaps from a sound American bank, or perhaps from a bank that knows that because

³⁷ The steady inflows would have enabled them to maintain a higher level of GDP, but not in general a higher growth rate.

³⁸ Consistent with models suggesting a unit root.

³⁹ See, for example, Furman and Stiglitz (1998).

⁴⁰ In principle, all money in the country could be converted into foreign currency, and thus be subject to capital flight; for this reason, earlier studies focused not on short-term liabilities but on the ratios of M2 to reserves. Nevertheless, in the East Asian crises, this variable did far more poorly as a predictor of crisis than did the ratio of short-term liabilities to reserves.

it has uncovered hedges that the regulators have yet to discover that it is on the verge of collapse and is therefore willing to undertake a big gamble in return for high returns⁴¹. Then to be prudent, the poor developing country must put aside \$100 million in reserves, typically in the form of U.S. Treasury bonds. What is the net result? In effect, the country is borrowing at 18 percent and lending at 4 percent – a deal that may well look good from the point of the United States (which has taken the lead in pushing for capital market liberalization), but that hardly seems a path to growth for the African country. Indeed, the sacrifices that the country has to make – in terms of forgone investments in education or health or public infrastructure – may well be a drag on its growth.

How have other policy measures contributed to risk, and how can we mitigate the risk?

Sadly, in spite of the potential for risk reduction that seems to be offered by diversification in the international capital markets, risk has increased. A full understanding of why this might be so would take us beyond the scope of this lecture, but let me outline some of the elements of the answer.

The first is that even in capital markets that have long been open, such as that of the United States, there is much less diversification than one might have thought.⁴² And part of the explanation for this is simply lack of information: individuals do know more about their own country than about what is going on abroad, and hence the perceived and actual risk of investing abroad is greater. Much of the return to investing are private not social returns, so that it is important to find out slightly before other investors about a change in circumstances that increases or decreases the market value of an asset.⁴³ Those inside the country are more likely to know about adverse changes in their circumstances before those outside, and with open capital markets, they can easily get their money out. Indeed, the evidence suggests that capital flight from

⁴¹ A form of Gresham's Law operates in the banking world: not only can bad banks outbid good banks (when there is deposit insurance but no deposit-rate controls), but they also have strong incentives to make bad loans that even reasonably prudent borrowers may find hard to resist. See Stiglitz (1992). Contagion thus spreads not only from *disturbances* in one market to other markets, but also from bad banks in one market to other markets. Using this reasoning, *some* of the problems in East Asia are arguably attributable to contagion from weak banks in Japan.

⁴² In the United States, for example, domestic equities made up 96% of total equity holdings as recently as 1989 (French and Poterba, 1991). See also Obstfeld and Rogoff (1996, 304-306)

⁴³ See, for instance, Hirshleifer (1971) and Stiglitz (1993b).

those inside the country precedes capital withdrawals from outside, and is often the root cause of a crisis. Knowing this, outsiders should be reluctant to enter unless the differential in expected returns is sufficiently high; but with a high difference in expected returns, insiders will have limited incentive to diversify out, since from their perspective, these outside opportunities then yield both lower expected returns and higher risk.

Secondly, and in the same vein, imagine that outside investors are relatively ill-informed, and thus have relatively flat priors and view different small countries as near-perfect substitutes. Then slight changes in information may lead to changes in portfolio positions that, from the perspective of the small developing country, are quite large. The paucity of information thus exposes them to enormous risk.

These tendencies, which may be viewed as “rational behavior in the presence of limited and asymmetric information” are exacerbated by the well-documented tendencies for herd behavior and the other market imperfections to which I referred earlier, which seem to have played at least some role in the most recent crisis. Institutional weaknesses – the fragility of financial institutions – too clearly have played a role.⁴⁴ These weaknesses have been one of the foci of Western criticisms of the East Asian countries, but several caveats are in order. The first concerns what, in the American idiom, we refer to as “the pot calling the kettle black.” It is extraordinarily difficult to create strong financial institutions. The United States may be justly proud that it is almost a decade since its last financial debacle, but other advanced countries, with supposed sophisticated regulatory and institutional structures, have had their full share of crises more recently; prime examples include Norway, Finland, and Sweden. And the very recent bailout of Long Term Capital Management, the US-based hedge fund, has made clear that what distinguishes the more advanced countries from the less may be not only their bank supervision – evidently even developed-country banks have engaged in highly risky speculative ventures – but also their ability to exercise clout upon the private sector, and the private sectors’ ability and willingness to respond.⁴⁵

Although it is weak financial institutions that have been at the center of discussions of vulnerability, there is also another sense in which less

⁴⁴ Demirgüç-Kunt and Detragiache (1998a).

⁴⁵ Indeed, as we have already noted, it was Western and Japanese banks that made the marginal loans to Korea, at a time when it was perfectly known that their companies were leveraged well beyond levels that any American firm would have viewed as prudent.

developed countries – including many in East Asia – are less able to absorb shocks than (say) more developed countries. They typically lack the automatic stabilizers that are provided by social safety nets in more developed countries, and which serve as effective mechanisms for risk absorption.

More broadly, I like to think of an economy as consisting of shock absorbers and shock amplifiers⁴⁶. Economies are constantly buffeted by disturbances, and both the price system and risk distribution mechanisms play roles in absorbing and distributing risks. During the Great Depression, it became widely recognized that the market's provision of these risk absorption/distribution mechanisms was deficient in a number of ways: not only was its restorative capacity limited⁴⁷ and its ability to withstand large shocks limited, but the structure of the economy actually served to amplify shocks beyond a certain level. For instance, we know that the poor, on average, are credit-constrained, and that they typically bear disproportionately the burden of decreases in the demand for labor hours. Accordingly, we know that the multiplier associated with negative shocks to the economy is larger than it would be if wealth were more evenly distributed, if capital markets worked more perfectly, and if the employment costs of negative shocks were shared more equitably.⁴⁸

In some countries, the amplifiers are stronger than others. For example, in a country whose firms have high-debt equity ratios, a slight loss in equity resulting from an increase in interest rates or a negative shock to demand may (unless there are offsetting risk absorption mechanisms, perhaps provided by government⁴⁹) have large macro-economic effects. These effects stem from the shift in supply curves (“the supply shock”) induced by these changes, which could be quite large. (By contrast, in the standard neo-classical model, changes in relative prices typically have no aggregate effect; the gains to suppliers precisely offset the losses to demanders.⁵⁰) In countries where credit constraints are more binding,

⁴⁶ See, for instance, Greenwald and Stiglitz (1993).

⁴⁷ Defenders of the classical model argued, for instance, that the real balance effect would eventually restore the economy to full employment. If prices continued to drop at 10 percent per year, if the ratio of “outside money” to overall wealth averaged even as high as 0.3, and if the coefficient on wealth in the consumption function was .06, then to restore the economy from a drop of aggregate demand of 25 percent *through the real balance effect alone* would have taken decades.

⁴⁸ See Furman and Stiglitz (1998).

⁴⁹ As was often the case in some of these countries.

⁵⁰ The evidence on the importance of this effect is now overwhelming. The 1973 and 1978 oil price shocks had substantial effects, as did the offsetting oil price decreases in the mid-1980s.

a decrease in cash flow can have larger macro-economic effects than if firms can borrow to offset the shortage of cash flow.⁵¹

Capital (and financial) market liberalization alters the structure of the economy. It exposes it to greater risks, and may in fact lead to structures that in fact amplify risks. At the same time, the liberalization itself does nothing to strengthen the economy's ability to buffer itself against such risks. Balanced development (like the balanced growth that Rosenstein, Rodan and other development economists emphasized in earlier decades) requires both an increase in risk exposure and a concomitant increase in risk-absorption capacity. Unfortunately, the Washington consensus has emphasized the one but paid little attention to the other. As Hellman, Murdock, and Stiglitz have emphasized,⁵² the liberalization process touched off a dynamic that weakened absorption capacity in two ways. First, it raised the bar for regulatory authorities, demanding greater competence to identify and mitigate the many risks that banks could now take. But at the same time, it reduced regulators' ability to fulfill even their earlier mandate, since budget stringency combined with soaring private-sector salaries enabled the private sector to lure away the most competent regulatory staff. The consequences of these failures were foreseeable even at the time; they are now, unfortunately, becoming all too apparent.

