

The Origins of the Crisis

The essence of the crisis was a huge, sudden reversal of capital flows. Economies that had been attracting large amounts of foreign capital suddenly became subject to withdrawals of short-term lines of credit, an exodus of portfolio capital, and offshore flight by domestic investors. Table 1 shows that net private capital flows into the five most affected Asian economies (South Korea, Indonesia, Thailand, Malaysia, and the Philippines) jumped from \$37.9 billion in 1994 to \$97.1 billion in 1996. The bulk of these new inflows came as loans from private creditors (commercial banks plus non-bank creditors, such as bond-holders), which tripled in just two years from \$25.8 billion to \$78.4 billion. But in the last half of 1997, these inflows suddenly reversed themselves, with net private capital flows turning to an outflow of \$11.9 billion. This turnaround of \$109 billion in one year (actually just six months), from an inflow of \$97 billion to an outflow of \$12 billion, is equivalent to about 10% of the pre-crisis GDP of these five countries.

One reason that such a large amount of capital was able to leave so quickly was that a substantial portion was structured with very short-term maturities. In each of the severely-hit economies, short-term foreign exchange liabilities of the economy grew in excess of short-term foreign exchange assets of the economy, leaving the economy vulnerable to liquidity problems in the event of a sudden withdrawal of foreign capital. Presumably, foreign lenders (mainly banks) had made short-term loans under the assumption that they would routinely roll over such loans in the future. In the event, they pulled these loans abruptly in the second half of 1997.

Table 2 shows data on one type of foreign liability, short-term debts (with maturity of one year or less) owed to foreign commercial banks, and one major type of foreign asset, the official foreign exchange reserves of the central bank. In Thailand, Indonesia, and Korea, short-term debt exceeded available foreign exchange reserves just before the crisis hit. The ratio was slightly lower (but still high) for Malaysia and the Philippines, two other Asian economies that were hit badly, but not so severely, by the crisis. Short-term debt far exceeded reserves in Mexico and Argentina just before those two countries were hit by financial crisis. The ratio of short term foreign debt to reserves hit 1.7 in Mexico and 1.3 in Argentina in June 1994. The pattern also held for Russia in mid-1998, when it faced intense balance of payments pressures. In the case of Brazil, the data show that in June 1998, its reserves slightly exceeded its short-term debt. However, by late September, Brazil's reserves had dwindled to \$45 billion, below the level of its short-term debt, and the *real* was under intense attack.

It is important to keep in mind that short-term debts owed to foreign banks are but just one type of short-term foreign liability. Portfolio capital, bank deposits held by foreign non-banks, long-term loans with conversion covenants, and hedging instruments can all be withdrawn very quickly, putting further pressure on foreign exchange reserves and the exchange rate. At the same time, there may be other forms of foreign exchange assets in addition to official reserves that can be drawn upon in the event of a foreign creditor panic. A priority for future research should be to measure in a more comprehensive manner the short-term cross-border assets and liabilities

facing emerging market economies, and the role of various types of financial claims in the onset of financial panic.

It is also important to note that for countries operating on pegged exchange rates, a panic by domestic investors can also deplete foreign exchange reserves, and thereby precipitate a financial crisis. For example, holders of sight deposits in the banking system, or domestic holders of treasury bills, might decide suddenly to convert their domestic assets into foreign exchange, thereby draining the foreign exchange reserves at the central bank (such, after all, is the classic framework for understanding a balance of payments crisis). The Brazilian government, for example, owes about \$250 in domestic debt (with an average maturity of about seven months), and redemptions of these notes have added to the pressure on the *real*. In earlier studies (e.g. Sachs, Tornell, and Velasco, 1995), the ratio of M2/Reserves was used as an indicator of the vulnerability to such a crisis. In fact, our reading of the current round of panics is that they all occurred in circumstances with very high levels of *cross-border exposure*. Thus, we find that the ratio of short-term foreign debts to reserves is a more sensitive indicator of vulnerability than the ratio of M2 to reserves. Future crises, however, may be triggered by domestic investors rather than foreign investors. Once again, a priority for future research is an exploration of the relative propensities of foreign and domestic investors to financial panic, as a step in creating a better early-warning system.

In the recent crises, the key question is why did all this capital suddenly leave? One year ago, as the capital withdrawals swept across Thailand, the Philippines, Malaysia, Indonesia, and later, Korea, there were four main culprits identified as causes of the crisis: (i) weaknesses within the Asian economies, especially poor financial, industrial, and exchange rate policies; (ii) over-investment in dubious activities resulting from the moral hazard of implicit guarantees, corruption, and anticipated bailouts; (iii) financial panic, in that what began as moderately-sized capital withdrawals cascaded into a panic because of weaknesses in the structure of international capital markets and early mismanagement of the crisis, and (iv) exchange rate devaluations in mid-1997 in Thailand (and late in the year in Korea), that may have plunged these countries into panic.

Early in the crisis, almost all analysts (led by the IMF) pointed towards weaknesses in the Asian economies and corruption-cum moral hazard, and a few (notably the editorial page of the Wall Street Journal) laid the blame mainly on the initial devaluations. Panic and weaknesses in international capital markets were not the explanations of choice, though we favored such a view in our first assessment of the crisis (Radelet and Sachs, 1998a). Now, one year later, the underlying weaknesses in international financial markets are much more widely recognized, with widespread calls for changes in the international financial architecture. Some individual analysts, such as Paul Krugman, have substantially changed their point of view on the causes of the crisis. His initial analysis (Krugman, 1998) argued that problems within the Asian economies, combined with corruption and moral hazard, led to wild over-investment and a boom-bust cycle largely anticipated by rational market participants. A more recent analysis (Krugman, 1999) argues that such weaknesses cannot explain the depth and severity of the crisis, nor the fact that it occurred in so many countries simultaneously, and instead lays the blame on financial panic and overly-

liberalized international and domestic financial systems.

Weaknesses in the Asian Economies?

The first, and originally the most widely-held view, was that the crisis was entirely due to deficiencies within the Asian economies themselves. In this view, these weaknesses had been small enough to be overlooked in the early 1990s, but became much larger and more obvious in 1996 and early 1997. This change led to a sudden fundamental shift in perceptions about the outlook for continued growth, and a rapid withdrawal of financing.

