Pacific Basin Working Paper Series

ASIA'S FINANCIAL CRISIS: LESSONS AND POLICY RESPONSES

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Working Paper No. PB98-02

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July 1998

This paper is a slightly modified version of a paper originally published in *Asia: Responding to Crisis*, Asian Development Bank Institute, Tokyo, 1998. The authors thank Teresa Curran and George Fane for helpful discussions or comments, Tania Luhde, for some of the information on episodes of stress to the banking system used in this paper, and Guillermo Pinczuk for research assistance. The opinions expressed in this paper are those of the authors and do not necessarily reflect the views of the Federal Reserve System or of the Asian Development Bank Institute.

Abstract

This paper argues that fundamental weaknesses in Asian financial systems that had been masked by rapid growth were at the root of East Asia's 1997 currency and financial crisis. These weaknesses were caused by the lack of incentives for effective risk management created by implicit or explicit government guarantees against failure. The weakness of the financial sector was accentuated by large capital inflows, which were partly encouraged by pegged exchange rates.

Policy responses need to be designed to restore growth in an environment of macroeconomic stability in the short run, and to prevent the recurrence of crises in the long run. In the short run, the priority is to bring about the resumption of external and internal domestic credit flows, by addressing issues such as trade financing, short-term external debt financing, the recapitalization of the financial sector through foreign investment and fiscal policy. In addition, it is suggested that fiscal policy be assigned to supporting growth and the financial sector, and monetary policy to curbing inflation and stabilizing exchange rate expectations. In the long run, policies should aim to reduce the vulnerability of the financial sector by encouraging adequate risk-management through financial reform, strengthened supervision, and regulation. It is noted that greater exchange rate flexibility and the maintenance of open capital accounts may also create incentives for managing risks effectively.

When the history of the early 21st century is written, 1997 will probably be seen as marking a turning point that determined the fortunes of Asian economies in the new millennium. The questions that a future economic historian will pose concerning East Asia's 1997 financial crisis are already apparent. Was the recovery from financial and currency crisis relatively brief? Or was the recovery instead lackluster and spread out over an extended period, punctuated by periodic episodes of financial instability or recession? Did foreign (as well as domestic) funds return quickly, on a sounder footing? Or were foreign investors slow to return, deterred by suspicion about the value of their contributions to the growth of Asian economies, and their role during episodes of financial market instability? Did emerging Asian economies finally catch up with advanced market economies in the early part of the 21st century, achieving greater levels of sophistication in products and services, and emerge as major participants in world financial markets, just as earlier they had made their mark in goods markets? Or did Asian financial institutions remain small and uncompetitive, lacking sophisticated tools for risk management that are critical in funding risky projects at the cutting edge of technology? Did such constraints ultimately prevent Asian economies from reaching the highest levels of development? The answers to these questions will ultimately depend on how Asian policy makers interpret the lessons from the current crisis and on their policy responses.

The most important lesson from the crisis is that the financial sectors in many East Asian economies urgently need to develop the right set of institutional incentives and tools to manage risks and operate effectively in a global market economy. Rapid growth and prudent macroeconomic policies do not guarantee a sound economic performance if a well-functioning and robust financial system is not in place.

The paper highlights this lesson through an interpretation of recent events in Asia that differs from traditional macroeconomic explanations of currency crises. Instead, the paper argues that

fundamental weaknesses in Asian financial systems that had been masked by rapid growth were at the root of the crisis. These weaknesses were caused by the lack of incentives for effective risk management created by implicit or explicit government guarantees against failure. The weakness of the financial sector was accentuated by large capital inflows, which were partly encouraged by pegged exchange rates.

The paper next discusses some short- and long- run policy responses to the crisis. A key concern in the short-run is the restoration of growth in an environment of macroeconomic stability. To restore growth, trade financing needs to resume, maturing short-term debt needs to be managed, and the balance sheets of financial institutions and borrowers need to be repaired. The role of foreign investors, and obstacles to their participation in this process, are also discussed. The paper then touches briefly on the heated debate on macroeconomic policy. It is noted that there is a policy assignment problem, and it is suggested that fiscal policy should be assigned to support growth and the financial sector, while monetary policy should be assigned to curbing inflation and stabilizing exchange rate expectations. This implies some flexibility in fiscal policy and a relatively firm monetary stance. The appropriate degree of ease and tightness needs to be determined on a case-by-case basis, but market reactions can provide a guide.

In the long run, to prevent a repeat of the crisis, policies should aim to reduce the vulnerability of the financial sector. The paper briefly discusses what this implies for financial reform, supervision, and regulation; exchange rate policies; and policies on capital flows. The paper emphasizes the importance of effective banking supervision to curb the incentives for excessive risk-taking that are at the root of the current crisis. It also points out that floating exchange rates are more likely to encourage better risk-management, and the hedging of foreign currency exposure. The lack of such hedging was a major contributor to worsening the crisis. It is also noted that capital controls,

which are currently in vogue in some quarters, are likely to discourage better risk management by insulating the domestic financial sector from the effects of poor decisions or inappropriate financial sector policies.

Boom and Bust in Asia

The outstanding economic performance of East Asian economies is familiar to many observers. Operating in an environment of fiscal and monetary restraint, most of the region enjoyed high savings and investment rates, robust growth, and moderate inflation for several decades. Starting sometime in the second half of the 1980s, rapid expansion was accompanied by sharp increases in asset values, notably stock and land prices. As shown in Table 1, since 1987, stock price indices increased rapidly in East Asia. Among the economies more affected by the recent crisis the highest cumulative price increases were in Indonesia (934 percent), Thailand (702 percent) and the Philippines (556 percent). Price indices for property markets are not readily available, but financial press reports suggest that price increases in these markets were also significant.