While the structure of the economy affects both whether shocks are amplified and whether it can absorb those shocks, inappropriately designed responses to crises have also contributed to the magnitude of the risks. Here, there is a certain irony. Wealthy countries with a strong ability to absorb risk have relied on their own resources; when faced with a financial crisis, they have carefully taken into account the ability of their citizens to absorb risks; they have engaged in forbearance, even if at the same time they have increased regulatory oversight.⁵³ By contrast, small countries that have had to turn to outsiders for assistance have not always benefited from the same balance of wisdom versus dogma, of political insight versus moral rectitude. Those with a seat at the table have not always been representative of all stakeholders: investors' views may have had far more influence than those of the workers and small businesses affected by the so-called rescue package.

⁵¹ Matters are more complicated than this simplistic discussion would suggest: if firms know that they do not have access to credit, or will not have access to credit in the event of a downturn, then they will build up a buffer, which will serve them as a shield against at least moderate shocks. By the same token, if credit is more easily available, firms may take greater risks, in the expectation that they can call upon this supply of capital if need be.

⁵² See Hellman, Murdock, and Stiglitz (1997).

⁵³ See Kane (1987).

Figure 1: GDP Growth, Pre and Post Bank Insolvency, 1974-1994

Region	Five Years before crisis	Mean Growth	GDP	Fiv Years after crisis
All Crisis Cases*	3.2%			2.0%
subsample	(290)			(240)
OECD Countries*	2.8%			1.8%
	(50)			(52)
Non-OECD countries*	3.3%			2.0%
	(240)			(188)
Memo: non-crisis countries**	2.2%			2.3%
	(80)			(64)

* A t-test(significant at $p < 0.05$) indicates that the pre-and post-crisis means differ.

** Since there was no crisis in these countries, the sample was split in half, i.e., 1980-87 for the first observation and 1988-94 for the second. Although it should not be necessary, a t-test indicates that there was no significant slowdown in the non-crisis countries.

Source: Caprio, (1997).

Figure 2: Capital Controls and Growth: 1985-1996

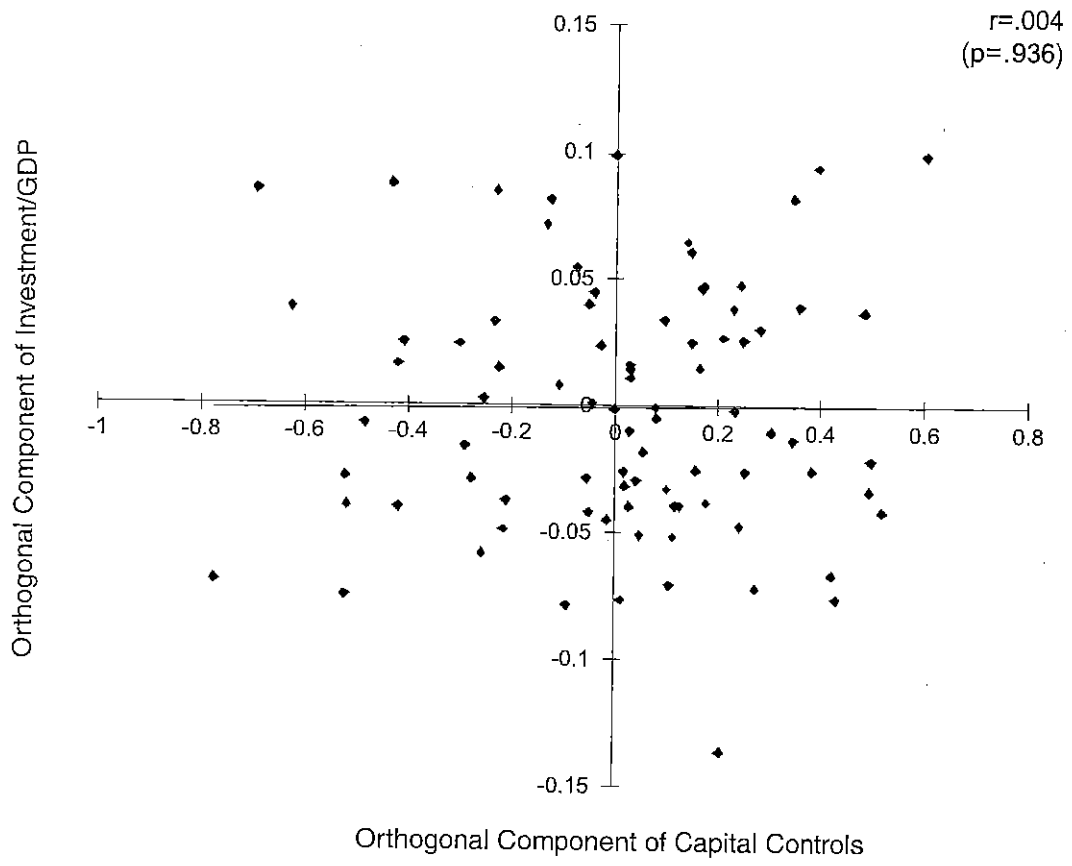


Figure 3: Capital Controls and Investment: 1985-96

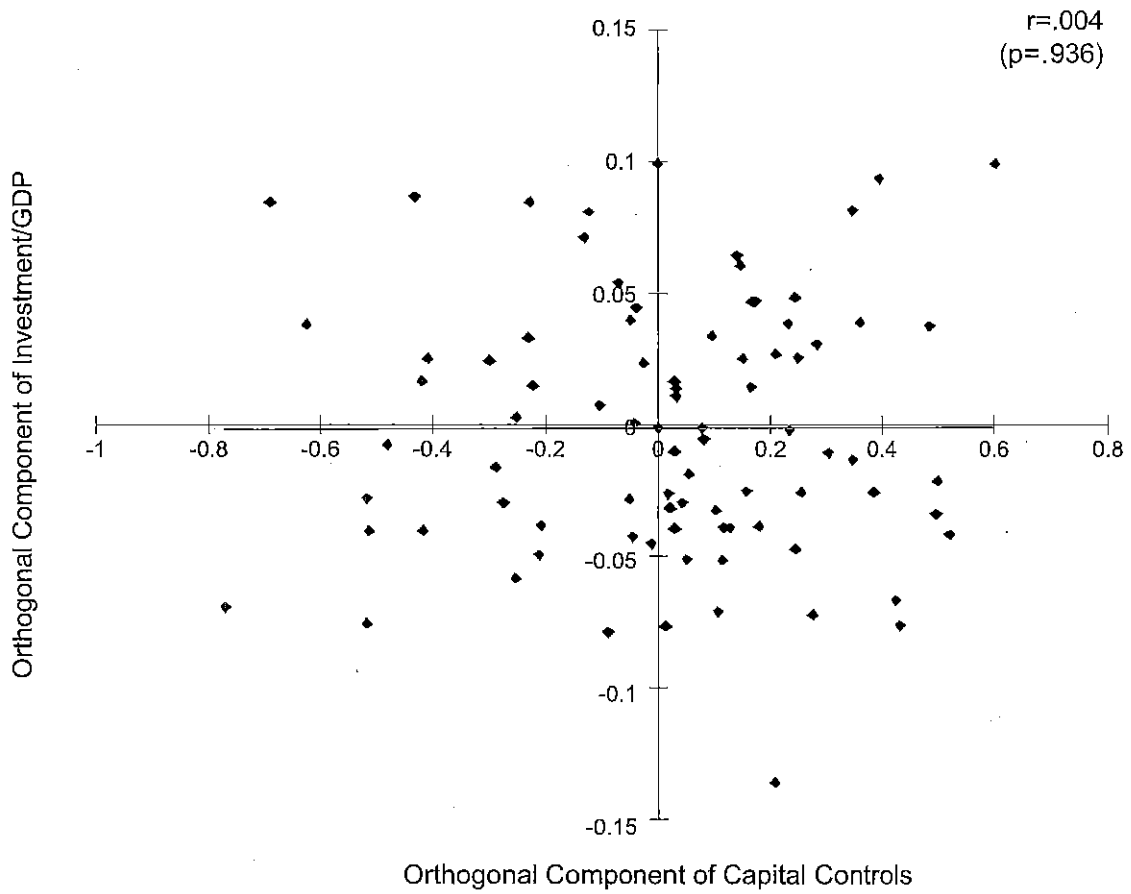
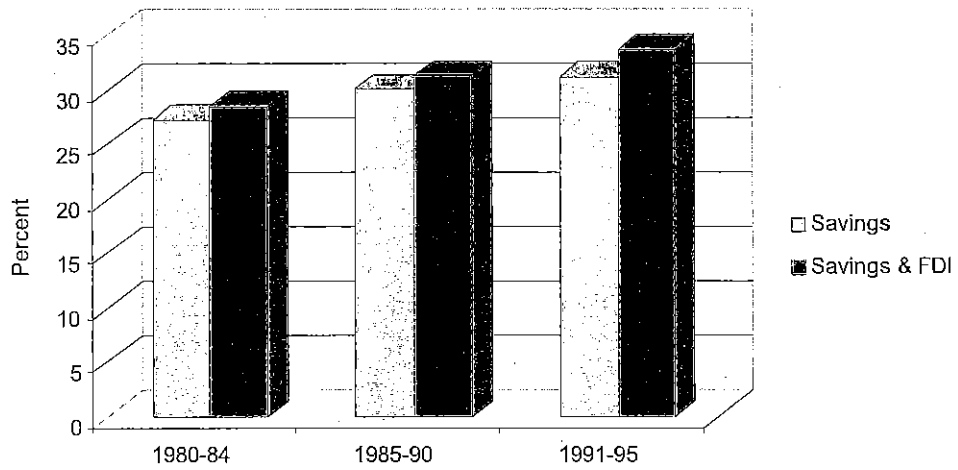