As we have argued previously, there is little doubt that there were growing problems in each of the Asian crisis economies, that in a way could be understood as side effects of the region's very successes.² Many of the problems had their origins in financial liberalization policies introduced in each of the crisis economies in the late 1980s and early 1990s that led to a very rapid expansion of the financial sector, and enthusiastic lending by foreign creditors. Entry requirements into financial services were loosened, allowing new private banks to open. Banks were given much greater leeway in their lending decisions, and stock and bond markets began to grow and develop. Importantly, banks and financial institutions had new freedoms to raise funds offshore. New institutions were developed, such as the Bangkok International Banking Facility (BIBF) that were designed to offer new financial services and attract investment, and were actively encouraged to borrow offshore to finance their activities. This combination led to a rapid expansion in both offshore borrowing and domestic lending, with a resulting investment boom. *Bank claims on the private sector increased by more than 50% relative to GDP in just seven years in Thailand, Korea, and Malaysia.*

The financial liberalization directly contributed to the buildup in foreign capital flows, since much of the domestic credit expansion was financed by domestic banks and other financial institutions borrowing offshore. In Thailand, for example, the foreign liabilities of banks and financial institutions rose from 5% of GDP in 1990 to 28% of GDP in 1995. Korean merchant banks borrowed heavily offshore, and then lent the funds to large corporations (chaebols), which became very heavily leveraged by 1997 (Borensztein and Lee, 1998). It is worthwhile noting, however, that in Indonesia, credit growth in the financial sector was more modest, as Indonesian corporations borrowed directly offshore. Nonetheless, the Indonesian corporate sector itself became vulnerable to offshore panic, a point that was painfully proved in late 1997 when the corporate debts were suddenly called in by foreign creditors.

As is so often the case with rapid financial sector liberalization, the government's capacity to regulate and supervise these transactions did not keep pace. At the same time, the banking system was unable to allocate the greatly increased flows on an efficient basis. Bank loan

² See Radelet and Sachs (1998a, 1998b) and Sachs (1997).

quality began to deteriorate, though not catastrophically. Some banks were undercapitalized, non-performing loans were rising gradually, and many basic prudential regulations (such as lending to affiliated companies) were regularly broken, with little penalty. There is little doubt that these weaknesses in the financial sector were a key precondition of the crisis. These problems were especially severe in Thailand. But were these problems, in and of themselves, severe enough to warrant a crisis of the magnitude that actually took place in so many countries? Our view is negative.

Several pre-crisis indicators suggested that banks in Indonesia and Malaysia were actually stronger in 1997 than they had been just a few years earlier. For example, average non-performing loans actually *fell* between 1994 and 1996 from 12% to 9% in Indonesia (and even more sharply for privately-owned Indonesian banks), and from 8% to 4% in Malaysia, according to data from the Bank for International Settlements (BIS, 1997). While these indicators are themselves flawed (bad debts often aren't recognized, or reported, until macroeconomic difficulties hit), they do undercut the view that Asian banks were recklessly in trouble on the eve of the crisis. Indonesian banks, unlike banks in the rest of the region, had borrowed very little offshore, and domestic bank lending had increased only modestly in the early 1990s. Barry Bosworth (1998) reports an index of bank strength based on 1996 ratings of commercial banks by Moody's Investor Services which indicates that there was little to distinguish the quality of banks in the Asian crisis economies from non-crisis emerging markets.

In the case of Brazil, few analysts point to the banking sector as a core cause of the current crisis. Strikingly, and in sharp contrast to Asia, the IMF program in Brazil does not require any banking reforms, instead focussing almost exclusively on fiscal policy. And yet, Brazil was subject to a rapid reversal in foreign capital flows and has at several points been on the verge of a full-blown crisis. Thus, weak financial systems provide part of the story in Asia, but do not fully explain the Asian crisis, and are still less a general explanation of sharp reversals of capital flows into emerging markets.

Exchange rate policies surely exacerbated Asia's problems. Governments in each of the crisis countries kept their exchange rates fixed (or changed them at very predictable rates) in the early 1990s, and gave every indication that these policies would remain intact in the future. These policies helped encourage short-term capital inflows, since investors perceived little likelihood of a loss from exchange rate movements. They also kept the prices of tradable goods and services relatively fixed, while the prices of non-tradable goods and services (especially construction and property) rose as a result of the investment boom. As a consequence, the real exchange rate (measured as the ratio of the prices of tradables to nontradables) began to gradually appreciate (that is, the ratio fell). Several studies have attempted to estimate the extent of the overvaluation of the Asian currencies in early 1997. Although methodologies and data sources differ somewhat, most analyses suggest that currencies became modestly overvalued, especially between 1994 and 1996.³ Our own estimates suggest overvaluation of about 20% in Thailand, Indonesia, Malaysia,

³ See Chinn (1998); Furman and Stiglitz (1998); and Radelet and Sachs (1998a).

and the Philippines, and about 10% in Korea.

The pegged exchange rate arrangements posed much greater problems in 1997, when governments ran down their foreign exchange reserves to defend pegged currencies that were increasingly judged by the markets to be unsustainable. As the reserves ran down, vulnerability to financial panic increased. Looking over the course of the 1990s, we can say that Asia's pegged exchange rates posed at least three problems. First, they gave over-confidence to investors, who ignored exchange risks on the belief that nominal exchange rates would be pegged indefinitely, or at least long enough to allow for a graceful exit. Second, they permitted a growing overvaluation in real terms, thereby squeezing exporters, and drawing too much investment spending into non-tradeables sectors. Third, they set the stage for financial panic, since Asian governments were *committed* by their public promises to use the foreign exchange reserves to defend the currency, even after everybody came to regard the rate as overvalued. This promise forced governments to deplete their foreign reserves in a vain defense of the currency, and then it forced them to break their word when they had to abandon the currency defense once the foreign exchange reserves are depleted.

