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ABSTRACT

Over the past 20 years there has been a proliferation of emerging market crises and a vast accumulation of commentary -- descriptive, theoretical and applied-- highlighting the origins and mechanics of each crisis and of crises in general. And there is plenty of analysis on how to deal with crises both in terms of prevention and of cures. Is it possible now to distill from all this a simple set of propositions that summarize the experience and capture the chief lessons?

This paper sets out a few propositions that summarize what is known and accepted. The interest in doing so is to promote a set of presumptions about what is unsound practice with a presumption that it cannot fail to engender, in time, a crisis. At the center of that discussion is the role of balance sheets. Moreover, crises are not just financial experiences but rather involve large and lasting social costs and important redistribution of income and wealth. That makes it especially important to secure agreement on what constitutes bad practice and identify areas of continuing controversy.

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A PRIMER ON EMERGING MARKET CRISES

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Over the past 20 years there has been a rash of emerging market crises and a vast accumulation of commentary – descriptive, theoretical and applied – highlighting the origins and mechanics of each specific crisis and of emerging market crises in general. And there has been plenty of analysis on how to deal with these crises, both in terms of preventive measures and cures. Is it possible now to distill from this body of literature a simple set of propositions that summarize the experiences and capture the chief lessons?

This paper attempts to set out a few propositions that summarize what is known and accepted about emerging market crises. The interest in doing so is to promote a set of presumptions about what are unsound practices: those practices that will ultimately lead to a crisis. Moreover, crises are not simply financial experiences, they result in large and lasting social costs and the significant redistribution of income and wealth. These consequences makes it especially important to secure agreement on what constitutes bad practice and to identify areas of continuing controversy.

I. Slow vs. Fast, Bad Regimes vs. Big Collapses

A useful distinction can be drawn between old-style or slow motion crises, based on the financing of the current account in a financially repressed economy, and the new-style balance sheet crises of a financially opened economy. The distinction is not only useful in highlighting what is new, it is necessary if policy makers are to understand the great speed of new-style crises and their devastating cost compared to earlier experiences.

Old-style crises involve a cycle of overspending and real appreciation that increasingly weakens the current account. While resources are ample, and before real appreciation bites into growth, the process is politically popular. However, in time, resources become more limited and unpleasant options (which cannot work indefinitely) such as demand restraint and trade restrictions are imposed. Ultimately devaluation comes and the process begins anew. The "stabilization" may last if there is little accommodation; but if money is passive and the increased external room is used for quick expansion, the process is more nearly a *regime* of an inflation-devaluation spiral.

Exchange rate adjustments in an old-style setting have very little of a crisis aspect to them. Richard Cooper has noted that they invariably involves the fall of the finance minister but not much more. The central issue, as Diaz Alejandro (1966) noted, is the fall

of the real wage and the politics surrounding it.[1] Because finance is repressed, the build up of sensitive balance sheets is ruled out.

Example: One of the few old-style situations still in play is Egypt. Occasionally, a widely anticipated moderate devaluation relieves the trickling reserve losses caused both by current account imbalances and suitcase capital flight.

An important part of the story, obscuring its simplicity, is the occasional arrival of external resources (e.g. from new access to the world capital market or the World Bank), which makes room for better growth without the early arrival of the external constraint. But these resources typically come in the form of debt, which has a direct adverse effect on the current account. Accordingly, unless there is significant productivity growth, the trend in real wages will have to decline in order to generate debt service. Alternatively, maintaining the existing trend in real wags requires either new external resources or a reduction in debt.

A new-style crisis involves doubt about the credit worthiness of the *balance sheet* of a significant part of the economy – private or public – and the exchange rate. It may originate with questions about either the balance sheet or the exchange rate, but when there is a question about one, the implied capital flight makes it immediately a question about both. In no time, capital flight wipes out reserves and precipitates a currency collapse. The process is only brought to an end by a resolution of the credit issues and the commitment of monetary policy. External intervention has high leverage in resolving credit and credibility issues.

The capital account plays a key role in the run-up to the crisis and in its unfolding. There is too much credit on the way in and far too little once the crisis hits. As the bankers adage goes: "It's not speed that kills, it's the sudden stop." Frank Taussig (1928) captured this point when he wrote:

"*The loans from creditor countries... begin with a moderate amount, then increase and proceed crescendo. They are likely to be made in exceptionally large amounts toward the culminating stage of a period of activity and speculative upswing, and during that stage become larger from month to month so long as the upswing continues. With the advent of crises, they are at once drawn down sharply, even entirely*."