Figure 4: East Asia 5 Savings as % of GDP



Source: 1998 World Development Indicators, CD-Rom.

The high interest rates and fiscal contractions often associated with the crisis precipitated by the capital volatility have, without question, led to economic downturns, a rise in unemployment, widespread bankruptcy, and social and political disruption. Clearly, we lack good counterfactuals, and it is theoretically possible that matters might have turned out as badly or worse in the absence of these “rescue” policies. But a growing and well-founded consensus holds that the crisis responses have themselves increased the crisis countries’ real risks, and added to their variability in output and employment, even though the responses may have helped stabilize exchange rates and served to protect investor capital.

I believe that it is possible to mitigate risks, through appropriate actions both before and after a crisis occurs. Elsewhere, I have spelled out a set of policies that I call “socially just responses to economic crises.”⁵⁴ These policies, and the processes by which they are arrived at, are in many ways markedly different from the approach taken by the international community in recent years. Most importantly, the new international architecture must be designed so that all those who are affected – including the workers and smaller investors, and not just international investors – can make their voices heard, and heard clearly, at the tables where the responses to crises are forged. The framework that has so often prevailed in recent years – where not only do these groups not have a seat at the table, but the terms of the agreement are not even made public as a matter of course – undermines the democratic principles that we all theoretically share. The time has come to end this hypocrisy: either we believe that economic policy, a central function of public policy, should be part of democratic processes or we do not. I, for one, believe that there are few values so central, and so essential to maintaining the civil liberties without which the nightmares of the past may be revisited upon us in the future, than democratic accountability, openness, and transparency in public policy.

And I also believe that without such openness and accountability, it is likely that we will see more policy responses like those of the past – responses that have led not only to deep recession, but to outright depression, to social and political unrest, to stagnation. It has become fashionable among economists to analyze the political economy of rent-seeking, to provide insights into why governments so often fail to live up to their potential and promise. But political economy considerations apply equally to the international agencies and to the outside pressures that affect crisis resolution and government policy reform. They are as

⁵⁴ See Stiglitz (1998b).

present in the governments of more developed countries as they are in less developed countries, and they are reflected in both the advice that is given and the receptiveness to that advice. As social scientists, we need to rise above these parochial interests, to reflect the broader interests of those both in the less and more developed countries. Otherwise, these voices that may not be heard, perhaps because they lack a seat at the relevant tables, or perhaps because they lack the cleverness to express their views in ways that effectively counter well-organized lobbies.

Are New Policy Interventions Desirable?

I come at last to the main point of this talk: elements of the new economic architecture. Let us briefly review where we have been.

- There are extensive market failures in capital markets, resulting in significant discrepancies between private and social returns to risks.
- Institutions, especially within less developed countries, suffer from limitations that reduce their ability – and especially the ability of the poorer members to society – to bear risks.
- Capital (and financial) market liberalization significantly increases the risks facing less developed countries, increases the demands on the regulatory authority, and at the same time, may inhibit their ability to respond to these greater challenges.

But what are national governments, and the international community, to do in response? There are four sets of issues that I want to address in my remaining time.

- What is the role of increased surveillance, improved monitoring, and enhancing transparency?
- What can be done to reduce exposure to short-term foreign-exchange denominated risk?
- What is the role of a new international architecture for work-outs, and what should such a set of arrangements look like?
- What is the potential role of a lender of last resort?

Transparency

I have dealt with the *first question* extensively elsewhere. Transparency is important, particularly in an open and democratic society. And in general, improved information increases the efficiency of capital markets. The lack of transparency probably did contribute to the depth

of the declines, as lenders, faced with lack of information, decided to withdraw funds from all borrowers.

But we should be clear: lack of transparency is not the cause of the current crisis, nor will improved transparency eliminate crises. The fact of the matter is, *most of the relevant information was available when lenders made their decisions to make their risky loans*. The lenders to the Korean firms knew not only about those firms' debt-equity ratios, but also about the relationship between government and firms. Those who participated in the Thai capital market knew, or should have known, about its capital-account deficits.

Interestingly, as the contagion has spread from East Asia to Latin America, fewer commentators have continued to single out transparency as the *cause* of an economy's suffering a crisis. And surely lack of transparency does not explain the withdrawal of credit from the strong Latin American performers: presumably there was plenty of evidence suggesting that these countries were in quite different circumstances than was Russia. Nor, for that matter, was transparency ever emphasized in explanations of crises before 1997. Instead, it seems to have been an *ad hoc* variable introduced to explain the crises in the countries of East Asia.

Yet if transparency makes a country more vulnerable to economic crises, why was it that the countries of East Asia had actually experienced greater economic stability than countries elsewhere in the world over the past three decades? Perhaps because these countries had become less transparent? On the contrary, the evidence suggests that if anything, these countries had become more transparent during the 1990s!

Furthermore, if transparency makes a country more vulnerable to economic crises, the presumption should be that the East Asian countries are significantly less transparent than average. On the contrary, at least some of the affected countries are more transparent than countries on average.⁵⁵ And it is worth noting that the last major set of financial crises in the world occurred in Scandinavia, in countries generally credited with having highly transparent governments.

⁵⁵ Furman and Stiglitz (1998).

As a theoretical matter, increased information can lead to either more or less economic volatility.⁵⁶ Indeed, one of the reasons that bank regulators have been reluctant to endorse greater transparency (aside from the fact the more transparency means less discretionary authority for regulators) is their worry that more transparency would have turned a minor problem into a full-scale crisis. Had there been greater transparency in the United States during the 1980s, it is arguably the case that many banks – in addition to the S & L's – would have gone under. Certainly, the financial crisis would have occurred earlier.

Yes, greater transparency is desirable, and it may even improve matters (though even this is not certain). But it is embarrassing that while lack of transparency was not viewed as the cause of the Mexican crisis (ironically, while low savings was identified as one of the causes of that crisis, the countries next afflicted were the countries with the highest savings rate: so much for the accepted wisdom of the day!), it did become the focus of the international community's attention in the aftermath of the Mexico crisis – and yet it is now blamed for that crisis: so much for the efficacy of the response! And it is pollyannaish to think that future responses will be that much more effective.