Growth began to slow in a number of economies in the 1990s—a reaction to shocks such as the devaluation of the Chinese currency in 1994, the depreciation of the Japanese yen against the dollar in 1995, and plunging semiconductor prices. However, the perception remained that East Asia was fundamentally healthy, and that a “soft landing” could be successfully implemented.

The collapse of the Thai baht in July 1997 rudely interrupted this scenario, triggering a wave of depreciation and stock market declines. After the second half of 1997, the value of the most affected East Asian currencies had fallen 33%-75% against the US dollar. Table 1 reveals that stock indices also declined sharply after June 1997, falling 36 percent in Indonesia, 43 percent in Korea and 22 percent in Thailand through April 1998. Measured from their peaks earlier in the 1990s, the

stock price declines have been far sharper in Korea and Thailand. Disruptions in bank and borrower balance sheets have led to the closure of financial institutions and the bankruptcies of numerous firms, as well as an interruption in credit flows in the most affected economies.[1] Thus, while collapsing pegs are expected to boost output in the medium term, short-term economic activity has slowed or contracted severely in the most affected economies, and interest rates have soared due to investor uncertainty.

The anticipated severity of these effects is apparent in the sharp downward revision in forecasts of East Asian growth in 1998, compared to the forecasts made when the crisis began in July 1997. For example, the consensus (average) forecast of Indonesian 1998 GDP fell from *growth* of 7.6 percent for the forecasts made in July 1997, to a *contraction* of 7.8 percent for the forecasts made in May 1998.

In spite of contractionary influences, the threat of inflation is significant due to unprecedented currency depreciations, pressures for monetary stimulus, and the fiscal burden of repairing the financial sector. These inflationary pressures are also apparent in changes in the forecasts of East Asian inflation in 1998 between July 1997 and May 1998, which in the case of Indonesia rose from less than 7 percent to 51 percent.

Flawed Financial Fundamentals

Observers have puzzled over the timing, severity, and spread of the financial crisis. Traditional macroeconomic explanations are not satisfactory, considering the high rates of domestic savings and the generally prudent fiscal and monetary policies in the region. Even the conventional

[1] The reasons why credit flows are interrupted when balance sheets are disrupted are discussed in the literature on debt deflation. See Bernanke and Gertler (1995).

view that economies were "overheating" may be questioned. Thailand's growth, for example, had slowed significantly after 1995. Recent research also finds that current account deficits, often used as indicator of overheating, are not good predictors of balance of payments crises.[2]

One interpretation of what happened in Asia that is broadly consistent with the facts and recent research is that the crisis in each of these economies reflects closely related *runs* on financial institutions and currencies.[3] A generalized run on financial institutions can severely disrupt economic activity, weaken the balance sheets of borrowers and creditors, and threaten the flow of credit and the viability of the payments system. In an open economy, a simultaneous run on the currency worsens the situation by interrupting the flow of external funding, weakening the balance sheets of borrowers whose trade credits or investment funding is suddenly interrupted. Borrowers who have not hedged their foreign currency exposure are even more severely affected. Since a run on one currency causes uncertainty and potential runs on other currencies with financial systems that are viewed as vulnerable, the interpretation explains why the crisis spread throughout the region. It also provides an explanation for why the severity of the crisis, dependent on the complex interaction between the sentiments of market participants and the responses of governments and the international community, was largely unanticipated.

If there were, indeed, runs on East Asian financial systems and currencies, what caused them? One view is that the region's economies were inherently sound and could have continued functioning well indefinitely, but an arbitrary shift in market expectations that interrupted fund flows

[2] See Kaminsky, Lizondo, and Reinhart (1997).

[3] Strictly speaking, the literature distinguishes between domestic bank runs and balance of payments or currency crises. The term "runs" is used for both to emphasize the key similarity in the two processes' investors trying to unload their holdings of an asset before others beat them to it.

to Asia induced the crisis. From this perspective, Asia's crisis mainly involved a sudden interruption in liquidity.[4]

An alternative explanation, which this paper favors, is that recent events resulted from fundamental weaknesses in the financial sector. It can be argued that the recent crisis in the region stems directly from policies that encouraged risky lending or excessive risk-taking, making East Asian financial sectors susceptible to shocks.

Two features of Asian financial systems encouraged risky lending. First, *financial intermediaries were not always free to use business criteria in allocating credit*. In some cases, well-connected borrowers could not be refused credit; in others, poorly managed firms would obtain loans to meet some government policy objective. For example, the former executive of a South Korean bank justified the extension of credit to a steel company by arguing that steel is an important national strategic industry. The steel firm subsequently went bankrupt. Hindsight reveals that the cumulative effect of these types of decision can produce massive losses.

Second, *financial intermediaries or their owners were not expected to bear the full cost of failure*. Financial intermediaries are shielded from losses to the extent that they put "other people's money" at risk. In part, this is because they are highly leveraged.[5] But, more importantly, financial intermediaries are typically protected by implicit or explicit government guarantees against losses.

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[4] This is a possible interpretation of some of the views expressed at the Asian Development Bank Institute Workshops on Recent Financial Developments in Asia (see www.adbi.org), and also the view presented by Sachs and Radelet (1998). For recent models of bank runs and currency crises that do not necessarily assume distorted incentives from government guarantees, see Chang and Velasco (1997), Calvo and Mendoza (1996) and Goldfajn and Valdes (1997).

[5] Some observers argue that risk-adjusted capital ratios of 8% are too low for emerging markets. These are below the capital ratios maintained by financial institutions not covered by deposit insurance in industrial economies (since the time of the Great Depression of the 1930s). The ratios also do not seem to take into account the fact that emerging market economies tend to be more vulnerable to shocks. See Goldstein and Turner (1996).