The central part of the new-style crisis is the focus on balance sheets and capital flight. Balance sheet issues are, of course, fundamentally linked to mismatches; even if there were solvency there would still be vulnerability related to liquidity problems. Exchange rate depreciation, in a mismatch situation, works in an unstable fashion to increase the prospect of insolvency and hence the urgency of capital flight.

[1] Diaz Alejandro (1984), writing about the debt crisis of the early 1980s, keenly appreciated that finance had now become the key actor and aptly signaled this with the catchy title "We are not in Kansas anymore…" He would have needed yet another title to characterize the extraordinary increase in size and speed of the finance factor in recent crises.

Because new-style crises involve the national balance sheet they have a far more dramatic impact on economic activity than mere current account disturbances; this heightened impact arises from the magnitude of the financial shock as well as the *disorganization effects* stemming from illiquidity or bankruptcy.[2]

II. Vulnerabilities

There are three primary sources of vulnerability: a substantially misaligned exchange rate, balance sheet problems in the form of nonperforming loans, and balance sheet problems in the form of mismatched exposures. The last of these sources includes *maturity* mismatches leading to liquidity issues as well as *currency* mismatches. In a situation where the willingness to hold assets on current terms is impaired – either because there is a question about the exchange rate or about the willingness and ability of debtors to meet their liabilities – these misalignments or mismatches become explosive.

The exchange rate can be the starting point of a crisis when it is patently out of line. This is typically the case in exchange rate-based disinflation programs, which succeed in bringing down inflation but do so at the cost of a significant real appreciation. The resulting widening of the current account deficit and the disappearance of growth (from both appreciation and the increased interest rates required to attract continued financing) make it clear that the program cannot be sustained. At some point (as discussed below), a speculative attack occurs which cannot be met by higher interest rates or reserve depletion. At that point, currency depreciation interacts with the balance sheet. The worse the state of the balance sheet, the bigger the collapse.

The initial large real appreciation of an exchange rate is often justified by the argument that it reflects dramatic restructuring-induced productivity growth, which in turn generates Balassa-Samuelson style inflation. This argument is invariably suspect because it should not affect manufacturing price-based competitiveness measures and it is less likely to be the case in an environment where unemployment is high and rising and the current account is deteriorating.

What are sustainable rates of real appreciation or of current account deficits and what invites a crisis? Because of such issues as lasting improvements in capital market access, persistent terms of trade improvements, and productivity growth, emerging economies can expect to experience persist real appreciation; that is, they can expect to finance some deficit/GDP ratio on an ongoing basis. However, it is safe to say that a rapid real appreciation – say over 2 or 3 years – amounting to 25 percent or more, and an increase in the current account deficit that exceeds 4 percent of GDP, without the prospect of a correction, takes a country into the red zone.

Example: Mexico with its recurrent end of sexennio currency collapses is an example where the exchange rate and the current account are in the foreground and where concern

[2] *Disorganization effects* are developed in Blanchard and Kremer (1997) to help understand the output collapse in transition economies. Despite the fact that they have not previously been applied in the setting of emerging market crises, they are useful a guide to grasping dramatic output adjustments.

about the possibility of devaluation (or the fact of a small devaluation) triggers massive capital flight. Because devaluation is postponed by shortening and dollarizing debt (the Tesobonos issue discussed below) the balance sheet issues triggered by the currency depreciation are huge.

Consider next a balance sheet with substantial nonperforming loans. Nonperforming loans (or vulnerable loans not quite gone yet) limit the room for higher interest rates and hence are a major problem for an interest rate defense. If interest rates are lowered, the currency comes under attack. If interest rates are raised, the loan portfolio goes even further under water. This is a common situation leading up to a crisis.

Example: Thailand and Malaysia in 1997 had substantial nonperforming loans; in Thailand they were in real estate and consumer finance, in Malaysia they included stock market loans that had financed a market boom. Protracted unwillingness to raise mandated lending rates brought about a "carry trade," which created an offshore market, put pressure on the currency, and ultimately led to crisis.