Still, as I have said, increased transparency – both of corporations, financial institutions, and governments – would be a positive step. And as the recent report of the G-22 emphasizes, we need not only transparency, we need transparency in the monitoring of transparency.

Reducing short-term liabilities

The *second question* I posed above was how to reduce short-term liabilities denominated in foreign exchange. As I noted earlier, the variable most closely associated with the recent crises is the ratio of short-term foreign-denominated liabilities to reserves. When that ratio exceeds unity, the country is viewed to be highly vulnerable. We should be clear: from a theoretical perspective, it is hard to justify this variable.⁵⁷ But since the data is speaking with some clarity, we must take up the issue of how to control these liabilities. There are at least four ways of doing so, some more useful than others:

⁵⁶ The basic insight is provided by Stiglitz (1975): improved information leads to the differentiation of situations which otherwise would be treated the same. For a more general discussion, see Stiglitz and Furman (1998).

⁵⁷ Though if there are sunspot equilibria, the ratio of short-term foreign-denominated liabilities to reserves may serve as the coordinating mechanism for switching from one equilibrium to another.

- Improving information
- Reducing distortions that encourage such exposures
- Improving prudential bank regulations
- Dampening short term capital flows more broadly

Improving information: The argument for improved information is simple: if only lenders knew the magnitude of aggregate exposure, they would not have been willing to lend as much.⁵⁸ But little evidence supports the conclusion that information by itself would go far to remedy the problem. Much information about the extent of exposure was available to investors, had they thought such information to be worth collecting. They had data on balance of payments and exchange rates. There was even data on vacancy rates in commercial office buildings in Thailand, where so much of the money was going, and on the debt-equity ratio of firms in Korea, the major source of that country's vulnerability. As I noted earlier, the very emphasis on this variable is inconsistent with standard views of how markets work; in those mental models, aggregate quantitative information of this kind is not viewed as relevant, because prices convey all the information that matters. Moreover, gathering this aggregate information has become more and more difficult, thanks to the very process of decentralization associated with highly competitive markets. Finally, the enormous expansion of derivatives raises further questions about the feasibility of obtaining the relevant aggregate information.

The one advantage of emphasizing more information is that it *probably* does little harm, may do some good, and has little cost. I say probably because those who might be adversely affected by the disclosure of information have incentives to change behavior in ways which may impose more risk; banks may, for instance, engage in riskier off-balance sheet activities. There are a variety of ways by which managers may alter the information that is available under virtually any set of disclosure rules, with concomitant changes in the true underlying risk exposure.⁵⁹

⁵⁸ It is worth noting that the call for disclosures of the kind required to provide the relevant aggregate data reflects the recognition of a market failure: there is a public-goods nature to the information, and private parties may have insufficient incentives to disclose the relevant information. When single firms can take positions in the market that are large enough to represent a threat to the stability of markets, as the Fed argued was the case with LTCM, then of course they may well have incentives not to disclose information. Ironically, the bailout of LTCM was not accompanied by calls for better financial market regulation on the part of the Fed, and few even raised the question of whether a firm that was "too big to fail" violated underlying tenets of competition policy.

⁵⁹ See Edlin and Stiglitz (1995).

Reducing distortions: A more promising approach, it seems to me, would be to eliminate the tax, regulatory, and policy distortions that may, in the past, have stimulated excessive short-term capital flows. Examples of such distortions are evident in the case of Thailand, where the tax advantages granted to the Bangkok International Banking Facilities encouraged short-term external borrowing. Subtle examples exist almost everywhere, however, and not just in the crisis countries. Without risk-based capital requirements for banks, for instance, incentives for holding certain assets and liabilities will be distorted. And because even the best of the risk-adjustments are imperfect, there are still distortions even in the best of systems.

Improving prudential regulation: Improved prudential regulation could also yield major gains, and we should pursue this approach. We should acknowledge clearly, however, that this course requires a major step back from the type of financial-market liberalization that has characterized the misguided reforms over the past two decades. Improving financial market regulation will entail both restricting the activities in which banks can engage and changing the risk adjustments for capital adequacy in ways that will significantly alter both how banks raise funds and how they lend. Given the systematic discrepancies between social and private returns – discrepancies that are especially important in banking – I believe these interventions are warranted.

This is not the place to go into a full account of these interventions, but let me list a couple:

- There need to be restrictions on the net foreign exchange exposure of banks. Borrowing in dollars and lending in baht (for example) gives rise to a huge currency risk exposure, making the bank highly vulnerable to changes in exchange rates. These exposures played an important role in the recent crises. Several countries have imposed such restrictions on banks, and these restrictions have been effective in reducing vulnerability. But foreign exchange exposure comes not only directly, but indirectly, through the corporations to which they lend. Firms seeking funds from banks must be required to disclose their foreign exchange exposure, including derivative positions.
- Governments need to impose effective and risk-adjusted capital-adequacy standards that reflect the real risks facing the banks. But this will be difficult. Even banks in the supposedly well-regulated advanced countries made loans not just to Korean banks, but also directly to its *chaebol*, with their high

debt-equity ratios. As a practical matter, however, no government has imposed good systems of capital adequacy. One important lacuna is that although credit risk is typically recognized (though gauged imperfectly), market-value risk associated with changes in interest rates or risk premia are not. Furthermore, regulations do not examine total portfolio risk, including the correlations among market risks and between market risk and credit risk. Even countries such as the United States have deliberately shied away from fully transparent risk-adequacy standards based on modern risk analysis. Accordingly, it is unreasonable to expect such indirect control devices to work very effectively in developing countries. And there are even circumstances in which imperfect risk adjustments can even lead to increased risk-taking.

- Adjusting deposit insurance premia, reserve requirements and capital adequacy standards to reflect the riskiness on both the asset and liability side of banks' portfolio. These risks vary with time, and so the "penalties" would have to be adjusted over time. This would entail imposing higher costs on banks which had more short term foreign denominated deposits than long term deposits; higher costs on banks that lent to real estate, especially as real estate vacancy rates appear to rise; higher costs on banks that lend to firms that have high debt equity ratios; and higher costs on banks that lend to firms that have large unmatched foreign exchange exposure. These higher costs would be reflected in higher charges they would impose on their customers, thereby discouraging high debt equity ratios and foreign exchange exposure on the part of banks.
- Regulators should not focus exclusively on capital-adequacy standards (even if risk-adjusted). Indeed, as we have noted, increasing capital-adequacy standards may actually lead to increased risk-taking, since an increase in capital-adequacy standards will lead to a decrease in franchise value. Moreover, a mechanistic implementation of capital-adequacy standards can exacerbate economic fluctuations: a slight downturn leading to some non-performing loans that put the bank below the capital-adequacy standard forces banks to constrain credit, contributing to the economic downturn. Thus a vicious cycle is set in motion. Indeed, there is concern that just such a vicious cycle has contributed significantly to the current recession/depression in East Asia.⁶⁰

⁶⁰ Good economic management entails a certain degree of regulatory forbearance.

- But there is no reason to believe, as I have said, that bank regulators, even in developed countries, but especially in less developed countries, will be able to implement a fully effective risk management system based on the use of these “price” mechanisms. In many situations, direct controls should be imposed. Even in advanced countries, this principle is recognized: most have outright bans, or limits, on insider lending; they do not simply “charge” a price penalty, reflecting the higher probability that the loan is a bad loan. Thailand had such quantitative restrictions on real estate lending, as we have noted: there current travails can be traced to this since regulatory lapse perhaps – which facilitated the real estate bubble – more than to any other single factor.

The fact of the matter is that even developed countries have had only limited success in creating strong systems of financial regulation, as evidenced not only by the frequent financial crises in those countries, but even more recently by the bailout of LTCM in the United States. Derivatives have made the challenge of regulating financial markets greater; and less developed countries both face greater risks and have weaker institutional capacities. (And indeed financial liberalization, while it has increased the demands on regulators, has decreased their capacity: the private sector has lured away many of the most competent government officials.)