Such guarantees may have arisen because governments could not bear the costs of sufficiently large shocks to the payments system (McKinnon and Pill, 1997), or because the intermediaries were owned by "Ministers' nephews" (Krugman, 1998a). Krugman points out that these guarantees can trigger asset price inflation, reduce economic welfare, and ultimately make the financial system vulnerable to collapse.[6]

The potential for loss is increased by the fact that the very nature of the banking business—to convey information about the quality of borrowers and their projects—implies a lack of transparency in loan decisions. This is particularly true in Asia, where accounting and disclosure practices are deficient. As a result, depositors and regulators may have difficulty telling if loans are sound, except when a bank faces serious difficulties. This condition hinders the governance of financial institutions, increases the incentives for risk-taking, and may also lead to fraud and undetected conflicts of interest.

Why a Crisis Now?

Since weaknesses in East Asian financial systems had existed for decades and were not unique to the region, why did Asia not experience crises of this magnitude before? Two tentative answers may be suggested, pending further research.

First, the extent of risky lending in the region was disguised by rapid growth. For many years, accelerated expansion allowed financial policies that shielded firms that incurred losses from the

[6] As an example of how guarantees work in practice: because of the banks' special role in the payments system, a well-established principle dictates that depositors be made whole when a bank fails. This insurance is an effective way to prevent bank runs. With a deposit guarantee, however, depositors have no incentive to monitor the safety and soundness of a bank. This lack of monitoring creates a "moral hazard" for bank managers, an undue incentive for them to take excessive risks. These risks are easy to take because banks operate on leverage, with relatively little capital supporting their lending and borrowing operations.

adverse effects of their decisions. This is apparent from the fact that, despite their outstanding economic performance, East Asian countries have had their share of financial sector problems (see Box on page 26). In the 1990s, some of the affected economies tended to respond with forbearance; that is, they did not deal promptly with problem institutions. There was also a pattern of supporting failing financial institutions. These measures suggest the existence of a very generous safety net that would tend to encourage risky lending. However, over time, the safety net would also increase the financial sector's vulnerability to a sufficiently large shock.

Second, these countries were much more closely integrated with world financial markets in the 1990s than they had been in the past, so that their susceptibility to changes in market sentiment increased. While financial market liberalization is often cited as the main reason for rising vulnerability, heightened awareness of profit opportunities in emerging markets and enhancements in information and transactions technologies may be the prime culprits. For instance, Indonesia's capital account has been open since the early 1970s, but capital inflow surges occurred much later. What is different is that international funds flow much more easily to emerging markets because of developments in the financial infrastructure.[7]

Closer integration with world financial markets adds additional dimensions of vulnerability that are not present in a closed economy. In a closed economy, bad loans caused by risky lending may not lead to a run because depositors know that the government can supply enough liquidity to financial institutions to prevent any losses to depositors. In an open economy, that same injection of liquidity can destabilize the exchange rate. As a result, during periods of uncertainty, runs or

[7] For example, in Thailand, a noteworthy development was the establishment of the Bangkok International Banking Facility (BIBF) in 1993. While Thai residents could have borrowed abroad even without the BIBF, the facility lowered transaction costs between foreign and domestic residents.

speculative attacks on a currency can only be avoided if the holders of domestic assets are assured that the government can meet the demand for foreign currency.

To illustrate the ability of economies in the region to meet such a requirement in the 1990s, Table 2 reports short-term foreign borrowing in six East Asian economies (cross-border or local loans in foreign currency, expressed in US dollars), the ratio of such borrowing to foreign exchange reserves of the central bank (illustrating the ability of central banks to make good on short-term claims in foreign currency) and the ratio to nominal GDP (illustrating the vulnerability of the economy to a change in sentiment that prompts lenders to stop rolling over their short-term loans). The list excludes Hong Kong and Singapore because their roles as international financial centers complicate the interpretation of the data, but includes Taiwan, which can serve as a point of reference, as it appears to have been less affected.

In the 1990s, short-term foreign borrowing in the five affected East Asian economies increased rapidly, with the largest proportionate increase in Thailand and Malaysia (600%-800%); somewhat less rapid increases in South Korea (about 325%); and more moderate increases in Taiwan and the Philippines (140%-170%).

The ratio of short-term foreign borrowing to foreign exchange reserves paints a clearer picture of the external exposure of these economies. The table reveals that this ratio was well above 100% for South Korea, Indonesia, and Thailand—the three most affected economies—and below 100% for the Philippines, Malaysia, and Taiwan. The ratios of most East Asian economies surged in the 1990s, except that of the Philippines, which declined.

In normal times, a high ratio may be quite sustainable (in the same way that banks do not normally maintain 100% reserves against their deposits). However, high ratios were clearly unsustainable in the more vulnerable economies when uncertainty spread throughout the region. As

discussed below, in the current uncertain environment, perceptions about the ability to meet short-term foreign claims, which is at least partly indicated by the ratio, may affect the restoration of voluntary external financing.

The last column of the table shows that short-term foreign borrowing increased relative to GDP in all economies in the 1990s, indicating increased vulnerability to shocks that could deter foreign lenders from rolling over short-term bank loans. Such loans were equivalent to about 30% of GDP in Thailand's case.[8]

The problem was compounded by a tendency not to hedge foreign currency borrowing in countries with pegged exchange rates. Market participants may have interpreted currency pegs as implicit government guarantees against the risk of currency volatility.[9] At the same time, the banks involved viewed rising foreign reserves to be an implicit bailout fund that would be made available through central bank currency intervention. While the absence of hedging significantly lowered the cost of funds (in the short run) for those firms with access to foreign credit, the consequent mispricing of foreign credit contributed to excessive capital inflows and the vulnerability of borrowers with heavy exposure to foreign currency loans.