The combination of the investment boom and fixed exchange rates led to over-investment in some sectors, and a moderate decline in investment quality. One indicator of eroding investment quality is the fact that incremental capital-output ratios rose across the region, although it is worth noting that they rose by an amount not much greater than in several non-crisis emerging markets. In each country, an increasing share of bank loans went towards construction, real estate, finance, and other services. In Thailand, both property and equity share prices soared, then began to plummet in late 1996, putting pressure on financial institutions that had lent to these activities and thereby helping to set the crisis in motion. But this pattern was less obvious in other countries. In Indonesia, for example, there was essentially no change in property prices in Jakarta after 1992. In Korea, overinvestment was focussed more on certain manufacturing sectors, such as semiconductors and steel, rather than on real estate and services.

Perceptions about Asia's growth prospects may have begun to shift after export growth slowed abruptly in 1996. Export growth rates (in value terms, measured in US dollars) dropped sharply in Korea, Malaysia, China, and especially in Thailand (where the value of exports actually fell 1% in 1996 after expanding by 25% in 1995). In Indonesia, export growth had slowed less sharply, but the slowdown had started in 1993. In Korea's case, the slowdown was mainly due to a drop in export prices, itself partially due to Korea's over-investment in some sectors, especially semiconductors. For example, world prices for semiconductors fell 20% between 1995 and 1997 after rising sharply in the early 1990s. Malaysia, too, suffered mainly from weak prices. By contrast, Thailand's export prices remained stable, but export volumes dropped sharply. Indonesia's slower growth was also mainly due to sluggish volume performance.⁴

⁴ For more detail, see Radelet and Sachs (1998b), p. 31. The original data are from the

Several factors apparently combined to weaken export performance. First, Asian firms became less competitive during the early 1990s because of the real exchange rate appreciations discussed above. According to data compiled by Werner International (1996), wage rates in the apparel sector in Malaysia, Indonesia, and Thailand all grew by 12 percent per year or more between 1990-95, with Malaysia recording the fastest growth of all at 23 percent per year. Second, as mentioned, over production led to a glut in some sectors and thereby to falling export prices. Third, competition from China and Mexico put some moderate pressure on Asian exporters, especially in certain activities, such as textiles.⁵ The combination of these factors may have raised some concerns as to the long-term competitiveness of Asian exporters. In turn, slower export growth may have created concerns on the part of creditors about future growth prospects and the ability of Asian firms to continue to service their debts. However, export slowdown was hardly large enough to cause a significant economic collapse.

In summary, the Asian economies clearly exhibited several growing weaknesses in the mid-1990s, including rapidly-expanding and under-supervised financial systems, large short-term capital inflows financing increasingly weak investments, and a sharp slowdown in the growth of export revenues. The key issue is whether these problems add up to a crisis of the magnitude that was seen in late 1997 and 1998. Banking systems in Asia had clearly been opened up too quickly, but by most objective measures, the banks were not substantially weaker than those in many other emerging markets. Investment quality was weakening, suggesting the prospect of a significant downturn in several sectors, but not an complete economic collapse. These problems clearly contributed to the reversal in creditor perceptions and to the onset of the crisis. However, on balance, it is difficult to make the case that these problems were so severe as to warrant complete collapse of the currencies in the region, a total breakdown of banking systems, and deep recessions. Asia=s weaknesses required modest adjustments, but were not severe enough to inevitably lead to a full-blown financial crisis. Thus, there is more to the story.

Moral Hazard?

A second and in some ways closely related view was that Asia=s collapse was the inevitable result of overinvestment resulting from a widespread belief among creditors that they would be bailed out if their investments went bad. Two different moral hazard arguments have been pushed forward, although they are rarely carefully distinguished. The first suggests the IMF/US Treasury bailout of Mexico in 1995 reassured Asian investors that they too would be rescued if things got out of control. According to this viewpoint, creditors recognized all the growing problems in Asia, and believed hat at some point these economies would collapse, just as

⁵ For a more complete discussion of Asian export competitiveness both before and after the crisis, see Hussain and Radelet (1999).

had happened in Mexico. The only question was when, and so creditors were simply using short-term lines of credit as a means of betting on the timing of the end of the Asian bubble.

Although this argument has some appeal, it does not stand up under close scrutiny. Almost no one believed that Asia was headed for any kind of collapse, even as late as early 1997. With the exception of some growing concerns about Thailand starting in mid-1996, investment bank reports were all glowing in their praise, ratings agencies continued to give positive outlooks, and the IMF and World Bank regularly lauded these countries with only a few modest suggestions for reform. There simply were very few voices that argued that Asia was heading for any kind of collapse. Scarcely a negative voice was heard until it was too late.⁶ The overriding sentiment across Asia after the Mexican crisis was not *Athe IMF will bail us out too,*≡ but rather *Ait can=t happen here.*≡

Moral hazard, on the other hand, almost surely played a role in Russia. Investors clearly had grave doubts about Russia=s medium-term stability. Risk premia on Russian securities were very high. Investors talked openly about the risk of collapse, and about the safety net provided to Russia by the IMF and (implicitly) the G-7. Russia was simply viewed as *Atoo big to fail.*≡ The indicators of moral hazard in the case of Russia simply underscore the lack of such phenomena in the case of Asia.

A second moral hazard argument is that creditors felt secure that they would be repaid for lending to specific projects that were controlled by companies with close connections to the government. Akerlof and Romer (1996) show that a moral hazard crisis can develop when banks are able to borrow funds on the basis of explicit or implicit public guarantees. When banks are under-regulated, they may use the funds in very risky or even criminal ventures. Krugman (1998) argued that the Asian crisis is a reflection of excess gambling and stealing by banks that gained access to domestic and foreign deposits by virtue of state guarantees (although, as noted, he subsequently changed his mind, and even criticized such views in later writing (Krugman, 1999)).

There is little question that many banks and firms expected government support to ensure their profitability and their ability to repay their creditors. None of the chaebol in Korea had been allowed to fail for at least a decade before Hanbo steel collapsed in early 1997. State-owned banks, especially, believed they would always be bailed out. Firms owned by members of the Suharto family in Indonesia and their close allies had every reason to expect special favors to ensure continued profitability. Furthermore, there is little question that creditors knew this, and were unlikely to impose stringent loan conditions on well-connected firms. However, it is probably more accurate to say that these creditors *expected these firms to continue to be profitable and thus repay their loans*, rather than that they expected a crash and a subsequent bailout. Indeed, creditors often complained in Asia that weak bankruptcy laws made it nearly

⁶ Yung Chul Park (1997) is an exception.

impossible for them to collect on collateral in the event of non-performing loans.