This recognition – that regulating financial institutions is quite difficult – has strong implications. We need to be cautious in exposing these inherently frail financial institutions to undue risk, and regulators need to embrace a broader range of instruments, beyond simply imposing capital-adequacy standards. Many of the so-called reforms undertaken under the name of financial market liberalization may have served to weaken, rather than strengthen, the financial sector, at least given their current stage of development.

Dampening short-term flows at a macro level: The steps that I have described so far are important and will make a difference, but my view is that they will not go far toward eliminating the problem. My doubts stem from two recognitions, both of which I’ve already alluded to: first, that even developed countries have had great difficulties in properly regulating banks; and second, that financial liberalization typically creates a “go-go” atmosphere in which regulatory rectitude is deemed

combined with increased oversight, and perhaps even increased restrictions on the set of risky activities the bank can engage in.

passé, and in which the best and brightest desert regulatory agencies for well-paid private-sector positions.

Indonesia's experience demonstrates that solving the banking problem may not solve the problem of short-term flows: two-thirds of that country's short-term indebtedness was due to corporates. Indeed, if there are underlying economic forces (such as beliefs about returns, whether justified or not) that make such short-term foreign borrowing desirable, then stopping banks from engaging in this borrowing only diverts the flow of funds into other (possibly less efficient) channels. It is like putting a finger in a hole in a dike. The pressures will simply shift elsewhere; the fact that in most countries the problem today is bank borrowing does not really address this issue.⁶¹

The systemic risks to which short-term foreign-currency exposure can give rise – the systematic difference between private and social risks – provide ample justification for taking further measures. The question is only: (i) do effective measures exist that (ii) do not have significant adverse side effects? Among the ideas currently under discussion, and one that I think deserves serious consideration, are inhibitions on capital inflows at the macro level. In thinking about how to accomplish this, we should look to the lessons of the Chilean experience. Chile has imposed a reserve requirement on all short-term capital inflows – essentially a tax on short-maturity loans. The reserve requirement seems to have been effective: it has significantly lengthened the maturity composition of capital inflows to Chile without having adverse effects on valuable long-term capital.⁶² Chile has recognized that the purpose of the tax is to *regulate* the flows: to dampen an excessive inflow in a period of excessive exuberance, and perhaps to encourage inflows when the flow is insufficient. Thus, Chile has responded to the current crisis, in which short-term flows have dried up, by setting the tax temporarily equal to zero.

⁶¹ The analysis above suggested an important caveat to this argument. If banks are required to assess the risk exposure of the corporates to which they lend, and either refuse to lend to corporates with large uncovered foreign exchange exposures or charge them a higher interest rate commensurate with their higher risk, then only corporates who do not depend on bank lending will have undue exposure. Consequently, the failure of these firms will not pose a *direct* systemic risk to the banking system, though if such firms are large in the aggregate, their failure would presumably have significant macroeconomic consequences, and thus impose an indirect systemic risk.

⁶² One of the original objectives of Chile's policy was to provide the government with more room for maneuver in setting interest rates. There is some controversy about how effective the policy has been in accomplishing that goal.

Another instrument that is currently being discussed in countries with a corporate income tax is limiting the tax deductibility of foreign denominated short-term debt. This policy has some compliance advantages: to claim a tax deduction, a corporation would have to declare that the debt was not short-term debt denominated in a foreign currency. Cheating on this would be subject to penalties for tax fraud. And still stiffer penalties could be imposed: the government could announce that any such debt that was not declared by the borrower would automatically be given junior status in a bankruptcy proceeding, thus placing on the lender the burden of ensuring that reporting took place.

Such a policy could be used as a vehicle for imposing a tax on short-term foreign denominated capital flows, even if a country did not have a corporate income tax.⁶³

Workouts

Let me now turn briefly to the *third question* that I raised above: how should we structure the new international architecture for workouts? A keystone in the development of modern capitalism has been limited liability and bankruptcy laws. Without limited liability, individuals would not be willing to invest equity in corporations, the actions of which they could not control and indeed, about which they are typically only poorly informed. Modern bankruptcy laws attempt to balance two sometimes conflicting considerations: promoting orderly workouts, in order to retain business values and minimize production losses; and providing appropriate incentives, so that those engaged in risky behavior bear the consequences of their actions. Thus, the essential ingredients of a bankruptcy law entail a set of rules that specify: (i) changes in governance; (ii) changes in claims on assets; and (iii) trusteeship. A bankruptcy occurs when the firm cannot satisfy claims on it. Trusteeship is necessary because sorting out the claims and

⁶³ Derivatives could be handled in a similar way. Derivative positions would have to be reported; a tax could then be imposed on the exposure. Failure to report the derivative position would automatically give the derivative an unsecured junior status in the event of bankruptcy (the circumstances in which the position would cause the most trouble for an economy.) The rebuttal to this argument—that taxing these transactions (or disallowing tax deductibility for short-term borrowing denominated in foreign exchange) would induce these transactions to move offshore—is of limited concern: The companies within the country would, in the event of a crisis, have only limited exposure, given the junior standing of the liabilities. And the junior status would itself strongly discourage these transactions. If still stronger action were judged desirable, unregistered and untaxed liabilities could be given no standing on a claim against a domestic asset.

governance may take time; in the meantime, it is essential that the assets not be stripped and not waste away. Under the simplistic model, control of assets is assigned to those who can use them most productively, while claims are settled in order of priority, with equity owners receiving something only if all other claimants have their claims fully satisfied. In practice, issues of bargaining, asset specificity (specialized information), incentives, and control intrude on the neat settlement of claims: typically equity owners do end up with residual value, even though debtors' claims are not fully satisfied. The assets may be most effectively administered, at least in the short run, by existing managers (who were the former owners), and those managers need to have the kind of incentives that equity provides.

In the international context, the flight of capital or withdrawal of short-term debt does not remove any of the actual factories. The goal is to ensure that they continue to produce and that the assets are not stripped.

In the absence of orderly workout procedures, countries may worry that unless they issue guarantees or assume private debts, the disruption to the economy will be unbearable. International debtors may "blackmail" the country into converting the private debt into a public obligation. The concerns are particularly acute because courts outside a country may not recognize a bankruptcy judgment of another country; thus, while Country X's bankruptcy courts may rule that the claim of a citizen of Country Y against its companies has been fully discharged, the courts in Country Y may hold otherwise. To be sure, sound drafting of contracts, clarifying the laws under which the contract will be interpreted and enforced, might mitigate some of these problems, but each country may claim to restrict the provisions of contracts that it will recognize. *At a minimum, there needs to be mutual recognition of the provisions of a contract designating that the bankruptcy laws of a particular country will govern in the event of a default.*

It might be desirable to go further, to work towards a common standard of bankruptcy. But we should recognize that there is no single "efficient" bankruptcy standard: there are trade-offs in the design of bankruptcy law, and different societies may value those trade-offs differently. *Bankruptcy law is a political decision, not just a technocratic matter.*

From the perspective of less developed countries, the absence of an adequate bankruptcy law has meant that their citizens have borne an undue part of the costs of bad business decisions. What is at stake is not just a matter of equity, but of efficiency. Lenders have inadequate

incentives to engage in due diligence in making loans. But while the international community has long complained about this problem – the problem of moral hazard – the tendency to bail out lenders at least partially is worse today than it was fifteen years ago. True, in many cases the bailout has been far from complete and lenders have lost money. But to the extent that there is any bailout, lenders have not been forced to bear the full risks associated with their investment, and the belief that in the future this pattern will continue can give rise to the moral hazard. Again, the international community faces a dilemma: it often sees no alternative to a bailout, because the risks of not undertaking an action – of contagion as a collapse in one country spreads to another – seem unacceptable. After each crisis, we bemoan the extent of the bailout and make resolute speeches pledging that never again will lenders be let off the hook to the same extent. And while the international community provides funds to the country in the bailout, these are loans, not gifts: the money typically goes to investors, and it those in the less developed country who end up paying the price.