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[8] While these data pinpoint a key area of external vulnerability, they understate its potential magnitude: net foreign portfolio inflows (which had also been on an upward trend throughout the 1990s) were also reversed, and residents also attempted to convert short-term assets or money into foreign currencies. However, ratios of M2 to foreign reserves, which indicates the overall exposure to short-term liabilities more fully, generally did not rise systemically over this period, though they were much higher than the ratios of foreign lending. For example, in South Korea, the ratio fell from a peak of over 8 in 1991 to a still high 6.4 in 1996. In Indonesia, it reached a recent peak of 7 in 1995 but fell to 6.5 in 1996. In Thailand, the ratio was in the neighborhood of 4.0 in every year between 1990 and 1996. The ratio of M2 to foreign exchange reserves in Singapore was around 1.2 in the early 1990s, and fell to 1.05 in 1995 and 1996.

[9] Dooley (1994) appears to be the first to draw attention to the fact that pegged Asian currencies were a form of implicit guarantees that reduced the incentive to hedge. The lack of hedging when the exchange rate is pegged has been observed in other emerging markets. McKinnon and Pill (1997) show that the decision not to hedge is the rational (but undesirable) response to an implicit government guarantee caused by the large costs of financial system failure.

The lack of hedging added to the instability in Asian financial markets. First, since abandoning currency pegs was very costly, policy makers had to adopt harsh contractionary measures (involving skyrocketing interest rates in some cases) to defend the exchange rate in the face of adverse market sentiment.[10] Second, borrowers who had not hedged their foreign currency borrowing have had difficulty servicing their debts and, in some cases, gone bankrupt, thus worsening the crisis. Third, the efforts of market participants to cover previously unhedged foreign currency exposure after the onset of the crisis further weakened the domestic currency.

Crisis Triggers

While the growing financial sector vulnerability in East Asia was hidden by rapid economic growth, historical experience suggests that such vulnerability could lead to financial crisis following a sufficiently large shock.[11] Important international shocks in the 1990s included the devaluation of the Chinese renminbi yuan in 1994 (which ratified earlier depreciation) and of the Japanese yen after 1995. Both events reduced the competitiveness of the economies of the Association of Southeast Asian Nations (ASEAN) and North Asia, and became a disincentive for Japanese producers to

[10] For a discussion of the costs that adjustable pegs may impose on the financial system, see Mishkin (1997).

[11] For a survey of the literature on banking crises in emerging markets and an overview of historical experience, see Goldstein and Turner (1996). Latin American banking crises are analyzed in Hausmann and Rojas-Suarez (1996), which contain selected case studies. Further case studies are provided by Sheng (1995).

relocate elsewhere in the region. After the mid-1990s, semiconductor prices plummeted, adversely affecting South Korea in particular.[12]

These shocks brought on the economic slowdown and declining asset prices that ultimately caused the currency and financial crises in Thailand. The events in Thailand were themselves a major shock to the financial systems of the region. Under the interpretation offered in this paper, the attack on the Thai baht prompted investors to reassess and test the robustness of currency pegs and financial systems in the region. Over time, the countries with less robust financial systems experienced collapsing pegs and financial crises.[13]

Short-Run Policy Responses

The crisis that has affected Asian economies poses two main challenges for policy makers. One is to identify short-run economic policies that can restore growth quickly while maintaining macroeconomic stability. The other is to implement policies that, in the long run, will prevent the recurrence of, or reduce the vulnerability to, future crises.

To meet the short-run goals, external and domestic voluntary financial flows must resume in order to restore growth, and macroeconomic policies consistent with stabilizing inflation must be

[12] Yen-dollar or renminbi yuan shocks are shocks to the real exchange rate (given sticky prices), while semi-conductor price changes affect the terms of trade (the relative price of exports to imports). Recent research has shown that such shocks have been associated with banking and currency crises in emerging markets. For example, Caprio and Klingebiel (1996) found that 75% of a sample of developing countries experiencing banking crises suffered a terms of trade decline of at least 10% prior to the crisis. Kaminsky and Reinhart (1995) found that real exchange rate appreciation is a predictor of banking crises, while Kaminsky, Lizondo, and Reinhart (1997) found that such appreciation predicts currency crises. They also discovered that 56% of the banking crises in their sample were followed by currency crises within three years.

[13] Similarly, it can be said that pressure on a number of East Asian currencies that followed the collapse of the Mexican peso in December 1994 reflected a reassessment that involved testing the stability of pegs. This development, which was in some ways a prelude to the crises of 1997, set in motion a process of consultation and cooperation among East Asian policy makers that focused on short-term responses to deter or manage speculation in currency markets. See discussion by Manzano and Moreno (1998).

adopted. Significant efforts have been invested in reviving external financial flows. In Indonesia, South Korea, and Thailand, large programs of multilateral and bilateral assistance have been put together to reassure investors and meet short-term financing needs.

The voluntary restoration of short-term external financing is hampered by the uncertainty about debt service capacity associated with high ratios of short-term debt to foreign exchange reserves (see Table 2 on page 25). In South Korea, the foreign exchange reserve position has improved significantly, in part because of an external debt rescheduling agreement but also because of rising trade surpluses. In Thailand, short-term debt has not been rescheduled, but is being continuously rolled over, posing significant cash management challenges, which, however, have been successfully met. In Indonesia, many borrowers are technically insolvent at prevailing exchange rates, leading to problems in the servicing of short-term corporate debt. The issues that remain to be resolved are reminiscent of those that surfaced during the debt crisis of the 1980s. Two of them are whether the government should assume or guarantee the debt, and what extent must creditors absorb some losses.