Much has been made of corruption in Asia, with countless commentators arguing that cronyism and Asian business practices were ultimately at the heart of the crisis. There is little question that there was extensive corruption in Asia, and that these practices undermined the allocation of capital and weakened financial systems. Suharto's growing family empire, for example, contributed to the crisis both because of the government ultimately guaranteed many risky investments and because Suharto was unwilling to make the family firms make adjustments in the early stages of the crisis. But two facts make it hard to argue that the crisis was primarily the result of corruption. First, corruption on at least a similar scale had existed in Asia for decades, and yet these economies had grown very rapidly without any sign of a crisis. If anything, corruption in Korea was probably worse in the mid-1980s than in the mid-1990s, and yet it did not face a similar crisis at that time.

Second, corruption is a generalized problem in almost all emerging markets. As shown by Furman and Stiglitz (1998) and Radelet and Sachs (1998b), the Asian crisis economies as a group do not stand out on business surveys and other measures as being more corrupt than non-crisis emerging markets. Yes, Indonesia scores at the bottom of almost all rankings, but Thailand scores comparable to, and Korea higher than, many non-crisis emerging markets such as Chile, Colombia, India, China and Taiwan. Corruption simply is not the obvious characteristic that separates the crisis countries from the non-crisis emerging markets. That is not to suggest that corruption either helped these countries or was benign -- far from it. Rather, while cronyism certainly created some of the vulnerabilities that set the stage for the crisis, it alone cannot account for the timing, severity, or even location of the crisis.

Creditor Panic?

The third interpretation is based on the idea that the crisis is mainly the result of a self-fulfilling panic of investors. This interpretation is described in detail in Radelet and Sachs (1998a and 1998b). This story goes as follows. Yes, there are vulnerabilities: falling foreign exchange reserves, slowing export growth, fragile financial systems, and overvaluation of the real exchange rate. But these vulnerabilities are not enough to explain the abruptness and depth of the crisis. As some have put it, *The punishment is much worse than the crime.* The solution to this conundrum is that rational investors may have an incentive to pull money out of an otherwise healthy country if the other investors are doing the same thing. In more formal terms, the crisis is a *Bad* equilibrium in a situation of multiple equilibria. The bad equilibrium occurs when each investor comes to expect that the other investors will suddenly pull out their funds. It then becomes rational for each investor, in fact, to behave just as expected, that is, to suddenly withdraw the loans that are outstanding. When this happens, a severe economic crisis unfolds.

The key analytical question is when such a self-fulfilling panic can occur. In our view, the main condition is a high level of short-term foreign liabilities relative to short-term foreign assets. It is exactly in that situation that each creditor knows that it must flee a country *ahead of other*

creditors in the event of a withdrawal of foreign capital. Since the available short-term assets can't cover all of the short-term liabilities, each creditor knows that the last short-term creditors to withdraw their funds will actually not be repaid on time (since the economy simply lacks the liquid assets to pay off all creditors on short notice).

The evidence in favor of the panic interpretation in Asia is both indirect and direct. The indirect evidence has two main parts. First, the crisis was unanticipated, suggesting that it can not be easily explained by fundamentals. Almost no one who was closely watching Asia in the months before the crisis, even those who were deeply familiar with Asia's flaws, predicted an economic meltdown. Second, even *ex post*, it is hard to find fundamental explanations commensurate with the depth of the crisis. The problems that Asia's critics now point to should have led to a growth slowdown, or even a recession, not a deep contraction and implosion of both the banking and corporate sectors.

The direct evidence has three main parts. First, the crisis hit only countries that were in a vulnerable position, i.e. with high levels of short-term foreign debt relative to short-term foreign assets. No emerging market with low levels of short-term debt relative to reserves was hit, even those with high levels of corruption and weak banking systems. Second, the crisis hit several countries with widely varying economic structures and fundamentals within a relatively short period of time. Korea and Indonesia had relatively little in common at the time of the crisis, except the levels of short-term debt and a common geographical region. Third, the crisis eased up after about one year, even though several fundamental conditions (e.g., corporate and bank financial health) were not significantly improved. The most striking example is Indonesia, where the rupiah appreciated substantially between mid-July and the end of October, starting only weeks after the chaos surrounding the resignation of Suharto. This can hardly be interpreted as a return of investor confidence, since most investors are even more uncertain about Indonesia's future in the wake of Suharto's downfall, and the ensuing political and social instability. The easing of the crisis reflects, in our interpretation, the end of the short-term outflows of capital. As debts were repaid, rescheduled, or defaulted upon, there was little foreign capital left to flee. As the net capital outflows subsided, the intense pressure on the exchange rate ended, and the overshooting caused by financial panic was reversed.

Exchange Rate Devaluation?

Some observers have attributed the recent crises to the devaluations of the Thai baht, the Korean won, the Russian ruble, etc., and believe that there would have been no crises had these countries simply maintained the pegged exchange rates. One variant holds that a currency board arrangement, a la Argentina, would have saved these countries from the crisis. We believe that this policy view is completely off the mark, and reflects the fallacy of **post hoc, ergo propter hoc**.

The sliver of truth in this view is that the deep recessions in Mexico (1995), Thailand (1997), Korea (1997), and Russia (1998), indeed tended to follow closely after devaluations of the exchange rate. On the other hand, Argentina (1995) and Hong Kong (1998) suffered severe recessions despite their being on a currency board system. At the same time, there are many

countries that devalued their currencies *without* suffering a sharp crisis. Chile and India are two recent examples among developing countries, and Australia, Canada, and New Zealand are important examples among resource-rich developed countries that experienced terms of trade declines in 1998. Thus, on the one hand, the currency board system did not save countries from deep economic contraction, while on the other hand, many countries carried out devaluations or allowed their currencies to depreciate without incurring financial panic.

What then explains the observed link between the timing of devaluations and the onset of crisis? In our view, the devaluations have reflected two critical facts. First, in cases of Mexico, Thailand, Korea, and Russia, they reflected the depletion of foreign exchange reserves. These countries abandoned their currency pegs only when they had substantially run out of reserves. Thus, as the devaluations occurred, these countries were in an exceedingly vulnerable financial position, with very high levels of short-term debt in comparison with (depleted) foreign exchange reserves. Second, the devaluations, though unavoidable once the reserves were depleted, amounted to a broken promise. The Abroken promise \equiv therefore became a focal point for financial panic.