The international community has established rules of the game that disadvantage the less developed country. If a borrowing country declares unilaterally a moratorium, it is castigated, threatened with a permanent pull-out of capital. It cannot simply declare a “bankruptcy.” It thus must enter into negotiations, and while it is in these negotiations, capital can continue to leave the country, worsening the position of the country. Thus, the cost of delay to the country is greater, and it has an incentive thus to come to terms with its lenders quickly – acquiescing to more favorable terms than it might otherwise, including government assumption of private obligations.

Recently, the international community has shown a great deal more receptivity to the concept of a standstill – in effect, a temporary moratorium while the terms of the work-out are worked out. While ultimately the goal of these policies is to create space for the very difficult job of a workout in the context of private-to-private capital flows with many lenders and borrowers, standstills will have other effects: they most likely will shift bargaining power toward borrowers.⁶⁴

⁶⁴ It is still likely that there will be many instances in which bailouts occur before the size of the “haircut” that the private lenders have to take. The sequential nature of the decisions itself affects outcomes. (The banks may view themselves as being in a different bargaining position *after* the international community has already committed \$50 billion to a country, than before.) Securitization, for all of its advantages, may make work-outs more difficult. At least in the most recent episodes, however, this excuse for not bringing lenders in earlier on has been undermined by the fact that the negotiated rollovers among the large banks worked—in the sense that an agreement

Bankruptcies associated with a financial crisis – and especially the bankruptcies associated with the current crisis in East Asia – are markedly different from typical bankruptcies. When a significant fraction of the firms in a country go bankrupt (by one estimate, two-thirds of the firms in Indonesia are bankrupt), there is *systemic bankruptcy*. In the case of normal bankruptcy, we infer that there is a strong probability that the manager of the bankrupt firm has made a mistake, and there is a presumption that the firm needs new management. But in the case of systemic bankruptcy, no such inference is warranted: not many firms could survive the huge changes in exchange rates or the high interest rates that have prevailed in East Asia. In the case of systemic bankruptcy, sorting out the value of a firm itself is equivalent to solving a set of simultaneous equations, weaving one's way through a tangled web. Each firm has claims on other firms, which too are bankrupt, so that it is difficult if not impossible to ascertain the value of the firm's assets. Moreover, with systemic bankruptcies, it is difficult to contemplate a change in the management of every enterprise (though presumably middle management could be promoted); but if ownership of a firm were turned over to its creditors, if they too are bankrupt, what does this say about the quality of the new governance? Moreover, the transactions costs associated with the ordinary bankruptcy procedures are very high; when an entire economy is bankrupt, the costs will be unbearable. Moreover, no country has enough expertise on hand to handle the caseload.

In all bankruptcies, speed is of the essence, because the assets cannot be effectively employed until these issues are resolved. Assets waste away as bargaining goes on. Bargaining games often entail high levels of inefficiency, as the costs of delay are likely to differ among parties.⁶⁵ Because the resolution of these disputes often takes time – time during which assets can be stripped – effective bankruptcy laws must provide for trusteeship in the interim. But in the case of systemic bankruptcies, there is an additional cost: the macro-economic disturbance. Indeed, there can be a concern about such systemic effects even from the bankruptcy of a single firm – as in the case of Chrysler – warranting (or at least used to justify) a government bailout. Thus, in the case of systemic bankruptcies, the cost of delay is greater, the difficulty of quickly resolving the issues is greater, and the capacity to do so is less. The balance of concerns – among *ex ante* and *ex post* incentives, and

was reached and the agreement served to stabilize the markets. In the future, it may be desirable to include provisions in the securities allowing for a trustee to negotiate on behalf of all of the owners of a particular class of securities in the event of a standstill.

⁶⁵ See J. Farrell (1987).

between incentive, equity, and macroeconomic effects – is different. We want firms not to undertake undue risks, but we presumably do not want them to be so risk-averse that they could withstand interest rate and exchange rate shocks of the kind Indonesia has experienced; that would entail, for instance, a level of leverage far lower than is typical in countries with developed capital markets. I would thus argue that there is a need for a different bankruptcy regime for large systemic risks arising out of macroeconomic disturbances – a new chapter in the bankruptcy code. The essential concern should be restoring or maintaining production (or in the case of financial institutions, restoring or maintaining the flow of credit). Such a chapter would have simplified rules of thumb for allocating claims that could be quickly implemented on an across-the-board basis. It would have a greater presumption for the retention of control by the existing management, and it would have less of a presumption that equity owners should be wiped out.⁶⁶ Worrying about appropriate rules – appropriate burden-sharing – prior to crises and bailouts, rather than the recent practice of waiting until after the fact, may be a key to designing equitable and efficient workouts.

One occasionally hears the argument that governments should not become involved in the resolution of bankruptcies, that these private-to-private contracts should be resolved by private parties alone. We have argued that this view is simply misguided: bankruptcy law is part of the institutional infrastructure of capitalism. Bankruptcy law is an important part of setting the rules of the game. And as capital flows becomes globalized, the rules of the game have to as well. The question is, can we set those rules in ways which reflect the interests of the less developed countries as well as the suppliers of capital in the more developed countries?

Lender of last resort

Finally, let me come to the fourth question: what role is there for a lender of last resort? The original impetus for the founding of the IMF was a concern of a lack of liquidity at the national level. Today's

⁶⁶ In a sense, this new bankruptcy chapter would be a way of "completing" the incomplete contracts. If participants had fully thought through all the contingencies, they might have written down a provision describing what should happen if the exchange rate falls by more than, say, 25 percent or interest rates rise to more than x percent. Every contract could include in it a set of rules for determining what happens in the circumstances labeled bankruptcy. There are some significant advantages associated with having those rules provided publicly. (The offer of a particular set of rules could lead to a process of adverse selection, which would itself give rise to further inefficiencies.)

globalized capital markets have made these issues of even greater international concern.

Several issues have been raised: First, with free flows of capital, can the international community provide enough liquidity to sustain a currency against which there is a run? Indeed, a lender of last resort was not able to stave off runs against banks in the Great Depression. Today, we recognize that we need more safeguards, notably including deposit insurance. And in the case at hand, it is not just the flight of foreign capital which is at issue, but of domestic capital as well; in fact, the latter has been responsible for much of the capital outflows in recent crises. The equivalent to deposit insurance – a guarantee against devaluation – simply is not feasible.

If one lets the exchange rate float freely, then of course one does not need a lender of last resort. The concern is that large fluctuations in exchange rates exact a large toll on the economy, and therefore one should be willing to pay a significant price to avoid these fluctuations. This assumes, as we noted earlier, that one can distinguish between movements that are just “noise” and movements that reflect true changes in the exchange rate. The former should be eliminated, the latter should be allowed.

Again, the required size of the bailout fund depends on what other instruments are available to stabilizing the exchange rate and how willing the country is to use those instruments. For instance, the action typically recommended is raising interest rates, which exacts a high cost on the economy (just as exchange rate volatility does). Indeed, the evidence is that changes in interest rates are more systematically related to financial crises than are changes in exchange rates. The relative magnitude of the effects depends, of course, on such variables as the foreign exchange exposure of firms and their level of indebtedness, the maturity structure of the debt, and the extent to which capital markets are segmented.⁶⁷

When the debt is private, and increases in interest rate have strong adverse effects on the economy, such that the probability of default increases as the interest rate increases, then increasing the interest rate (at least beyond a very small amount) may actually lower the (certainty equivalent) expected return, and thus lead to an increased reluctance to roll over debt and increased capital flight. Interest rate increases simply cannot stymie the flight of capital and stabilize the exchange rate.

⁶⁷ See Furman and Stiglitz (1998a).

From the perspective of *international stability* the key issue is contagion: to what extent will different policies – bailouts attempting to stabilize exchange rates versus greater flexibility in exchange rates – minimize the extent of contagion? One of the concerns arising from the Great Depression was the threat of competitive devaluations, and the spectre of competitive devaluations has been raised repeatedly in the recent crisis. *But this argument misses the fundamental difference between devaluations in a world of the gold standard and the current situation.* Today, changes in exchange rate represent changes in relative prices. Not everyone can lower their price relative to each other, though they can all lower their price relative to gold. Today, effectively, devaluations represent a lowering of a currency's value relative to the dollar. There cannot be a continuing round of competitive devaluations.