Another key to recovery is ensuring financing for sound investment projects. For example, some firms in Indonesia and Thailand have had difficulty getting their bank letters of credit honored, interrupting the normal flow of trade credit. A number of initiatives have been drafted to address this problem.[14]

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[14] In February 1998, G-7 governments announced short-term insurance guarantees and reinsurance to creditworthy borrowers in Asia. In March, Singapore announced that it would launch a US$2 billion bilateral trade finance scheme for Indonesia. The funds would be drawn from the US$5 billion that Singapore had pledged as part of the International Monetary Fund's US$43 billion package for Indonesia. As of this writing, Bank Indonesia had placed US$100 million in each of five foreign banks to guarantee Indonesian letters of credit, and there were plans to place funds in five more banks. The Asian Development Bank (ADB) has also stepped in. On April 1, it signed an agreement to guarantee US$950 million of credit facilities (pooled from 64 international financial institutions) for Thai exporters. A US$50 million ADB loan was also to be disbursed to help Thai exporters finance imports.

To restore voluntary domestic financial flows, the balance sheets of banks and borrowers must be repaired. Assets will have to be disposed of, and financial institutions and borrowers recapitalized so that normal operations can resume. Both South Korea and Thailand have expressed the intention of relying heavily on the private sector—including foreign investors—to support this process through the acquisition of weak domestic financial institutions or businesses, or the purchase of assets of bankrupt lenders or borrowers. Allowing foreign investor participation can reduce the amount of government spending needed to support financial sector recovery, and lead to efficiency gains. To the extent that such institutions are subject to more stringent supervision from the foreign institutions' home countries, the incentives for risky lending cited earlier would also be mitigated.

However, there are significant obstacles to a market-based adjustment process of this kind. In a number of countries, the absence of effective bankruptcy provisions has made it difficult to dispose of properties. The true value of the assets being offered for sale is hard to determine due to a lack of transparency and deficient accounting and reporting. At times, the financial structure of corporations make them unattractive buys (e.g., debt ratios up to 400% for Korean *chaebols*). Finally, there are disincentives, such as restrictions on ownership of real property that specifically affect foreign investors.

To some extent, obstacles to foreign investment stem from concerns about transferring control to foreigners, and selling assets at "fire sale" prices. However, as noted by Paul Krugman (1998b), if the initial asset price inflation reflected risky lending which was triggered by government

guarantees, the subsequent deflation may be entirely reasonable. Selling to foreigners is then efficient, as assets fall under the control of those who can potentially use them best.[15]

The costs of repairing the financial sector following a crisis are typically very high. Recent reports indicate that support to financial intermediaries and borrowers following the Mexican peso's collapse in 1994 represent nearly 15% of GDP. Caprio and Klingebiel (1996) reveal that, in some cases, costs have exceeded 25% of GDP. The costs in several affected Asian economies are also likely to be high, so government financing will have to contribute to financing the repair.

In some economies, government support to the financial sector has initially involved assuming bad loans and paying off depositors of failing institutions using central bank funds. (In certain instances, these transactions are offset by other transactions in order to limit the expansionary effect on money.) Policy makers also intend to have the government assume the costs directly, through deficit financing or tax revenues, to restore the central bank balance sheet and limit the creation of money.

Macroeconomic Policy

The repair of the financial sector thus raises questions about the extent to which policy makers should resort to money creation, raising taxes, or deficit financing. This issue is closely related to the hotly debated question of the degree of monetary and fiscal restraint needed to stabilize expectations and restore growth. Observers disagree on whether tight monetary policies will attract financing and stabilize the exchange rate, or cause so much damage to the financial sector that they

[15] Krugman also points out that the transfer may not be efficient in this sense if the financial system was actually sound to begin with, and was disrupted by the run. Even in this case, however, he observes that the presence of foreign investors will limit the actual fall in asset prices. If there is a sufficiently large number of foreign investors, a run on domestic assets may actually be prevented by reassuring the residents that there are buyers for their assets.

become counterproductive. As for fiscal policy, the main concern is how investors will react if they observe that a sudden gap in the financial sector that may amount to a substantial fraction of GDP is financed by a budget deficit. (Usually, the deficit will be spread out, covering payments of principal and interest.)

In attempting to sort through these conflicting viewpoints, it may be noted that there are two policy objectives—restoring growth (which requires supporting the financial sector) and stabilizing exchange rate expectations (which can be accomplished by curbing inflation). At the same time, there are two policy instruments, fiscal and monetary policy. The problem may then be seen as one of assigning monetary and fiscal policies to the two objectives in the most effective way.

While more research is needed to explore this new version of the "assignment problem"—effective pairing of instruments with policy objectives during a financial crisis—a good short-run rule of thumb is to assign the more flexible instrument to the more volatile market. From this perspective, it is immediately apparent that monetary policy should be assigned to stabilizing exchange rate expectations by curbing inflation, and fiscal policy, to supporting growth and the financial sector. If monetary policy were instead assigned to support growth and the financial sector, it will most likely destabilize exchange rate expectations (as it would be expansionary) and raise inflation.[16]

However, solving the assignment problem does not entirely clarify the degree of ease or tightness needed (although it does make it clear that unrestricted monetary expansion is not desirable). For example, should support to the financial sector come from higher taxes or deficit

[16] It is also possible to justify the proposed assignment on more fundamental grounds. However, this would require research to specify the government's policy objectives and the assumed characteristics of the economy. The original policy assignment problem in an open economy IS-LM model was discussed by Mundell in the 1960s. For a more recent discussion of the assignment problem, see McCallum (1992).

financing? The bottom line, therefore, is whether it is more appropriate to worry about growth or about inflation in Asia at this time. Due to the severity of both economic contraction and depreciation, and the need to stabilize exchange rate expectations, the answer is not easily discerned and may vary from country to country. One useful guide is the response of markets, which make it immediately clear if the policies adopted are considered unsustainable or excessively expansionary.

Perhaps the most important point to bear in mind is that voluntary financial flows and exchange rates will remain volatile unless countries make a firm policy commitment and stick to it. The importance of making a clear commitment is best seen in South Korea and Thailand. These countries, having opted for clearly defined macroeconomic programs involving some degree of restraint, now show some signs of recovery in financing, as well as greater exchange rate stability.[17] Indonesia also decided to adopt a tighter monetary policy following double-digit inflation reports early in 1998.