A large budget deficit and a large short-term public debt are both sources of vulnerability. A change in the growth prospects undermines the sustainability of debt, as does an increase in world interest rates; both undermine the willingness to hold and add to the portfolios of lenders. The same is true for a perception that the willingness to service the debt is impaired. The result is a flight from public debt and that flight, invariably, is into foreign assets. The resulting funding crisis translates into increased interest rates, which further worsen the fiscal situation and thus act in a destabilizing fashion.

Example: Brazil's crisis was centered on a large short-term debt, a portion of which was dollar-linked; the prospect of depreciation put debt service into the express lane and actual depreciation completed the picture. Argentina in late 2000 is another case in point. A deteriorated growth outlook put in question the financing of budget deficits and the rollover of the public debt by external creditors. Interest rates shot up and the prospect of a massive capital flight was in the air. A massive IMF loan has postponed the fiscal crisis until further notice.

If the exchange rate is fixed, reserves are depleted and that process increasingly adds currency risk to the equation. If the rate is flexible, depreciation ensues and increasing depreciation is projected. That, in turn, can spread risks to foreign exchange-denominated parts of the balance sheet and aggravate capital flight.

Banking problems frequently play a role in and occasionally even initiate a currency crisis. When creditors of short-term inter-bank lines, or depositors, withdraw from suspect banks, the resulting flows tend to go offshore, thereby translating into reserve losses, depreciation, or both. The worse the nonperforming loan situation, the larger the maturity mismatching in the balance sheet, and the more significant the mismatching of denominations on the asset and liability side, the more likely the situation is to become a banking and foreign exchange crisis.

Of course, it is invariably important to look behind the balance sheet of the banking system and examine the underlying exposure generated by the banks' loan customers. While the banks' balance sheets may look proper, the loan customers may have the mismatching on their books which would be shifted onto the banking system if the loan customers ran into trouble.

It is also important to recognize that a banking system's situation can change significantly in a very short time period. For example, this can easily happen if a concentration of liabilities (say real estate loans) suddenly becomes bad, or if a spell of high interest rates causes the general deterioration of a loan portfolio that had been just a bit above marginal. If the banking system's funding is short term, the makings of a crisis come on quickly.

Example: The Turkish crisis of December 2000 is a great example. In a situation involving a large number of bad banks (though not the major part of the banking system), a withdrawal of credit lines triggered a banking crisis. The central bank financed the run on the banks by pumping in credit, only to repurchase the liquidity by selling foreign exchange. Within days, reserve depletion threatened the maintenance of an IMF-supported exchange rate based stabilization program.

The corporate sector, like the banking system, has balance sheets that are vulnerable to mismatch with respect to both maturity and denomination. The larger the corporate sector's short-term debt in the national balance sheet, the more vulnerable the country is to a funding crisis which then becomes a currency crisis. Once again, in emerging markets, when credit to a particular sector is withdrawn, it is a capital outflow rather than a substitution into other assets. Consequently, balance sheet problems become currency crisis issues.

Example: Indonesia and Korea are examples where markedly bad balance sheets – huge debt equity ratios and large foreign exchange exposure – were a major part of the crisis situation. Typically, it takes weeks to even figure out how large the external exposure is. Creditors are reluctant to take haircuts and debtors are under no pressure to yield. The protracted debt problem overshadows post-crisis credit normalization.

Under a fixed exchange rate regime, capital flight immediately raises the question of how much reserves the central bank has and is willing to commit. Under managed or flexible rates, it raises the question of how far and fast the exchange rate will depreciate. Either way, the question is how urgent is it to bring money out. Of course, once that question emerges, the answer is very urgent indeed. Reserves are almost never enough to withstand a balance sheet attack and often they are less than reported.

Vulnerability can, at least conceptually, be determined through a value at risk exercise: What are the relevant shocks? What are the exposure areas? How large a deterioration of the balance sheet would result? Mismatches are the key triggers of extreme vulnerability. And the worse the risk in one part of the balance sheet, the more likely that it will spread

to the other parts of the balance sheet, if only because, in case of doubt, creditors want recovery and asset holders hold off lending.

Example: The Asian economies which experienced crises had bad corporate financial structures (high debt, high foreign exchange debt) relative to equity and a high ratio of short-term external liabilities to reserves. The combination made for fireworks.