In our perspective, it was the *pegged exchange rates* preceding the devaluation, rather than the currency devaluations themselves, which should be considered the more important cause of the crisis. When pegged rates become overvalued, the pegged rate system in effect *forces* countries to deplete their foreign exchange reserves, in a vain defense of the currency peg. When that ultimately happens, the countries are also forced to break their commitments on the exchange rate, by devaluing the currency (or allowing it to depreciate). The combination of depleted reserves plus the broken promises leaves the country very vulnerable to panic. With a floating rate system, countries can maintain their foreign reserves and thereby maintain a defense against financial panic. Foreign creditors see that the central bank keeps enough reserves to repay short-term debts, thereby eliminating the possibility of a self-fulfilling creditor panic. Also, governments are not forced to break their word when international or domestic events for a change in market exchange rates.

Some Policy Implications

First and foremost, the Asian crisis is a cautionary tale about rapid financial liberalization in emerging markets. The Asian economies had gone far in creating a stable macroeconomic environment and in liberalizing trade and investment regimes, at least for a wide range of tradable manufactured goods. Most of their vulnerabilities in the mid-1990s arose as a result of rapid financial liberalization undertaken in the late 1980s and early 1990s. Well-functioning financial systems require a much stronger legal and regulatory infrastructure than do regimes for open trade and foreign direct investment. In all of the more advanced industrialized economies, financial transactions are heavily supervised and regulated to a much greater degree than trade and investment transactions. Financial markets are far from being free and open, as is sometimes supposed. The Asian economies simply had not developed sufficient capacity in managing a

market-based financial sector.

When financial markets in the industrialized countries were less developed, as in the 19th and early 20th centuries, they were beset by a series of financial crises and panics that were similar in many ways to the Asian crisis. In the absence of regulation and supervision, there were also larger numbers of Acrony capitalists,≡ such as the robber barons in late the 19th century United States. These problems were addressed, slowly and painfully, by the creation of a series of institutions, such as the Federal Reserve system, the Federal Deposit Insurance Corporation, the Securities and Exchange Commission, modern bankruptcy laws, and more effective judicial systems, amongst others. After seventy years of developing these institutions, our financial systems are much more robust and far less prone to crisis than they once were, but are still far from perfect, as was seen recently with the Savings and Loan debacle (which displayed elements of Acrony capitalism≡ as well as poor supervision). There were also banking sector failures throughout Europe and Japan in the late 1980s and early 1990s, and Japan=s banking weaknesses are of course still with us today. Taken in his light, perhaps crony capitalism in Asian could be more usefully seen as a failure of appropriate regulatory institutions, rather than a moral failing specific to Asia, as has been regularly implied during the past year.

In addition, cross-border lending is much less regulated, and therefore more unstable, than domestic finance. International law is incomplete to say the least. There are no reliable international counterparts to bankruptcy law, deposit insurance, and central banks that act as lenders of last resort in national currencies. Short-term capital movements are therefore prone to much larger swings than similar assets in the domestic economy.

Authors such as McKinnon (1993), McKinnon and Pill (1996), and Diaz-Alejandro (1988) have long cautioned about the perils of overly-rapid financial liberalization in emerging markets, but few have taken heed of their advice. The Asian crisis does *not* undermine the case for rapid liberalization of trade regimes or the removal of restrictions on long-term foreign direct investment. But it does provide strong support for proceeding more slowly and carefully in liberalizing domestic banking transactions and portfolio markets until the requisite regulatory institutions are in place. (Similar lessons could be drawn from the failures of Russian Aquick privatization≡).

In particular, short-term cross-border debt flows should be the last item on the liberalization list, since these instruments are particularly prone to volatility and panic. Chile=s taxation of short-term capital inflows (by requiring a partial deposit of the foreign investment in a non-interest earning account for one year) provides a promising example for other emerging markets. Chile=s restrictions have reduced short-term capital inflows to Chile, without reducing total capital inflows. Many analysts attribute Chile=s ability to avoid financial crises in the wake of the panics in Mexico, Argentina, and Asia to these restrictions and Chile=s small stock of short-term foreign debt. These restrictions are best seen as temporary measures to protect financial markets from severe crises until the necessary institutional framework is in place.

Second, the Asian crisis makes clear the dangers of fixed, or nearly-fixed exchange rates. Fixed rates have been advocated as a means of reducing volatility in relatively thin currency markets. They can also be useful as a means of providing a price anchor in specific circumstances, such as halting a hyperinflation. But while flexible markets may be more prone to regular volatility, fixed rates are more susceptible to huge shifts when they can no longer be defended. Government efforts to stick to a promise that it obviously no longer can keep simply breeds instability. Attempts by both Thailand and Korea to defend their exchange rates in the face of speculative attacks simply led to an exhaustion of usable foreign exchange reserves and ultimately a huge depreciation of their currencies. We are not aware of an example of a significant financial or currency crisis in an emerging market with fully flexible exchange rates. Increasingly, the choice for emerging markets is between, on the one hand, surrendering monetary policy completely through adoption of another country's currency or introducing a strong currency board, or on the other hand adopting a freely-floating currency.

The currency board option is itself highly dubious in our opinion, except in extraordinary cases. Most countries, especially export-oriented commodity-based economies, require the flexibility of exchange rates to adapt to foreign shocks, such as a sharp decline in export prices. Moreover, countries with currency boards remain vulnerable to self-fulfilling creditor panics, and sometimes even more vulnerable than pegged rate countries, since the central bank can no longer be a lender of last resort to the domestic banking system in the event of a creditor run.

Third, the international community's initial response to the crisis, led by the IMF and the US Treasury, exacerbated rather than eased the crisis in its early stages. The IMF initially viewed the situation as a series of traditional balance of payments crises, rather than a financial panic, and as a result demanded tight fiscal and monetary policies. This approach was reminiscent of the mistaken policies implemented by the United States in the early stages of the Great Depression of the 1930s, and was the opposite of how we would expect industrialized economies to react in similar circumstances. Indeed, when a credit crunch began to develop in the United States in mid-1998, the policy response was to reduce interest rates and to engineer a private-sector bailout of a large, failing hedge fund.