Long-Run Policy Responses

Financial Reform, Supervision and Regulation

The prevention of future crises requires long-term responses geared towards reducing the vulnerability of the financial sector. While financial reform is considered a long-run problem, in the present context it has short-run implications. The effectiveness of even relatively large assistance packages in restoring credibility and voluntary financing may be significantly impaired by the absence of meaningful financial sector reforms. The reason is that investors now know that, despite

[17] Some of the most affected Asian economies have favored greater ease in fiscal policies over monetary restraint as economic conditions deteriorated. For example, Indonesia and Thailand, by agreement with the IMF, have recently relaxed their fiscal policy stance.

its outstanding growth performance, Asia is vulnerable to financial market shocks that can cause massive reductions in financial wealth.

Investors who have had their fingers burned by the financial crises are now looking for reassurances that conditions have changed substantially, so that a future crisis is less likely. They also want to be in a better position to assess and manage risks that they may have glossed over in the past. Thus, financial reform and transparency, issues that had been ignored before, have come to the forefront.

If the roots of Asia's financial crisis lie in the excessive risks the banks took, then financial sector reform should stress that credit be allocated strictly according to business criteria. Reform must likewise curb conflicts of interest or the incentives for excessive risk-taking arising from implicit or explicit government guarantees or the lack of transparency.

The paramount financial sector reform to achieve these goals is the strengthening of the supervision of banks and other financial intermediaries. There is no mystery to the principles of good bank supervision and regulation. Most of these principles are well known to the supervisory authorities in East Asia and have in fact been incorporated in standard banking rules and procedures. A participant at a Tokyo workshop jointly sponsored by the Asian Development Bank Institute (ADBI) and the Institute for Fiscal and Monetary Policy in February 1998 presented a comprehensive statement of these principles. The most important item is that of arms-length lending and, indeed, all the countries have rules that limit lending to related companies and individuals.

Two other important principles are the allocation of adequate capital to absorb the risks being borne, and the management of market risk to consolidate the various exposures in a bank's entire balance sheet. However, prior to the crisis, the countries in the region had not consistently implemented the G-10 risk-based capital standards as specified in the 1988 Basle Accord. And even

if banks in Asia had adhered strictly to those standards, the capital required would not have been nearly adequate to absorb the risks they actually took. There is no substitute for intensive on-site examinations to identify problems in individual banks, and for extensive and timely off-site examinations to find risk concentrations that are building up in the banking system as a whole.

The most serious problems faced by distressed banks in East Asia did not spring from extraordinarily technical transactions but from garden-variety asset quality problems and plain-vanilla market risk exposures. In Southeast Asia, the asset quality problems stemmed from overlending to the real-estate sector, often indirectly through finance companies in Thailand or lending investors in the Philippines. In many instances, the rules for arms-length lending were flagrantly violated. The market risk exposures have consisted largely of rather ordinary exposures to currency risks, with many banks having borrowed in US dollars and lent in the local currencies. These are problems the bank supervisors should have uncovered at an early stage by means of the existing procedures in their examination manuals. Only in South Korea have there been problems with financial derivatives, for which the regulatory authorities may not have fully understood the risks entailed. The failure of bank supervision in Asia was by and large that of implementation.

Why did supervision fail? In some cases, supervisors were subjected to pressure that prevented them from doing their jobs effectively. There was also a lack of technical or other supervisory resources, making it easy for banks or other financial intermediaries to circumvent prudential rules. The high cost of Asia's financial crisis underscores the need to give supervisors the incentives, authority, and resources, to do an effective job. It may be noted that giving supervisors sufficient authority may require the abandonment of certain government practices that may lead to unsound credit, such as government-directed lending.

What bank regulators do after a bank has run into problems is as important as what they do to prevent it. In recent years, the workout process itself has come to be viewed as another way of mitigating moral hazard. The modern practice of bank workouts emphasizes three elements: (1) prompt corrective action, (2) imposing on bank managers the costs of their actions, and (3) calling the supervisory authorities into account.

Prompt corrective action means closing down a bank as soon as it is found insolvent. Any delay gives the bank an opportunity to "bet the bank" in an effort to recoup. This has clearly been an issue in Asia. For example, costs of failure of the Bangkok Bank of Commerce increased due to delays in resolving the bank's problems (see Box on page 26).

Imposing costs on bank managers is a break from the traditional way of protecting depositors, which calls for bailing out the whole bank. Recent experience, however, shows that it is possible to keep depositors whole while letting the bank fail. When Barings Bank failed, for example, the Bank of England made sure the bank's depositors were protected while allowing the owners of even such a major bank to lose their capital.[18]

Finally, it is important to call the responsible supervisory authorities into account, particularly if their forbearance imposes additional costs on the system. In the United States, for instance, the law requires the banking authorities to explain their actions if a bank failure results in having to draw from the deposit insurance fund.

[18] Not long before that, however, the Bank of England bailed out Johnson Matthey, a smaller bank than Barings and one that would otherwise have failed because of bad loans to Nigerian borrowers (see Remolona (1992)).

Exchange Rate Policies

The macroeconomic considerations involved in the choice of an exchange rate regime are discussed by Holger Wolf (1998). His analysis of various alternatives leads him to advocate a managed float with wide fluctuation bands. Meanwhile, tapping his familiarity with the region, C.H. Kwan (1998) proposes a basket peg designed to insulate East Asian economies from the impact of yen-dollar fluctuations, and from competitor devaluations. In this section we briefly explore the issue of exchange rate pegging by focusing on its implications for risk-taking behavior and the robustness of the financial sector.