Table 1 Critical Indicators: 1996 (%)		
	Corporate Debt/Equity	Short-term External Debt/Reserves
Indonesia	310	177
Korea	518	193
Malaysia	150	41
Philippines	160	80
Thailand	250	100
Source: World Bank		

III. Timing

There is no hard rule about the timing of crises. In fact, it is surprising often long what are essentially unsustainable situations can be given extra lives. This is particularly true when an election is in sight. With an election on the horizon, creditors are willing to believe that most anything will be done to hold off a crisis or a corrective devaluation. And governments will do most anything, including high interest rates or preferably a shortening of maturities and re-denomination into foreign exchange of claims. As a result, crises happen after elections, not before. This is akin to the myopic political business cycle but no less real. It is clear that the longer the crisis is postponed, the worse the balance sheet becomes and the larger the fallout when the crisis occurs.

Example: Mexico always postpones crises until after the election; and Brazil, Korea, and Russia have all done the same. The post-election discovery of a Taiwan banking problem, and crisis, is yet another instance.

Bad balance sheets – as opposed to significant overvaluation, escalating current account deficits, or vanishing growth – in principle can last almost indefinitely provided net inflows cover up the hole and transparency is absent ("clear water, no fish" as the Chinese saying goes). However, the proverbial straw can break the camel's back. A relatively minor event might upset a precarious refinancing scheme, or a suspicion raised in one part of the world might cause creditors to kick the tires in another part of the world. Importantly, changes in the relative attractiveness of domestic and foreign assets or in the growth scenario can bring sudden tests of the balance sheet, and with them the move to crisis. If the balance sheet is bad enough, quite small events are sufficient to undermine the funding scenario and trigger the crisis.

Example: Turkey had long been on the short list of countries likely to experience a crisis, without actually experiencing one. However, the failure of a Romanian subsidiary of a bad Turkish bank, in an environment of political agitation about a sleazy banking system, got the stone rolling and within days reached the prospect of immediate currency collapse.

Contamination fits the pattern of bad balance sheets just waiting for an accident. Eventually, the right circumstances materialize and a crisis ensues. It takes longer than you think but then happens faster than you would have thought. A shift in the external environment – G3 exchange rates, Fed interest rates, a slump in new commodity exports all can work as triggers.

Example: The spread of crisis in Asia fits this pattern.

IV. *Good Balance Sheets, No Crisis*

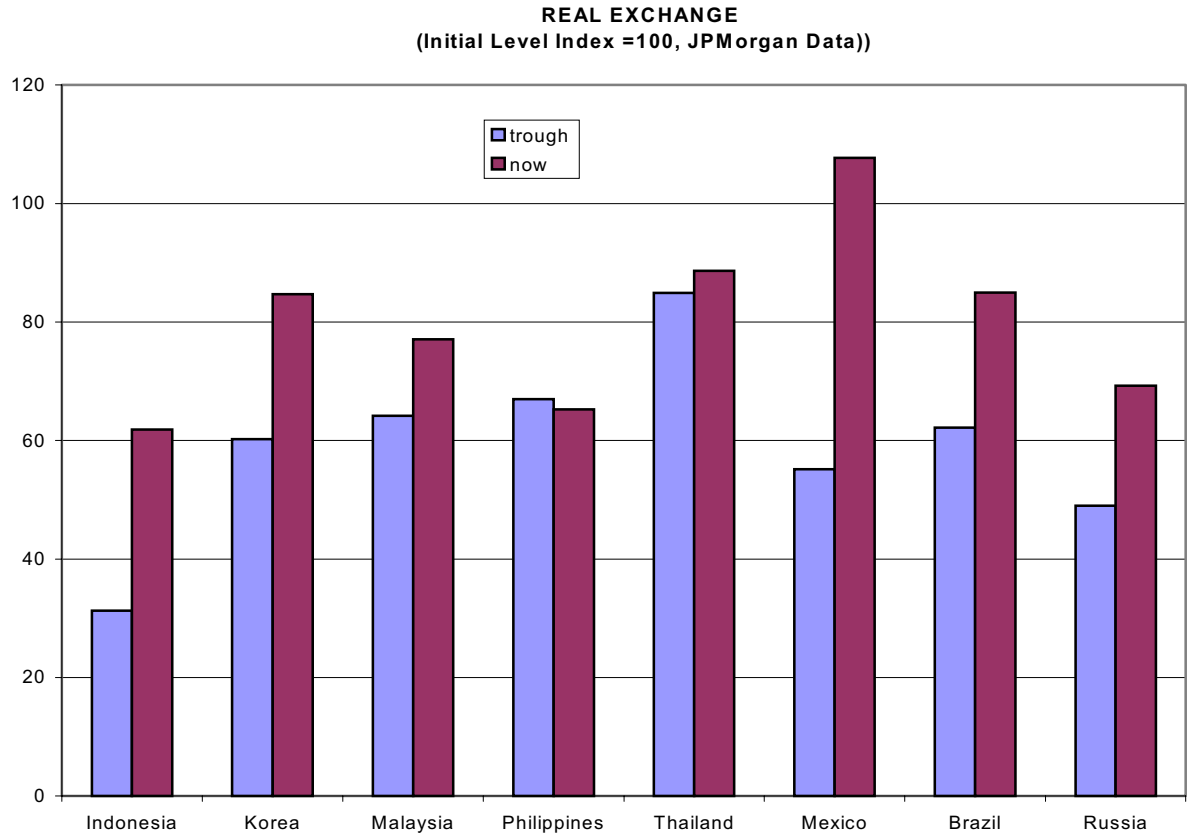
Do countries with good balance sheets and a currency that is not vastly misaligned face crisis risks? Of course, there is the trivial answer that for any exchange rate or any balance sheet there is a shock large enough to make it unviable. But the striking fact of the past 20 years of crises is surely this: well-managed emerging market economies have suffered slowdowns in growth, high interest rates, and currency depreciation. But they have not suffered crises. Moreover, the better the balance sheets, the better the ability to absorb shocks to capital flows and trade without outsized adjustments in exchange rates or interest rates. The proposition "good balance sheets, no crisis" risks being circular; but pending a good counter example, let it stand.