In Asia, the austerity approach, far from reassuring investors and building confidence, served to deepen the economic contraction that was already in its early stages. On fiscal policy, the IMF recognized the mistake within a few months and eased the fiscal targets in its programs, but much damage had already been done. The issue of appropriate monetary policy and interest rates has been much more hotly debated, and poses a difficult issue. Higher interest rates were designed to attract foreign capital and halt the depreciation of the Asian currencies. But they come at a potentially high cost, since higher interest rates make it more difficult for firms to service domestic currency loans, reduce the expansion of bank loans, and, as a result of the increase in non-performing loans, weaken bank balance sheets. Indeed, concern over these ill effects can actually reduce foreign capital inflows, rather than spur them.

The issue, properly framed, is whether the benefits from higher interest rates are likely to

be larger than the costs in the midst of a financial panic. The IMF=s pronouncements in the early stages of the crisis simply took it as an unchallenged matter of faith that the gains would outweigh the costs. However, the most detailed study on the issue to date, by Furman and Stiglitz (1998), casts serious doubt on that view. They show that the magnitude of both the benefits and the costs are likely to differ by country and will depend on the composition of both the foreign creditors and the debtors, and the structure of the domestic banking system. Different outcomes are possible, depending on the extent of both foreign and domestic currency debt, the maturity structure of the debt, the financial condition of the banking system, and the extent of segmentation of local credit markets. Higher interest rates are not a one-size-fits-all remedy. Furman and Stiglitz argue, convincingly, that the structure of the Asian economies made it far less likely -- *indeed unlikely* -- that high interest rates were the appropriate course of action in Asia. Their empirical evidence shows that there was a weak link, at best, between higher interest rates and the exchange rate in the early months of the Asian crisis, and that the costs of the policy to domestic firms and banks were high.

In recent months, supporters of the high interest rates have counter-argued that while the effects were not immediate, once the Asian countries held firmly on monetary policy for an extended period of time, the economies eventually stabilized. They point to the appreciation of the won and baht in early 1998, and of the rupiah in mid-1998 as evidence, and the lower interest rates that followed in each case. This argument is unconvincing. Once all the short-term foreign capital had left (or had been rescheduled or defaulted upon) and the panic subsided, exchange rates were bound to stabilize and even rebound, since exchange rates initially overshot any sensible level as a result of the first stage of the panic. Moreover, several other factors helped stabilize the Asian currencies, including the appreciation of the Japanese yen, disbursements in official foreign financial support (which were originally very slow in Thailand and Indonesia) and the redesign of IMF programs. Finally, while sustained high interest rates may have contributed to the eventual strengthening of these currencies, that by itself does not justify the policy, since the costs to banks and firms were very high, and the interest rate policy may have helped to trigger the panic in the first place.

Another problem with the IMF=s approach to the Asia crisis was its poorly-thought-out approach to the banking system. Its initial approach was to close a series of banks and financial institutions as a means for the Asian governments to signal that they intended to introduce tough reform measures. The failed banking approach was most clearly demonstrated in Indonesia, where 16 banks were closed on November 1, 1997, in the very first policy action taken under the IMF program. As the IMF itself later admitted in an internal document, this move backfired.⁷ There is little doubt that these banks, as well as others, were in poor shape and needed to be merged, closed, or recapitalized. The problem was that the banks were closed very abruptly and without a comprehensive and well-thought-out financial restructuring plan in place. The IMF=s initial

⁷ AIMF Now Admits Tactics in Indonesia Deepened the Crisis,≡ New York Times, January 14, 1998.

program failed to include provisions for deposit insurance, for managing the performing and non-performing assets of these and other banks, or for securing and strengthening the rest of the banking system. The closures set off a bank run that began to undermine the rest of the banking system, including healthy banks. In the months that followed, the Indonesian central bank was forced to provide huge lines of credit to keep the banking system liquid. (Some of these loans were apparently made under pressure from the president to support crony banking friends of the Suharto clan). These credits added to the money supplied and helped fuel inflation during the height of the crisis. Critics who argue that this approach was appropriate simply because the banks were in bad shape, or who argue that Indonesia's mistake was to close too few banks, simply miss the point that the problem was the hurried approach, in a context lacking deposit insurance and a comprehensive and workable financial restructuring plan.⁸ In the end, all three countries -- Thailand, Indonesia, and Korea -- ended up making blanket promises to back bank deposits, so that the IMF's initial tough line was in vain in any event.

A more effective approach to dealing with the panic was illustrated by Korea's second IMF program, signed on December 24, 1997. The first IMF program, like its predecessors in Thailand and Indonesia, relied heavily on fiscal and monetary austerity and a closure of banks (in this case, merchant banks, which had less effect on undermining depositor confidence than closing commercial banks as in Indonesia). Within weeks, the financial panic had only intensified, and it was clear the initial approach was failing. The second program eased off on the monetary and fiscal targets, and had as its centerpiece a restructuring of Korean bank loans owed to international banks. For the first time in the Asia crisis, the creditors were finally asked to be involved and make some adjustment. \$24 billion in short-term debt falling due in the first quarter of 1998 was rescheduled to 1-3 year bonds. This approach went to the heart of the pressure on the won, and almost immediately the exchange rate began to appreciate and the panic subsided. The restructuring was far from ideal, since the creditors were given even higher interest rates than the original debts carried, and the new bonds were generously guaranteed by the Korean government, but nevertheless it helped stop the panic.

This suggests a *fourth lesson* from the Asian crisis: the need for a more formal mechanism for international private debt workouts for emerging economies that ultimately relies more on private funds than IMF bailouts. There are two parallel frameworks from which such a mechanism could draw: domestic bankruptcy proceedings in the industrialized countries, and international workout mechanisms for developing country sovereign debt. Each creates a negotiating framework for debtors and creditors that helps to overcome some of the collective action problems that characterize financial crises. Bankruptcy proceedings have several key components, including (1) a standstill on debt servicing, legitimized by an independent arbitrator (the court); (2) a mechanism for drawing new interim private sector financing; and (3) a system for debt reduction, debt rescheduling, and/or debt-equity conversions. Sovereign debt workout

⁸ See, for example, Goldstein (1997).

mechanisms have developed many of the same characteristics in the years following the developing country debt crisis of the 1980s. Debt standstills emerged, often in an ad-hoc manner, but in most cases ultimately with the implicit approval of an arbitrator (in this case, the IMF). The borrower negotiated with creditor committees (either the Paris or London Club) to refinance or reschedule loans, and occasionally for a debt-equity swap. Interim financing was made available either from official sources (the IMF, the World Bank, or industrialized country governments) or from commercial banks as part of Brady Plan workouts. Importantly, in the end, restructuring under the auspices of the Paris Club or via Brady bonds involved a significant debt reductions.