As previously discussed, a peg may be interpreted as an implicit guarantee against exchange rate risk. McKinnon and Pill (1997) show that government guarantees encourage capital inflow surges or "overborrowing", as well as risk-taking in the form of lack of hedging for currency risk.[19] From this perspective, allowing the exchange rate to float would tend to remove the advantage of a government guarantee. Exposing domestic firms to currency risks would encourage hedging. Floating also regulates capital flows. For example, capital inflow surges will be dampened if the currency appreciates.

Managed floats or basket pegs have practical advantages such as anchoring inflation (see Wolf, 1998, and Kwan, 1998), but they tend to degenerate into single-currency pegs, judging by the behavior of some Southeast Asian currencies. The ability of alternative pegging arrangements to encourage hedging is thus doubtful.[20]

Floating exchange rates are a potential problem if policy makers have no alternative nominal target that will anchor inflation. However, Glick and Moreno (forthcoming) observe that in East

[19] However, McKinnon and Pill do not necessarily advocate floating.

[20] In spite of these arguments, other considerations may prompt certain economies to peg anyway. Close attention must be paid, therefore, to the incentives for risk-taking created by such a decision.

Asia, countries whose currencies adjust more freely have had lower inflation rates. Furthermore, a number of nominal targets are available and have been used successfully, including the monetary base (Mexico after 1994), inflation (New Zealand since the mid-1980s) or nominal GDP.

Policies Towards Capital Flows

The Asian financial crisis seems to be generating a backlash against open capital accounts. In all three ADB Institute workshops on Recent Financial Developments in East Asia, the issue of capital controls was raised. While the sudden appeal of capital controls is understandable, particularly as a way of insulating weak financial systems, it is not a sound basis for a long-run solution.

From this paper's perspective, the root of the crisis was not capital flows *per se*, but distorted incentives that led to excessive risk-taking and financing of asset price bubbles. Besides, there is ample evidence that small open economies can manage well even with open capital accounts. Singapore, for instance, has a largely open capital account but is the least affected among the ASEAN countries. Even if it has restrictions on Singapore dollar loans to nonresidents or offshore transactions in Singapore dollars, its domestic financial markets are highly integrated with world financial markets (Moreno and Spiegel, 1997). New Zealand has both liberalized capital accounts and floating exchange rates, yet has posted one of the most remarkable economic turnarounds since the 1980s. The common feature of these economies is that institutional arrangements exist to limit the incentives for excessive risk-taking. In Singapore, this is done through supervision and regulation; in New Zealand through an emphasis on transparency and managerial accountability to stockholders and the public at large.

The availability of foreign financing did accentuate the vulnerability of the financial sector in a number of Asian economies. However, the solution is not to limit these flows administratively,

but to correct the incentives for risky lending through better banking supervision and more flexible exchange rates. From this perspective, capital controls are undesirable, as they insulate weak financial sectors, thus creating incentives to defer the hard choices needed to improve bank supervision and enhance the robustness of the financial system. For this reason, capital controls may increase, rather than reduce, the vulnerability of the financial sector to future shocks. The adverse effects of capital controls are accentuated by the fact that a control bureaucracy will typically benefit from its existence once it is established, so that controls often remain even when the problem for which they were set up no longer exists.

Research and historical experience show that capital controls are effective only in the short-run.[21] The private sector sooner or later finds ways to dodge controls like taxes on short-term foreign borrowing by over- and under-invoicing imports and exports, or by increasing their reliance on parallel financial and foreign exchange markets. The eventual ineffectiveness of capital controls was illustrated most dramatically in the early 1970s, when the erosion of such controls led to the collapse of the Bretton Woods system of fixed exchange rates.

While some studies find that portfolio and direct investments react in the same way to shocks, direct investments are still generally favored for being less volatile. However, capital controls are a less efficient way of encouraging a larger share of long-term capital inflows than are a high degree of credibility and clear, simple, and market-oriented policies (Calvo, Leiderman, and Reinhart, 1994) including price stabilization programs, greater macroeconomic stability, and

[21] In relation to the literature on speculative attacks, studies have also shown that although a government may use capital controls to buy time while it resolves policy conflicts, these do not prevent successful speculative attacks on inconsistent exchange rate policy regimes. Chile imposes noninterest-bearing reserves on short-term capital inflows and is considered by some as a model. However, the effect of restrictions on the total magnitude of inflows over the medium-term is unclear. It is also hard to attribute Chile's successful growth performance to the brakes it placed on short-term capital flows because the country has carried out many other macroeconomic reforms.

institutional reforms. Indeed, controls that are not deemed complementary to more fundamental reforms can actually encourage outflows.

Another way of lowering capital market volatility is to encourage a switch from short- to long-term maturity instruments. Since emerging economies typically lack well-developed capital markets where long-term instruments can be traded, the shift from short- to long-term debt can be done by promoting the issuance of long-term maturity instruments—without having to rely on capital controls. The government can be a catalyst by issuing long-term debt instruments, which the private sector can use as the benchmark for their own long-term debt issues.

Conclusion

At this time, it is not entirely clear whether a 21st century economic historian will conclude that, after some initial hesitation, Asian policy makers responded vigorously to the crisis of 1997, implementing measures that restored market confidence and stable economic activity, and adopting reforms that gave greater play to market forces while curbing the incentives for excessive risk-taking. However, measures being adopted in a number of affected economies imply a growing recognition of the need to make some hard choices. If this leads to meaningful and lasting reforms, 1997 will be seen as marking a brief pause in the region's economic growth, that was followed by a major change in the way East Asian economies interact with the global economy.