There can, of course, be a "struggle" between, say, the countries striving to lower their value relative to the dollar and those (the U.S., say) that might not want to see the dollar appreciate. But the U.S. can presumably respond by lowering interest rates (and if it worries that doing so will lead to inflation, because it is already at full employment, it can engage in an offsetting fiscal contraction). But note that unlike competitive devaluations under the gold standard, which give rise to disturbances but have no real effect, a round of interest-rate decreases serves to enhance the liquidity of the world economy, reinflating it in the face of contractionary pressures. Thus, under the new regimes, the "competition" sparked by devaluations may serve to restore strength to the world economy.

By contrast, consider the alternative policy response – bailouts organized in an attempt to stabilize exchange rates. An intrinsic problem of any lender of last resort is to avoid the moral hazard problem that the availability of funds engenders. There needs to be a presumption that a bank that runs into a problem is illiquid, not insolvent, and governments recognize that deposit insurance itself can give rise to perverse incentives. That is why strong supervision is an essential part of any system of lender-of-last resort *cum* deposit insurance. In practice, economies with good economic management combine strong regulatory oversight with forbearance (that is, discretionary implementation of regulations) in the face of a severe downturn.

Similar concerns have made conditionality an essential part of any international bailout (though there is little evidence that such conditionality actually changes behavior, partly because in critical cases the conditions do not seem to be effectively enforced.) But this raises a

new set of problems: conditions that are enforced when they should not be.

One example of this is the excessively rigorous implementation of capital-adequacy standards, which can lead to the vicious cycle described earlier. The balancing of risks associated with forbearance is a political decision, involving trade-offs among different risks; and there is no reason to believe that different countries will or should make precisely the same choices, even under similar circumstances. Most importantly, these are not technocratic decisions to be delegated to international bureaucrats, no matter how competent they might be. And that is one of the reasons that a system of an international lender of last resort will probably not work: countries will not be willing to give up their sovereignty, to turn over these critical regulatory decisions, to an international body, even if that body were in some sense democratically accountable.

Another example, at the country level, is the insistence on the quick reduction in trade deficits. Without a marked change in exchange rates, the only way that this can be accomplished is through a reduction in imports, which in turn is engineered through contractionary policies that lead to economic downturns (recessions). Of course, at the international level, the sum of all trade deficits is zero, and if a few countries – such as Japan and the EU – insist on pursuing policies that lead to large trade surpluses, the rest of the world must (on average) have trade deficits. A reduction in one country's trade deficit must increase the trade deficit of another, unless some third country's trade surplus is reduced. We have replaced beggar-thy-neighbor policies associated with protectionism and competitive devaluations by a far more destructive set of policies: As each country tries to reduce its trade deficit, some other country's trade deficit increases. But while the earlier mechanisms involved a strengthening of one's own economy, possibly at the expense of others, in the new regime, the price paid for a bailout is the weakening of one's own economy: economic downturns in one country are thereby translated into weaknesses in another, in an even more vicious way than under the old regime.

Thus, in evaluating the two alternative mechanisms – flexible exchange rates, possibly with offsetting lowerings of interest rates that help reignite the world's economy, versus a system of relatively fixed exchange rates, supported by a lender-of-last resort and successive economic recessions as trade deficits are transferred from one country to another – the former seems decidedly preferable.

*On the optimal size of the lender of last resort: The problem of dynamic consistency*⁶⁸

If there is a bailout fund, how large should it be? If there is a fire, it is hard not to employ all available resources to extinguish it (while taking into account the danger that another fire may break out, so that one may want to keep some of the fire engines in reserve). But the larger the fire-fighting capacity, the greater the moral hazard.

Attention has been directed at two forms of moral hazard – that of countries undertaking excessively risky actions, and that of lenders making excessively risky loans. There is a growing consensus that the first does not impose a serious problem: while clearly incentives are affected, it seems unlikely that the effect is large. On the other hand, there is a widespread perception that in recent years lenders have taken into account the likelihood of a bailout, at least in their lending activity in some countries.

The greater the capacity of the fire department, the lesser the incentive to take care. Recognizing this (and the fact that because of externalities and a variety of forms of insurance, there is likely to be excessive risk-taking in any case), fire departments should be organized smaller than they would be if there were no incentive effect. In other words, the departments should be small enough that someone who looked naively at the frequency and magnitude of fires and the marginal benefit and costs of increased fire-fighting capacity, but who *ignored the incentive effects*, would be led to believe that the fire department should be expanded.

The distortion could be partly corrected by charging a fee from those who have a fire (regardless of cause). But doing so creates a new problem: one can avoid the fee by putting out the fire on one's own, and therefore any fees generate an incentive to delay calling the fire department, thus exacerbating the conflagration.

Actions by lenders

I have focused my attention on actions that borrowers (the less developed countries) can undertake – either on their own or else collectively in collaboration with the more advanced countries – to help stabilize capital flows, to correct the market failures, or to mitigate their consequences. But the preceding section has focused on the establishment

⁶⁸ This section is based on joint work with Peter Orszag.

of a lender of last resort – a bailout fund – that would presumably be financed by the more developed countries. To the extent that there are costs of providing the bailouts, there are costs borne by the advanced countries for which they should make the beneficiaries, the lenders in their own country, pay. Just as depositors have to pay a premium on their deposits for deposit insurance, in this view lenders should be forced to pay a premium (perhaps adjusted for risk), which could be used to fund the bailout fund.⁶⁹

⁶⁹ Presumably the magnitude of the fee would depend on the magnitude of the discrepancy between social and private returns to lenders, which would depend on a number of variables, including the bankruptcy regime, the size of bailouts, and the magnitude of the systemic risks incurred through increased short-term lending.

Concluding Comments

I have outlined in this lecture many of the key elements of a new international architecture. There is a growing sense that all is not well with the current system. It has resulted in more frequent and larger crises, each of which imposes a huge toll that may last years into the future and that is not distributed evenly. The frequency and depth of these crisis suggests that more than government policies are to blame: something is wrong with the architecture. Indeed, if anything, policymakers today in the developing world are more economically literate and sophisticated than those of a quarter century ago and we would therefore expect that their policies would have improved over time.⁷⁰

In my recent lecture before the Commonwealth Ministers of Finance in Ottawa, I went even further and argued that “[t]he situation is intolerable. We have an international economic architecture that has led to more frequent crises, and yet our means of responding have proven inadequate. While there is much talk about pain, the poor have absorbed more than their share of the pain without sharing commensurately in the promised gain.”

All too often, attention has been focused on exchange rates, inflation rates, trade and fiscal deficits, capital flows and interest rates, and officials boast of their achievements when they manage to stabilize these variables. But these are not the variables that are of interest: what matters is economic performance – output, employment, incomes – and stabilizing exchange rates does little good if output and incomes continue to plummet. The focus on the financial variables is a classic case of confusing means with ends.

But even more important is the fact that behind the statistics lie people, individuals and families whose lives and livelihoods depend on the economic policies and structures we put into place. Long after the exchange rate between the rupiah and dollar in November 1997 or the baht in July 1997 have become a distant memory, the scars will still be there. And I am not talking about the losses suffered by currency traders who gambled on the stability of the exchange rate and lost, but those within the country whose education has been stopped, and the children whose development has been stunted through malnourishment.

⁷⁰ To be sure, democratic institutions may impose new constraints on the actions of policymakers, which may have adverse effects on, say, economic stability. But the architecture itself must take account not only of human fallibility, but of the nature of the political system.

Already, data on Indonesia are showing a significant drop in birth weights, which is an indicator of malnourishment during the prenatal period and a precursor to an abundance of later-life problems.