The situation becomes more complicated when it involves a large number of private-sector debtors, rather than a sovereign debtor, as in the East Asian economies. The firm-level bankruptcy model applied on a case-by-case basis may be both impractical and too time consuming to help quickly resolve a financial panic. A mechanism could be developed to impose a generalized standstill on a country's debt servicing obligations, in tandem with bringing together debtors and creditors for collective rollovers and debt renegotiation. The Korean example shows that this can be arranged quickly, at least for commercial bank debtors, when the international community (in this case, the IMF and the US Treasury) provide a forceful impetus. Ideally, new financing should be made available, mainly from private sector sources, as is the case with bankruptcy proceedings. A case can be made for public sector involvement (certainly to facilitate the proceedings, and perhaps to contribute to new financing) in the context of widespread debt difficulties by commercial banks, since bank failures could threaten the entire payments system. Moreover, financial information for banks is generally readily available since banks must regularly report to the central bank.

The most complex case is when the debtors are a large number of private sector firms, as was the case in Indonesia. The sheer number of debtors and creditors involved, the paucity of accurate information on many firms (especially if they are not publicly listed), and the weakness of judicial systems in many emerging markets all complicate such proceedings. At this point, there are few international precedents to work from. But as complicated as was the Indonesia case, many creditors believe that such a workout deal could have been arranged in the early stages of the crisis, and as late as January 1998, had the idea been supported and pushed by the IMF, the US Treasury, and the Japanese government (since Japanese banks were Indonesia's major creditors).⁹ Instead, Indonesia's first IMF program did not even mention the private sector debt, and the second program gave it very low priority, even though this debt was clearly at the heart of the crisis. Only by the third program, when it was far too late, did the private sector debt become a higher priority. Although such arrangements would be complicated, surely the international community can do better than throw up its hands and watch a creditor grab race undermine the residual value of debtor firms.

⁹ See Asian Wall Street Journal, AWhy Indonesia Never Got a Debt Deal,≡ November 4, 1998.

Fifth, and at a related but broader level, the Asian crisis has painfully revealed that there are few effective mechanisms in place to stop international financial panics in emerging markets. As discussed earlier, industrialized countries have developed a series of institutions designed to prevent serious financial crises within their domestic economies, such as the lender of last resort, tough banking supervision and regulation, deposit insurance, and bankruptcy laws. No such institutions exist, or work effectively, in an international context. Instead of simply blaming the debtors, as was done in Asia, we would do well to remember that industrialized countries long ago recognized that unfettered financial markets do not always function well and are prone to panic. The solution is to develop the institutions needed to provide a more solid foundation for well-functioning international capital markets. The IMF cannot, in its current structure, play the role of an effective lender of last resort, although it could possibly be reorganized to do so in limited circumstances. It has been suggested, for example, that the IMF open a new facility that would only be available to countries that fulfill strict requirements, just as central banks allow banks to operate only if they meet certain standards. To be eligible, countries would have to maintain prudent budgets, low inflation, strong banking systems (meeting standards set, for example, by the bank for international settlements), low levels of short-term debt, and the like.¹⁰ Outside of crisis times, eligibility for such a facility (even if unused) would presumably lower a country's risk premium in international capital markets, so countries would have the incentive to comply. If a crisis occurred, interim financing could become available quickly without the need to implement normal IMF conditionality, since presumably these countries had already met such conditions beforehand. In effect, such a facility would accelerate IMF conditionality to before the crisis hits, just as central banks impose conditions on commercial banks for them to operate, and then lend to them in times of crisis without condition. It would be crucial that such a facility not be used to postpone a devaluation of an overvalued currency, as was the case in Brazil, and that private lenders be bailed in, rather than bailed out, in such a process.

A final, and humbling lesson from the Asian predicament is that the world simply still does not understand financial crises very well. The Asian crisis was almost completely unpredicted, even after all the research and commentary that followed the Mexico/Argentina crisis of 1994/95. Of course part of the reason is that the crisis probably did not have to happen, if it had been better managed within the countries and in Washington. Yet, it is fair to say that we do not fully understand the preconditions for a crisis or the dynamics of capital withdrawals once they start taking place. The rapid development of new financial instruments, such as hedge funds, complicate the situation, since there is only a basic understand of the magnitude of and the systemic risks from these transactions. The best evidence of these dangers comes from the

¹⁰ Charles Calamiris (1998) has suggested what is in many ways a similar idea, except that in his plan, all countries would have to meet such strict conditions to be members of the IMF. In our view, it would be impractical and unwise to limit all IMF membership to such conditions. Moreover, since the IMF voting rules are now so heavily weighted towards creditor countries, the continuing legitimacy of the IMF requires a restructuring of the powers and procedures of the Institution, as well as the voting rights within the IMF.

sudden collapse of long-Term Capital Management in the United States. Unfortunately, financial crises in emerging markets are likely to be a recurring phenomena in coming years, the only questions being exactly where and when.

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Table 1. Five Asian Economies: External Financing

	1994	1996	1997e	1998f
Current account balance	-24.5	-55.2	-27.1	30.6
External financing, net	45.2	95.2	18.1	25.9
Private flows, net	37.9	97.1	-11.9	-0.3
Equity investment	12.1	18.7	2.1	16.4
Direct equity	4.7	6.3	6.4	6.9
Portfolio equity	7.4	12.4	-4.3	9.5
Private Creditors	25.8	78.4	-14.0	-16.8
Commercial banks	23.4	55.7	-26.9	-19.8
Non-bank private creditors	2.4	22.7	12.9	3.0
Official flows, net	7.3	-1.9	30.0	26.2
Resident lending/other, net**	-15.2	-21.6	-30.5	-4.6
Reserves excl. gold (- = increase)	-5.4	-18.4	39.5	-51.9

e= estimate, f= IIF forecast

The five countries include south Korea, Indonesia, Thailand, Malaysia, and the Philippines.