Example: The good balance sheets of banks in Singapore, Hong Kong and Argentina are a large part of why these countries, while surely affected, were not pushed under by the crises of Mexico or Russia-Brazil.

IV. *Why are Collapses so Large?*

Currency collapses are large for two reasons. First, the value at risk is extraordinarily large because of the interaction of mismatched factors. Second, once a meltdown is underway, governments have a difficult time establishing their willingness and ability to engage in an uncompromising stabilization effort. In this environment, the IMF's role is to restore credibility and hence credit.[3]

[3] For the Asian economies the initial level is January 1999; for Mexico, January 1994; and for Brazil and Russia, January 98. The most recent data are for December 2000.



The interaction of mismatched factors produces an instability in the response of asset holders: the more the exchange rate goes, the more bankrupt the balance sheet and hence the more reason to deny credit and get out. The higher the maturity mismatch, the more liquid the creditors and the more easily the debtor is moved to the gray zone between illiquidity and insolvency. The interaction of depreciation and illiquidity causes markets to cease functioning – record interest rates and a vast initial overshooting of exchange rates are the rule.

The crisis itself weakens the government politically and makes it doubtful whether it is willing to stick with a policy that dries up credit, thereby starving off capital flight. The absence of effective property rights and the total absence of transparency renders the possibility of bottom fishing very hazardous. Hence there are no capital inflows, no stabilizing speculation, and strong downward pressure on asset prices, the currency, and the balance sheets.

Example: Indonesia, with a political collapse and an ongoing struggle about who will pay the debts and who will gain, offers a clear case of an unresolved crisis.

Disorganization in the *Blanchard-Kremer* sense (see footnote 2) becomes a significant issue when creditworthiness collapses because bankruptcy spreads and attacks the real economy. The real economy is a complex layer of relationships. First there are input-

output relationships that can be disrupted at any point in the chain when a critical supply or demand link disappears, potentially bringing down the whole chain. Second, there is often a credit relationship (rather than cash and carry) that is sensitive to creditworthiness suspicions and can become the disruptive factor. Disorganization is an important part of the output collapse.

The IMF's role in reversing the dramatic immediate events is twofold. First, it offers a commitment device for governments to underwrite a stabilization strategy that is known to work. Second, it offers temporary credits and debt reorganization, including lock-up of short-term credits commercial bank creditors, and thus helps stem the outflows.

High interest rates may hurt growth and the balance sheets but they definitely stem the depreciation of the currency. Ultimately that is the single most important beachhead of the stabilization program. As long as the currency melts, there is no prospect of stabilization. (We discuss alternative controls below).