Table 1. Percentage Change in Stock Price Index

Country	Date of Recent Peak	Jan-87 to Recent Peak	Recent Peak to Apr-98	Jun-97 to Apr-98
Hong Kong	Jul-97	541	-37	-32
Indonesia	Jun-97	934	-36	-36
Malaysia	Feb-97	356	-51	-42
Korea	Oct-94	256	-62	-43
Philippines	Jan-97	556	-36	-22
Singapore	Dec-93	120	-39	-21
Taiwan	Aug-97	748	-15	-8
Thailand	Dec-93	702	-76	-22

Table 2. Short-term Borrowing From Banks from BIS Member Countries

	Mid-year	(in bil US$)	As a percentage of Total borrowing	As a percentage of Foreign Reserves	As a percentage of GDP
Korea	90	16.5	68	115	7
	94	34.9	73	165	9
	97	70.2	68	211	16
Thailand	90	6.4	58	54	7
	94	27.1	74	101	19
	97	45.6	66	148	29
Indonesia	90	NA	NA	NA	NA
	94	18.8	61	177	11
	97	34.6	59	174	17
Malaysia	90	1.8	26	23	4
	94	8.2	59	26	11
	97	16.2	56	63	17
Philippines	90	3.1	34	342	7
	94	2.6	43	41	4
	97	8.3	59	86	10
Taiwan	90	9.0	91	14	6
	94	17.1	93	19	7
	97	22.0	87	24	8

Source: Bank for International Settlements, IFS.

Box. Selected Episodes of Banking Distress in Asia

1980s

A study by Caprio and Klingebiel (1996) observes that the Philippines (1981-1987) and Thailand (1983-1987) experienced major bank insolvencies, in which most or all of the bank capital was exhausted. Malaysia (1985-1987) and Indonesia (1994) experienced insolvencies of a smaller magnitude. Restructuring yielded satisfactory results in Malaysia and mixed results in the Philippines and Thailand; it was too early to tell in Indonesia. Sheng (1995) estimates the Malaysian financial sector losses during the period at about 4.7% of 1986 GDP. In North Asia, South Korean banks had borne a heavy burden of nonperforming loans associated with policy lending for years. These losses forced large write-offs and the closure or restructuring of a number of industrial conglomerates in 1986-1988. Policy loans continued to be an important feature of lending in South Korea in the 1990s.

1990s

Indonesia. There was a series of banking difficulties in the 1990s (prior to July 1997) that were not large enough to be captured in Caprio and Klingebiel's index but suggest persistent financial sector vulnerability. These included a government supported recapitalization of Bank Duta in 1990, which reportedly lost about US$400 million speculating in foreign currency markets in 1989; the failure of Bank Umum Majapajit Jaya to meet obligations to other banks in the central clearing system in 1990; a slight run on Bank Danamon in 1991 due to rumors of operating difficulties, which required government support; and the liquidation of Bank Summa in late 1992-1993 following over US$ 1 billion in losses. In early 1994, Bank Pembangunan Indonesia (BAPINDO), the state development bank, had a potential US$430 million loss, greater than capital, from an unsecured performance letter of credit. The Ministry of Finance indicated that all of BAPINDO's obligations would be backed by the government. BAPINDO was recapitalized in 1995, and the bank and its ownership were restructured by the Ministry of Finance and Bank Indonesia. In spite of this, Moody's considered BAPINDO's financial fundamentals to be "extremely weak" and assigned a financial strength rating of E in February 1996. In early 1995, Lippo Bank did not meet a US$ 4.5 million temporary clearing obligation due to underestimation of withdrawals caused by a large Telkom public offering. Bank Indonesia averted a crisis by issuing new guidelines permitting banks to use central bank certificates to meet clearing obligations. Since the financial crisis broke out in 1997, the government has suspended the operations or placed under its supervision a total of 30 banks. Another 40 banks are under the surveillance of the Indonesian Bank Restructuring Agency.

Korea. There were no reported signs of major difficulties in the financial sector for most of the 1990s. However, the very high debt ratios of corporations (400 percent or higher) suggest that borrowers were counting on government support in case of adverse outcomes. This was confirmed by the government response to events in 1997, when a slowing economy put pressure on the revenues of large conglomerates (*chaebol*) or their subsidiaries, ultimately leading to bankruptcies among a number of them. Financial difficulties among the *chaebol* in turn put pressure on domestic banks, some of which began to experience difficulties raising funds abroad. Banks were on some occasions encouraged to extend emergency loans to troubled conglomerates, and also received special loans from the government. The government response was illustrated by efforts to stave off the collapse of the Kia Group in July 1997, which private analysts thought supported insolvent banks and increased the incentive for risk-taking,. In October, 1997, before the currency crisis struck the won, Moody's and Standard and Poor's started to downgrade the Korean banks, specifically Hanil Bank, Korea Exchange Bank, Shinhan Bank, Korea First Bank, Korea Long Term Credit Bank, and Industrial Bank of Korea. Since the crisis hit Korea, sixteen financial institutions have been reported closed or suspended and two were taken over by the government.

Thailand. The banking sector had shown signs of stress well before the baht peg crumbled in July 1997. After 1995, an economic slowdown and deflation in asset values created difficulties for Thai financial institutions. One of the largest bank failures was that of the Bangkok Bank of Commerce, which ran into trouble in 1994 but was allowed to continue operating through forbearance by the Bank of Thailand. When a parliamentary debate in May 1996 revealed Bangkok Bank's problems, a run ensued, forcing the Bank of Thailand to inject US$7 billion in liquidity support and to take over the bank. In March 1997, the loan problems of finance companies came to light, but the Bank of Thailand provided the liquidity that allowed them to stay open. In June 1997, 16 finance companies were suspended and told to find additional capital or merge. The biggest of these was Bank One. Further closures followed the devaluation of 2 July 1997 as 42 more financial houses suspended operations, bringing the total to 58 (only 2 of which subsequently reopened). In late January 1998, the government took over Bangkok Metropolitan Bank. Two weeks later, the government seized control of First Bangkok City Bank and Siam City Bank, the seventh and eighth largest banks of the country.

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