** including resident net lending, monetary gold, and errors and omissions.

Source: Institute for International Finance, *Capital Flows to Emerging Market Economies*, April 30, 1998.

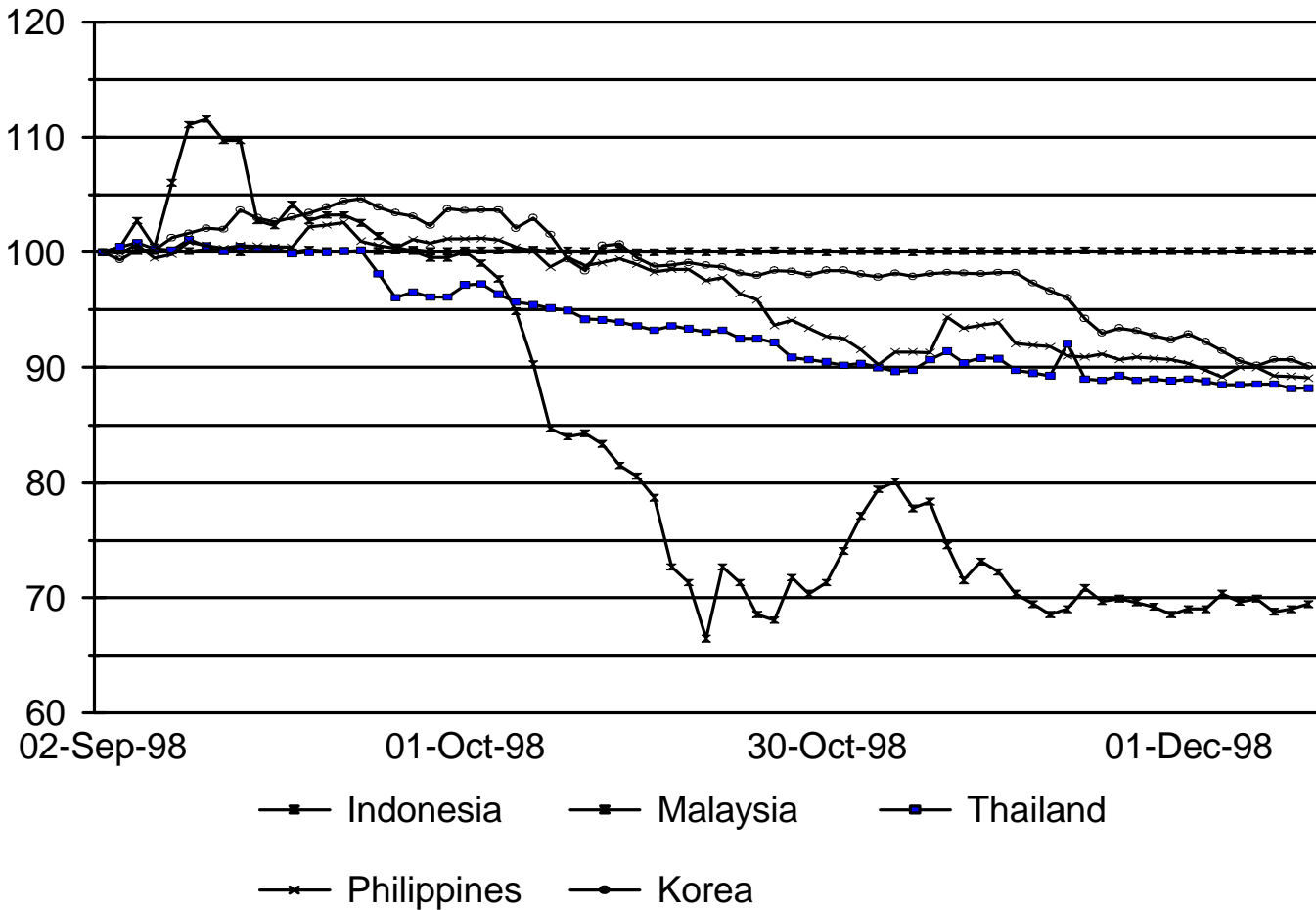
Table 2. Short Term Debt and Reserves, 1997-1998 (US\$, millions)

Country	June 1997			June 1998		
	Short-Term Debt	Reserves	Short-Term Debt/Reserves	Short-Term Debt	Reserves	Short-Term Debt/Reserves
Argentina	23,891	19,740	1.210	34,570	22,769	1.518
Brazil	44,223	55,849	0.792	52,978	69,615	0.761
Chile	7,615	17,017	0.447	10,056	15,135	0.664
Colombia	6,698	9,940	0.674	6,810	8,690	0.784
India	7,745	25,702	0.301	6,948	24,297	0.286
Indonesia	34,661	20,336	1.704	27,658	17,950	1.541
Jordan	582	1,624	0.358	577	2,122	0.272
Korea	70,612	34,070	2.073	33,161	40,835	0.812
Malaysia	16,268	26,588	0.612	11,199	19,702	0.568
Mexico	28,226	23,775	1.187	28,209	30,646	0.920
Pakistan	3,047	1,249	2.440	2,529	844	2.996
Peru	5,368	10,665	0.503	8,889	11,119	0.799
Philippines	8,293	9,781	0.848	10,170	9,024	1.127
Russia	38,308	20,396	1.878	34,650	11,161	3.105
South Africa	13,247	4,241	3.124	13,746	4,610	2.982
Sri Lanka	414	1,770	0.234	380	1,864	0.204
Taiwan	21,966	90,025	0.244	18,590	83,286	0.223
Thailand	45,567	31,361	1.453	27,767	25,785	1.077
Turkey	13,067	16,055	0.814	20,315	26,456	0.768
Venezuela	3,629	13,215	0.275	4,794	12,556	0.382
Zimbabwe	731	447	1.635	839	154	5.448

Sources: Bank for International Settlements, IMF

Exchange Rate Movements

September 2, 1998 = 100



Note: A downward movement indicates a nominal appreciation against the US dollar.