Example: In the collapse phase currencies depreciate formidably relative to any current account-based view of what is necessary for adjustment. They are driven by the capital account. When a credible program is put in place, there is a rapid normalization as in Korea or Brazil.

The adoption of and demonstrated adherence to an IMF strategy soon stops the hemorrhage and sets the economy on a path to currency recovery and a decline in interest rates. The combination of post-collapse over-depreciated exchange rates and a credible credit program provides for appreciating exchange and declining interest rates. A virtuous circle is entered. Wavering commitment, by contrast, remains reflected in volatile currency and high interest rates.

V. Costs

Currency crises are quite expensive; a history of recurrent crises even more so. The costs arise in three ways: a substantial increase in public debt associated with the crisis, a disruption and loss of output, and the possibility of a socially controversial redistribution of income and wealth.

In a currency crisis, because the government will bail out banks and often companies, public debt increases substantially, and with it future tax liabilities. The period of high interest rates in the run-up to the crisis and in the stabilization phase, and the fall in output and hence tax revenue in the crisis period, further contribute to the deterioration in public finance. Finally, the increases in debt may itself bear the seeds of future crisis if it occurs in a situation in which the government is unable to meet the higher debt service burden through taxation or a reduction in spending.

The numbers can be staggeringly. The government burden from a bank bailout can easily total 20 or even 30 percent and more of GDP. In addition, there is easily a 10 or 15

percent increase in debt from high interest rates applied to a large debt and from recession-induced tax losses.

There is also always a large loss of reserves, which are sacrificed during the defense part of the crisis. To the extent that the reserves are captured by the private sector, they merely amount to a transfer. Often, however, they are the counterpart of a bet the government makes with the rest of the world and loses.

To the extent that a crisis experience deteriorates a country's credit rating, there is also a lasting cost in terms of a higher international cost of capital.

A currency crisis redistributes wealth and income. It is said that more money was made in the few years of collapse of the Holy Roman Empire than in the long years of its existence. Similarly, emerging market crises enrich those who are able to quickly convert their assets into foreign currency or to get the government to assume their debt while retaining their assets. These transfers are routine. The striking regularity is the dramatic fall in real wages and employment and the bankruptcy of small debtors.

Periods of recurrent currency crises translate into poor growth performance, short horizons, and slow increases in the standard of living, a deteriorating social and economic infrastructure. Major asset sales along the way, increases in external debt, and spurts of reform can obscure the degradation of the productive economy at any one time. But ultimately medium term growth rates, far from reflecting catch-up, reflect the costs of persistently poor finance.

Table 2 Latin American Growth Per Capita	
1980-90	1990-99
-0.3	1.7

VI. The Alternative Medicine Controversy

There are two areas of controversy. The first concerns capital controls and the second concerns the appropriateness of IMF programs. On both issues the controversy is alive and conducted with great vehemence.

The appropriateness of IMF programs is quite obviously questioned because it seems, at least on the surface, to make a bad situation worse. Raising interest rates at a time when balance sheets are already under water makes a bad debt situation worse. Raising interest rates and tightening fiscal policy at a time where the economy is already in steep decline seems to be outright counter productive.

What are the alternatives? The capital flight will certainly continue as long as the central bank pumps in credit at unchanged interest rates. The reason is that the immediate gains

from borrowing in a depreciating currency far outweigh the cost of borrowing. Hence borrowing and capital flight remain active, depreciation deepens, balance sheet problems widen – there is no obvious end to the process.

There are, of course, two ways of trying to reconcile unchanging interest rates – rather than extraordinary short run levels of 100 or 1000 percent p.a. – with an end to capital outflows. One possibility is credit allocation controls and another is capital control. Controls raise obvious questions of effectiveness, but even if effectiveness is taken as given, there is the issue of efficiency. If the controls were temporary that might not be an important issue, but if they were expected to persist then suspending the capital market would be much more of an issue. For the system at large, the presumption that controls are the response to outflows will reduce the perception of liquidity and hence translate into a higher cost of capital and more trigger-happy investors.

Surely there is agreement that the better strategy is to reduce the risks of a crisis situation – for example, by predetermined limits on liquidity and profitability – but that leaves open the question of what to do in the midst of a crisis: IMF or controls. The debate continues.

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