Behind these problems lie a host of market failures, discrepancies between social and private costs and benefits. Arguably, these market failures have grown over time, partly because of misguided attempts at financial and capital market liberalization, which have failed to recognize the role that regulation plays in aligning private and social returns. The increasingly large bailouts are both a symptom of, and a cause of, these burgeoning problems. As I noted in the introduction, the frequent bailouts, the worries about systemic risks and contagion – all are evidence of large discrepancies between social and private returns, or large externalities. Just as in the arena of our ecological environment, where the market failures associated with large externalities have given rise to beneficial government interventions, so too is there a need for action in the arena of our global economic environment. The market failures associated with the large externalities necessitate stronger actions, ones that go beyond the often simplistic palliatives of improved information and prudential regulation and the elimination of distortions that exacerbate the externalities. Those actions are desirable, and in some cases progress in these areas will be slow and difficult; but we should not confuse the difficulties of progress in this arena with the fruits that they will bear. It should be clear that even if we were fully successful in these reforms, they are not enough; we deceive ourselves if we think they are.

In this lecture, I have presented an outline of some of the goals and principles of the new architecture:

Goals of reform

The overarching goal of reform should be to improve social welfare – paying due attention especially to the costs of risk, when there are imperfect institutions for sharing and absorbing risks, and to distributional objectives. The reforms must aim to reduce market failures and lessen the consequences of these failures. But, more specifically, within the reform agenda, we can identify three necessary pillars of reform:

- *Crisis prevention*: making crises less likely. Most of what I have talked about in this lecture has focused on reforms that, for instance, dampen volatile short-term capital flows. Such reforms may serve multiple goals – including, for example, giving governments some

extra room for maneuver to pursue policies that maintain the strength of the domestic economy. But at least one central goal is to insulate these economies, if ever so slightly, from the vicissitudes of international capital markets, which have imposed high costs even on countries that have pursued sound economic policies.

- *Crisis responses* that reduce the consequences for the *real* sector, and especially for the poor. No matter how successful we are in building an architecture that reduces the likelihood of crises, we will not be able to eliminate them. The costs of crises when they occur depend on how we respond to them. Designing response strategies is difficult: there is always a great deal of uncertainty about the consequences of economic policies, and this is especially true when one is trying to predict the reactions of investors.⁷¹ Well-designed policies must take into account this uncertainty, as well as the lags in responses, the asymmetries in losses, the non-linearities in the economy's structures, and the irreversibilities (hysteresis) in the economy's behavior. One implication is that in the face of a serious threat of a major economic downturn, the focus of response must be to maintain the overall macro- strength of the economy.⁷² (And indeed, to the extent that lack of *confidence* is viewed to be the underlying problem, it is hard to see how confidence in an economy or its currency can be reestablished as the economy plummets into a deep recession or depression.) There is a growing consensus, for instance, that at least part of the losses associated with the East Asian crisis can be attributed to misguided policies – misguided in the *ex post* sense in that they were almost certainly too contractionary, and almost certainly (though more controversially) misguided in the *ex ante* sense in that they did not take fully into account the above factors.
- *Safety nets*. No matter how good we are at responding and how equitably we design response packages, crises will lead to unemployment, and almost inevitably the poor will bear a large share of the adjustment costs. This, at least, has certainly been the case in the past.⁷³ In most less developing countries, safety nets are weak or absent. In East Asia, full employment was the safety net. In many developing countries, the very process of development weakens traditional safety nets, and this occurs before new, more formal risk-

⁷¹ Keynes' reference to their unpredictable behavior in his use of the term "animal spirits" should have provided a word of caution to those who overconfidently predicted how "markets" would react to particular policy packages. See Furman and Stiglitz (1998).

⁷² For a more extensive discussion of the design of responses, see Stiglitz (1998b).

⁷³ See, for instance, Furman and Stiglitz [1998].

sharing institutions are put into place. Thus, a third essential pillar of reform is the construction of more effective safety nets.

Principles of reform

This lecture has set out several principles to guide the reforms:

- The architecture (using the term broadly to include all three pillars) must recognize *human fallibility*.
- The architecture must pay due attention to the social and political consequences and must lead to an equitable sharing of the burden of adjustment: even if one did not value these in their own right, one should recognize that they are necessary for political and social instability. Without political and social stability, it is impossible to restore either the strength of or confidence in the economy.
- The architecture must pay due attention to the political process; otherwise, reforms will not be politically sustainable. The welcome democratic reforms that have occurred in many countries have at the same time put into place complex political dynamics. We must not ignore these dynamics.
- The key goal of reform should be to reduce risk, increase economic security, and increase economic efficiency – including reducing the disparity between social and private benefits and costs and reducing market failures and their consequences. In thinking about the goals of reform, it is imperative that we not confuse means with ends. Capital market liberalization and financial market liberalization are not ends in themselves. Advocates of these reforms need to justify them by showing how they achieve these broader goals. As we have seen, these liberalizations – at least if not executed with better attention to sequencing, pacing, and broader institutional development than has often been the case in the past – may be an important source of the increasing instability in less developed countries.
- Most importantly, we need to keep a balance among prevention, response, and safety nets: the weaker the safety net, the more important it is not to expose a country to excessive risk and to design responses that limit the burden imposed on the poor. In recent years, typical responses imposed even on countries with weak safety nets have resulted in the poor bearing a heavy burden. The implication is that *unless and until we can design safety nets and response functions that lead to more equitable burden-sharing, we should take great care to design architectures that limit risk*. Recent discussions have focused on how to limit risks, recognizing that one needs to have strong financial institutions before one can engage in financial and capital market liberalization. But our analysis suggests an even

greater caution: even with strong financial institutions, many of the shocks facing countries come from outside the country, and even countries with reasonably strong financial institutions will encounter difficulties in dealing with the shocks. There almost surely will still be financial crises. Thus, a country's willingness to bear these shocks must be tempered by a realistic assessment of whether it can respond to these shocks in ways that limit the damage and whether it has safety nets that can lessen the costs borne by workers, small businessmen, and others.

Setting one's sights

I have argued that there are interventions that can raise welfare. In evaluating these interventions, our sights should be modest. As one of my friends put it, on a rainy day, a leaky umbrella is better than none at all. Or, to switch metaphors, a dam serves a useful purpose if it stops most floods. It is true that the water will eventually make its way from the top of the mountains down to the ocean, but a good dam – one designed with spillways and escape routes – stabilizes the flow. In doing so, it can both reduce risk and increase overall productivity.

We should not allow ideology to be the enemy of the pragmatic and realistic, just as we should not allow the perfect to be the enemy of the good.

The swinging pendulum

Today, we face two dangers. From one side, we risk being led by the ostriches, with heads buried in the sand, who do not see the fundamental problems that they may not face in the security of their own lives, but to which millions of the poor have now been exposed. But on the other flank, we are threatened also by a growing fringe that fails to recognize the potential benefits that the market economy can bring, not only to the suppliers of capital, but to workers as well. Our task is to look out for and try to constrain the swinging pendulum of opinion. Part of the underlying problem we face today is that during the reforms of the past two decades, the advocates of the market economy let the pendulum swing too far on one side. In pushing market-opening, they failed to emphasize sufficiently the importance of certain market and non-market institutions that make the market work better in developed countries. These institutions have not only improved the shock-absorption capacity of the system as a whole, but have also enhanced the ability of even the poor to withstand those shocks. But in the coming months, as the costs of the crisis become ever more apparent, we will face the danger of the

pendulum swinging too far to the other side. The impact of this swing could be a complete withdrawal from globalization.

Our goal must be to strive to reach a new balance, one that recognizes that today's architecture has shattered the lives of millions and millions of people, that we collectively have a responsibility to do more to minimize that damage, and that the well-being of the poor must be a core concern in the design of the new architecture. We should have a simple criterion: Will that reform make the poor and their children be better off, and will it reduce the risks they face? Finally, will the risks they are asked to face justify the gains that they – not someone in a far-away country, nor even some wealthy entrepreneur in their own capital city who quickly sends his money abroad at the first suggestion of trouble – that *they*, the poor, actually receive?⁷⁴

⁷⁴ Or to put it more blandly, in the language of economists, policies need to be evaluated using an egalitarian social welfare function. In evaluating which policies are appropriate for *their* country, governments need to focus on the consequences for *their* citizens.

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